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Special section: Advancing the research scholarship of Bame Nsamenang

- Introduction to the special section by the guest editor 289
Robert Serpell
- Overcoming obstacles to a truly global psychological theory, research, and praxis in Africa 292
Seth Oppong
- Mediated mutual reciprocity in the process of African children's social ontogenesis 301
Therese Mungah Shalo Tchombe
- Inter- and intra-cultural variation in learning-through-participation among Hadza and BaYaka forager children
and adolescents from Tanzania and the Republic of Congo 309
*Sheina Lew-Levy, Alyssa N. Crittenden, Adam H. Boyette, Ibrahim A. Mabulla, Barry S. Hewlett,
Michael E. Lamb*
- African indigenous games: Using Bame Nsamenang's Africentric thoughts to reflect on our heritage, pedagogy,
and practice in a global village 319
Godfrey Ejuu
- Staying power: Remembering A. Bame Nsamenang 328
Alan Pence
- Book review of *Handbook of Applied Developmental Science in Sub-Saharan Africa*, edited by Amina Abubakar
and Fons J.R. van de Vijver 335
Dabie Nabuzoka

Regular articles

- Pathways to flourishing among pharmacy students: The role of study demands and lecturer support 338
Mariëtta J Basson and Sebastiaan Rothmann
- Validation of the Depression Anxiety Stress Scale-21 (DASS-21) in a non-clinical sample of South African
working adults 346
Zonica Dreyer, Carolina Henn and Carin Hill
- Gratitude, well-being and psychological distress among South African university students 354
Henry D. Mason
- Correlates of physical activity among adults with anxiety symptoms in South Africa 361
Supa Pengpid and Karl Peltzer
- Profiling work-related signature strengths of "Born Free" South Africans: A gender perspective. 366
Ita Geyser and Madelyn Geldenhuys
- The psychosocial needs of parents of adolescents who attempt suicide 375
Vangi E. Ngwane and Anna E. van der Wath
- Personality profiling of South African rugby union players 383
Ankebé Kruger, Kobus Du Plooy and Pieter Kruger
- Psychological contract influence on organisational identification among call centre employees. 388
Definite Mutendi, Roslyn De Braine and Nelesh Dhanpat
- Employee engagement, organisational commitment, and job satisfaction in Namibia, South Africa, and Zimbabwe:
An exploratory study 393
Molefe Maleka, Mthokozisi Mpofu, Clifford Kendrick Hlatywayo, Ines Meyer, Stuart Carr and Jane Parker

Brief reports

- Sedentary behaviour and sleep problems among young, middle-aged, and older persons in South Africa:
A brief report. 401
Karl Peltzer and Supa Pengpid

Professional issues

- Adult attachment theory and Rorschach Inkblot Method: A systematic literature review 405
Pholly D. Zizi, Ruan Spies and Cristel Vosloo

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SPECIAL SECTION: Advancing the research scholarship of Bame Nsamenang

Introduction to the special section by the guest editor

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Bame Nsamenang's contributions to scholarship on human development in Africa were grounded in the epistemological insight that psychology is a reflexive enterprise, and that its application in Africa demands according priority to a cultural heritage deeply embedded in the social circumstances in which children are raised. While those circumstances change over time and are powerfully impacted by encounters with people of other sociocultural origins, to understand how African children develop into African adults demands an Africentric focus. His own "theorisation of human development [was] grounded in primary local research, enriched by reflection on personal experience, critical reading of contemporary Western psychology, and wide-ranging review of African culture, philosophy, history and politics" (Serpell, in press). The social ontogenetic perspective elaborated in Nsamenang's (1992) seminal book *"Human development in cultural context"* informed several processes over the course of his vibrant international career. These continue to thrive in the scholarly literature, inspiring new research questions and research methods, as well as challenging policy proposals and practices by applied scientists and policymakers regarding appropriate ways of designing educational, health, and social services for children in Africa. This commemorative section of the *Journal of Psychology in Africa* illustrates these various ways in which Nsamenang's enduring influence is felt and will continue to be manifested in years to come.

Seth Oppong's article builds on Nsamenang's (2007) critique of most psychology in Africa as having been narrowly constrained by its connection with colonialism. He reviews several different formulations of the paradoxically self-defeating tendency of African scholarship to deny African cultural beliefs and practices a respected place in the interpretation of African behaviour and experience. He further argues that the exogenous influence of epistemological violence is overlain with current institutional practices within the continent that sustain the hegemonic marginalisation of indigenous cultural resources by Western traditions under the guise of globalisation. Oppong challenges indigenous African scholars to critically examine their own practices for symptoms of the condition termed *negromarchy* by the African-American scholar Thomas (1971): "a form of confusion and doubt of self-worth in an African ... due to dependency on or the use of standards and definitions from White American culture" (cited in Jackson 1976, p. 25). He

proposes several complementary, strategic ways in which African scholarship can promote a "healing process":

- the inclusion of more African content in psychology syllabi implemented at African universities;
- greater emphasis by African journals on accuracy relative to methodological rigour as a criterion for accepting manuscripts for publication;
- less emphasis by African university administrators on international citation indicators as a measure of research output quality when assessing African scholars for faculty promotion; and
- more nuanced reference by African moderators of public opinion to global university rankings that rely on publication counts in international databases.

Through these strategic interventions, Oppong calls for the systematic promotion of African "epistemic authenticity with the view to ensuring that the conceptions of reality ... reflect authentic African socio-cultural realities but not an imposed or self-imposed contrived reality borrowed or derived from the West" (p. 298).

In the second article, Therese Tchombe, a long-term collaborator with Nsamenang, presents a complement to Nsamenang's social ontogenetic perspective on African children's development, in the form of her theoretical construct of *mediated mutual reciprocity*. Drawing on focus group discussions with young people and their parents in widely dispersed communities across the diverse nation of Cameroon, Tchombe notes a wide consensus "that despite the challenges and adversities faced by these children, their ingenuity, resilience and cultural assets play an important role in mediating positive outcomes" (p. 301). Given the prevalence in African contexts of participatory rather than explicitly instructional learning, she argues that major Western theories that recognise the active role of the learner fall short of acknowledging "the fact that the child is the main driver of his/her own development and learning" (p. 301). Building on Nsamenang's theme of indigenous African socialisation as priming children for the emergence of the next phase of their development, Tchombe's construct of *mediated mutual reciprocity* (MMR) articulates a theoretical account of how "African parenting values and practices foster children's self-education in participative learning processes in their families and communities, especially in the peer cultures of early childhood" (p. 306). Rather than construing adults as shaping the development of the child, "MMR rather views the child as the one who initiates his or her own

development and then actively stimulates the adult in mutual mediation and reciprocity” (p. 306).

The third article (by Sheina Lew-Levy, Alyssa Crittenden, Adam Boyette, Ibrahim Mabulla, Barry Hewlett, and Michael Lamb) is focused on learning-through-participation in economic work by children and adolescents in two widely geographically separated African hunter-gatherer societies. It presents detailed, quantitative observational data, supplemented with qualitative interviews. The predominant form of socioeconomic organisation in sub-Saharan Africa, including the Bamenda grasslands of Cameroon – where Nsamenang grew up and conducted his initial field research published in collaboration with Lamb (Nsamenang & Lamb 1993) – is sedentary agriculture or animal husbandry. However, the forager societies that hosted the present study:

... primarily rely on non-domesticated resources; are fiercely egalitarian in the sense that there is no inherited hierarchy according to age, and little differentiation of status according to sex ...[and] value autonomy in the sense that individuals rarely direct each other or impose their will on one another. (pp. 309–310)

While ecological variations between the two settings were predictably matched by differences in particular patterns of child participation in economic activity, the study found that in both sites:

... children were rarely assigned chores. Children decided whether to forage, and with whom. Adults respected children’s decisions to forage with or without adults, even if these decisions countered normative foraging group compositions...Taken together, these findings demonstrated that the cultural value of autonomy shared by many foragers is evident in the childrearing practices of Hadza and BaYaka parents...Whereas Nsamenang noted the indigenous African social ontogenetic paradigm “is premised not on an independent or autonomous frame; its foundational principle is an interdependent or relational script”, [this study’s] data instead suggested that for Hadza and BaYaka foragers, individual autonomy precedes interdependence, even as foragers cooperate in all aspects of life. (p. 315)

However, while respecting their autonomy:

... adults were attuned to children’s skills, and provided opportunities for learning through intent participation rather than explicit instruction ... While learning was primarily in the domain of subsistence, children also developed an understanding of cultural values and norms of behaviour, such as the sexual division of labour and autonomy. (p. 315)

The authors conclude with the recommendation that “[f]uture studies should consider differences in subsistence and environment when investigating learning cross-culturally” (p. 316).

Widespread opportunities for the participative learning processes highlighted by Nsamenang as characteristic of African childhood settings are afforded by indigenous

games and songs. As Serpell & Nsamenang (2014) noted, they represent a somewhat neglected fund of knowledge for enriching the quality of Early Childhood Development Care and Education (ECDCE) programming. The article by Godfrey Ejuu, set in Uganda, takes up the challenge of documenting such games and articulating their affordances for psychomotor, cognitive, and socioemotional learning. Despite the absence of formal instructional guides or adult supervision, the games that he describes are clearly constituted by rules, adherence to which is mediated by consensus among participants. Drawing on Nsamenang’s Africentric philosophy, Ejuu reflects on how indigenous games represent a significant element of African cultural tradition, worthy of international recognition as a distinctive regional contribution to world heritage. Moreover, if local traditional games were incorporated in the curriculum of Early Childhood Education programmes as a pedagogical resource, their familiarity to elders in the children’s home community might enhance the depth of mutual understanding between parents and teachers.

Nsamenang’s Africentric commitment extended beyond theory into application through

... a critical engagement with policy proposals and practices by applied social scientists, policymakers and educators regarding appropriate ways of designing ECDCE services in Africa, and a sustained and productive commitment to nurturing endogenous African scholarship on child development and education. (Serpell, in press)

The article by Alan Pence, another long-term collaborator with Nsamenang, documents the context and impact of their well-known contributions to applied developmental psychology over an extended time period across the African continent, notably in ECDCE policy development and in tertiary education’s engagement with the field of child development. Noting the remarkable cumulative impact of the Early Childhood Development Virtual University (ECDVU) initiative over the first two decades of the 21st century, Pence also illustrates regional progress on a number of other indicators; including the number of African tertiary colleges and universities offering programmes on ECD/ECE, and the number of African-led ECD publications appearing in the scholarly literature. Regarding the content of that literature, he touches on a topic close to concerns expressed in the article by Oppong, noting a dynamic tension around the insider-outsider axis, between universalistic generalisation and local validation, expressed in policy, curriculum and practice as a still enduring tension between, on the one hand search for and promotion of single “best practices” and on the other hand support for diversification and local relevance. Nsamenang, as Pence notes, was a resolutely persistent advocate of endogenously generated curriculum and local accountability. In both theory and practice his work served as a buttress against the power of invasive intervention, and manifested its own power to endure and expand through advocacy and professional education.

The last contribution to this commemorative section is a review by Dabie Nabuzoka of the *Handbook of Applied Developmental Science in Sub-Saharan Africa* published

in 2017, and edited by Amina Abubakar and the late Fons van de Vijver. In addition to a chapter by Nsamenang on “Doing human development scholarship in Africa within the crosscurrents of Euro-Western intellectual cascade”, the handbook includes 19 chapters by other authors, and as the editors observe:

... there is a good representation of African-based scholars and of scholars who have actively engaged in research in Africa over a prolonged period. The authors of the different chapters bring a wealth of experience from field work in Africa, thus providing an in-depth understanding of the developmental issues from an African perspective. (p. 4)

Nabuzoka provides a concise summary of individual chapters and concludes that the book:

... contributes to the development of African Psychology by illustrating the link between various aspects of the African context and general and psychological development, and covering a wide range of African-based research. Methodological considerations in making such links between context and psychological functioning, and state-of-the-art strategies for maximising the developmental potential of children in Sub-Saharan Africa are carefully illustrated and discussed, together with some policy and practical implications. (p. 336)

Collectively, the various contributions to this section illustrate the multiple implications for research and practice of the publications by Bame Nsamenang, whose creative energy has inspired a movement that seems poised to endure and grow, affirming the value of African indigenous ideas and practices for understanding and supporting child development both in Africa and elsewhere around the world.

Although Nsamenang had a fluent oral command of French, almost all of his publications were in English. The recent publication of the long-awaited French translation of the 2011 Handbook (Nsamenang, Tchombe & Sabatier 2019) adds a welcome layer of accessibility of writings about his Africentric perspective for a francophone readership in Africa.

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Overcoming obstacles to a truly global psychological theory, research, and praxis in Africa

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In African countries, psychology as it is taught, researched, and practised contributes to epistemic injustice and epistemological violence while depriving Africans of epistemic agency. This is largely because psychology has remained and continues to remain Eurocentric. However, the continual Eurocentric hegemony is not entirely imposed but internalised. This has made this Eurocentric hegemony self-perpetuating with African involvement. In this paper, the sources of this hegemony are explored with a view to identifying how Africans themselves contribute to the persistence of these academic “ills”. Furthermore, processes are examined through which African psychologists can disentangle themselves from this vicious cycle in order to make accurate and innovative contributions to the global understanding of human nature. Nsamenang’s pioneering role in confronting the wrongs is discussed, paving the way for the next generation of African psychologists to make contributions that are similar to, or surpass, Nsamenang’s lifetime contributions. I conclude by making some recommendations as to the way forward in the post-Nsamenang era.

Keywords: epistemic agency, epistemic authenticity, epistemic injustice, epistemological violence, Nsamenang

‘Yen honam na eye tuntum na yadwene de enye tuntum.’ (The colour of our skin is black but the colour of our mind is not black.)

K. Sarfo Kantaka, Chairman, Kankanka Group of Companies and an inventor

Introduction

Academic psychology arrived in Africa along with other imports that came with European colonisation (Nsamenang, 2007; Oppong, 2016; Oppong Asante & Oppong, 2012). Thus, psychology as a discipline and a profession evolved in the context of Africa’s contact with Europe. However, this does not imply that psychology as a subject matter dealing with human nature evolved in the same way (Oppong, 2017b). All societies have shown interest in, and its peoples have concerned themselves with, understanding human nature, an endeavour which predates any form of academic discipline of psychology (Azibo, 2018; Oppong, 2017b; Nwoye, 2015b; Tyson, Jones, & Elcock, 2011; Yang, 2012). Given the circumstances that accompanied the importation of academic psychology into Africa, it has remained largely Eurocentric in orientation and approaches (Allwood, 2018; APA, 2017; Azibo, 2018; Matsumoto & Juang, 2007; Oppong, 2017b; Sam, 2014). For a long time, psychology has maintained a focus on the minority of the world (Sam, 2014). Indeed, Nwoye (2017) argued that the Eurocentric worldview is relevant and ought not to be ignored; yet, the current paradigm dominated by the Eurocentric worldview needs to be expanded to accommodate other equally relevant perspectives. Thus, the Eurocentric worldview is relevant but not sufficient to reflect the wide spectrum of human experiences and perspectives (see Nwoye, 2015a, 2017).

To the extent that psychology has had a Eurocentric focus, the same is true of its subfields including developmental psychology (APA, 2017; Jahoda, 2016a; Matsumoto & Juang, 2007; Oppong, 2013a; Oppong Asante & Oppong, 2012; Oppong, 2015a; Serpell, 2018).

To correct this narrow perspective, as Serpell (2018) has noted, a number of African developmental psychologists have devoted their theory and research to addressing these concerns. One prominent African researcher was Augustine Bame Nsamenang, who contributed immensely towards correcting this narrow perspective both practically and theoretically. According to Serpell (2018), Nsamenang “theorised a distinctively African, lifespan social ontogeny, delineating seven phases in the development of social selfhood, each characterised by a distinctive set of developmental tasks defined within the culture’s primarily socio-affective developmental agenda” (p. 391).

Scholarships that ignored or marginalised indigenous African ideas, with or without mischievous intentions, have perpetrated a number of wrongs in the understanding of human experiences in Africa (see Oppong, 2015a; Serpell, 2018). This paper builds on a critical discussion of those wrongs in the published literature, in search of a new integrative analysis of the concepts of epistemic injustice, epistemic ‘de’-agency, epistemic violence, psychological misorientation, negromarchy, and meta-colonialism. Previous applications of the concepts of psychological misorientation and negromarchy have been in the area of psychiatric diagnosis of personality disorders peculiar to Africans (Azibo, 2014). The argument of this paper deploys these old concepts in a new way to shed light on the right of the African scholar as a knower, and proposes a new, contrasting concept of epistemic authenticity. An important goal of Africentric scholarship is to project and mainstream multiple perspectives about human experiences that include Africans. Previous contributions have sought to achieve this through confrontation, consciousness raising, and challenging oppressive power (Ake 2012; Ndlovu-Gasheni, 2013; Nwoye, 2017).

Goal of this paper

The present paper adopts a different approach through a sympathetic understanding that many African scholars

are unaware of how they have been, and continue to be, affected by colonial, structural, institutional and editorial practices, and seeks to assist them to face reality through a healing process.

A vicious cycle of exclusion and narrowing perspectives in the study of human nature

This paper will consider various ways in which the conduct of psychology theory development, research, and praxis has resulted in epistemic injustice, and epistemological violence (EV). Furthermore, it will examine how all those negatives collectively undermine and negate the epistemic agency of the African psychologist. Fricker (2007) has described epistemic injustice as “a wrong done to someone specifically in their capacity as a knower” (p. 1). Thus, the victims of epistemic injustice are denied and deprived of the ability to create knowledge. However, when – amidst these denials and deprivations – they succeed in creating knowledge; their contribution is dismissed along with their geographical region of interest. As Chimuka (2012) poignantly observed with respect to philosophy:

History of ideas is an account of the various ideas which have shaped human civilization. History of philosophy is a selective treatment of the genesis, development and transformation of philosophical ideas. Although there are many streams feeding into the History of ideas, Western culture has been paraded as the nexus of human civilization – a cultural universal towards which the other cultures of the world were supposed to develop. This has resulted in a very narrow and pretentious picture of the history of philosophy. Significant other perspectives from other cultures, particularly from Africa were dismissed, appropriated without acknowledgement or simply held in contempt. In the process, a lot of the intellectual resources belonging to the non-Western world were not maximally utilized for the benefit of human kind. (p. 1)

This epistemic injustice has resulted in the exclusion of an entire continent and its people from the canonisation of ideas (Graness, 2015). The exclusion of African ideas from textbooks and course syllabi creates impressions in the minds of African students that the African is incapable of making conceptual and methodological contributions to the discipline of psychology (see Chimuka, 2002; Graness, 2015). Introductory psychology textbooks and/or history books on psychology almost always paint a picture of an all-male Caucasian discipline (Arnett 2009, Henrich, Heine, & Norenzayan, 2010; Schultz & Schultz, 2012). They create the impression that the African cannot be a pace-setter but should be resigned to his/her role as a standard-follower. There are hardly any African theories in the human development literature that have become mainstreamed to the extent that they have been included in human development textbooks (Oppong, 2019). In other words, the epistemic injustice is conducted through the gatekeeping role associated with publication. Africans are often locked out if they fail to be “good boys and girls” (Yankah, 2012 p. 51) and that often involves denying that

African theories exist as complementary or alternative to the Western canon. This situation is perpetuated by the lack of major African publishing houses to carry forward these African ideas (Tchombe, 2018; Nsamenang, 2007).

These exclusionary tendencies associated with the power play in the publication process result in the denial of epistemic agency to the being of the African, making him/her not a knower but merely a learner. Oppong (2017b) describes epistemic agency as “the ability to engage in and to create for oneself systematic knowledge to meet one’s needs” (p. 9). Epistemic ‘de’-agency is proposed in this paper as the conceptual opposite of epistemic agency. However, it is not entirely the fault of the current bearers of the “truth” in psychology to deny the African part of the intellectual space to participate in the evolving discourse in the various subfields of psychology. Africans themselves continue to internalise and pass on such a state of mind to the next generation of Africans. Oppong (2014) provided a detailed description of the intergeneration transmission of learned helplessness. Additionally, Azibo (2014) has captured this internalised lack of epistemic agency as one of numerous manifestations of what he refers to as psychological misorientation of African descended people. He defines psychological misorientation as:

(a) interpreting and negotiating reality or proceeding in the world with that part of one’s individual consciousness that determines his or her psychological Africanity (racial identity) being bereft of cognitions and lacking ideation that would orient him or her toward prioritizing own-race maintenance and, most importantly, (b) the person’s cognitive structure/ideational mechanism, i.e., constellation of beliefs, values, attitudes, and so forth is composed of concepts opposed to or incongruous with African-centricity in thinking and behaving, especially those of psychological Arabism, psychological Europeanism, or nihilism. (Azibo, 2014, p. 48)

Furthermore, Azibo (2014) adds that psychological misorientation of the African descended people can result more specifically in negromarchy. Negromarchy is a form of “confusion and doubt of self-worth in an African ... due to dependency on or the use of standards and definitions from white American culture” (Thomas, 1971, cited by Azibo, 2014, p. 56). Bulhan (2015) aptly described these tendencies in terms of what he called meta-colonialism. He views meta-colonialism as the “socio-political, economic, cultural, and psychological system that comes *after*, *along with*, or *among* the earlier stages of colonialism” and suggests that it manifests itself in “the more savoury euphemism of globalisation”, though it “revives an old system of colonial exploitation and oppression” (Bulhan, 2015, p. 244). However, globalisation is nothing more than projecting one local culture to the world stage (Yankah, 2012; Oppong, 2015a). Despite this, Africans are held captive or are holding themselves captive to following “global” standards (Azibo, 2014; Bulhan, 2015; Mignolo, 2009). However, it appears the terms “global” or “international” are applied only to what comes from outside the continent of Africa (Yankah, 2012). It

so happens that this has destroyed the self-worth of the African that he/she only considers knowledge if it is produced in any of the widely used European languages (English, French, German, etc.) and it is disseminated through Euro-American institutions of higher learning, thereby ascribing only to those institutions the status of genuine epistemic centres and the badge of authority to (de)construct knowledge (Yankah, 2012). African scholars attempting to revolutionise their disciplines encounter difficulties (Tchombe, 2018).

A corollary of epistemic injustice and epistemic 'de'-agency resulting from psychological misorientation, meta-colonialism, or negromarchy is epistemological violence. Teo (2010) described epistemological violence as the:

... practice that is executed in empirical articles and books in psychology, when theoretical interpretations regarding empirical results implicitly or explicitly construct the Other as inferior or problematic, despite the fact that alternative interpretations, equally viable based on the data, are available. (p. 298)

He further added that:

... the term epistemological violence [EV] as it is used in the argument does not refer to the misuse of research in general but is specific to theoretical interpretations of empirical results that have negative connotations for the Other in a given community. (Teo, 2010, 298)

It is worth noting that the racist implications of culturally biased psychological testing were roundly criticised in American psychology decades before they came under attack in post-apartheid South Africa (Cole & Bruner, 1971; Gould, 1981). In apartheid South Africa, psychological testing was historically used to commit EV against black South Africans in the interpretations of racial differences in performance on intelligence or general cognitive ability tests (Paterson & Uys, 2005; Setshedi, 2008; Schlapelo, & Blanch, 1996). The differences were interpreted by comparing scores of the blacks against white norms. This contributed to identifying pathologies in blacks, and promoting and reinforcing inequality between blacks and whites (Setshedi, 2008). The dominant mainstream of white psychologists interpreted the scores to mean that the blacks were inferior to the whites and would rather benefit from separate education compatible with their level of intelligence (Setshedi, 2008). It is not far-fetched to argue that the impact of those and other historical wrongs are still today being felt in South Africa. EV constitutes a form of structural violence that promotes inequality which can precipitate direct or episodic violence (see Christie, Tint, Wagner, & Winter, 2008; Christie, Wagner, & Winter, 2001). The "#FeesMustFall" protest and other student protests in South Africa may have been partly fuelled by reactions to such historical EV. Similarly, EV even affects stereotypes formed about others and this can affect what abilities a group of people will believe they are capable of developing (Oppong, 2015b).

As Oppong (2015a) has indicated, EV results from the use of the so-called global standards which are meta-colonial in nature, presenting a western worldview

about human growth and experiences as universal. This practice leads to situations in which African children, adolescents, and adults are presented as weak, inferior, and needing interventions to improve, when compared to Eurocentric ideals as if those are universal (Oppong, 2015a). Unfortunately, the necessary improvements tend to be more about attempts to westernise Africans. Indeed, in the final analysis, socio-economic development is often construed as a progression towards westernisation (Ake, 2012; Oppong, 2013b). However, this EV is not only committed against Africans but also by Africans against Africans due to negromarchy. Thus, there is a vicious cycle which began with colonisation of African land, African being, and African mind. This then resulted in meta-colonialism (Bulhan, 2015) and was perpetuated in modern times also by negromarchy, because when the coloniser is long gone, the once colonised are maintaining the exploitative systems by their own attitudes, cognitions, and actions; without realising it.

Narrow perspective of human nature as perpetuated by African psychologists and social scientists

Some of the wrongs, as committed and perpetuated by African psychologists, manifest in many ways. The first is the absence of African content in psychology syllabi implemented by African psychologists (Oppong, 2016). This may stem from three sources; namely (i) genuine lack of African content to include, (ii) lack of interest in including African content because it is not the standard practice in the particular subfield, and (iii) an unwillingness to search for African content to include in the syllabi. However, the first source is largely also the result of epistemic injustice that has denied Africans epistemic agency, making the particular African scholar believe that there is a genuine lack of African content. In other words, such African psychologists do not actually believe there can be any African content as their source of content is Euro-American epistemic centres (Yankah, 2012). The second and third sources are likely to originate from the idea that Africans cannot be knowers but ought to be learners as the real source of knowledge is what comes from the Euro-American epistemic centres. Thus, Africans themselves make it difficult to identify and propagate African concepts and theories in psychology, in general, and developmental psychology in particular.

However, there are a number of African academic outputs that can be included in the teaching of (developmental) psychology. For instance, Nsamenang's (1992, 2006) theory of social ontogenesis and Oppong's (2017b) bio-cultural theory of personhood are useful frameworks for studying human development in the African setting. Similarly, Serpell's (1993) work on the conception of cognitive abilities among ChiChewa speakers in Zambia can be used to teach African conceptions about intelligence. Again, Azibo's (2014, 2018) work on a theory of African personality and psychiatric diagnostic nosology can be equally useful.

There are African conceptions in the other subfields as well. For example, Oppong (2015c) has advanced the risk chain process model to account for how and why risk perception results in accidents. Nwoye (2017) has

explored and expanded the typology of dreams beyond the compensatory individuocentric dreams (dreams that enable the dreamer to find emotional fulfilment of some unmet needs) associated with Western psychology to include anticipatory individuocentric dreams (dreams heralding what is to occur in the lives of the dreamers), intersubjective (receiving message in dreams for other people), and transcendental dreams (visitation in the form of dreams by ancestors or spiritual beings through invocation). Similarly, Nwoye (2015a) expanded the Western paradigm of psychopathology to include Africentric approaches to diagnosis and treatment such as instrumental and mediumistic divination. Indeed, a thorough search through the *Journal of Psychology in Africa*, the *South African Journal of Psychology*, the *Journal of Black Psychology*, the *Journal of Pan African Studies*, as well as the numerous psychology journals indexed in African Journals Online (<https://www.ajol.info/>) will yield very useful African content for inclusion in the syllabi.

A second aspect of the vicious cycle arises from the focus of the so-called global literature on issues of primary concern to a regional or local minority of the world (Sam, 2014). Research conducted by Africans tends to attempt to identify and address gaps in the “global” literature, when in fact the “global” literature – as Western publication gatekeepers make us believe – is really local or regional literature relating to the Euro-American epistemic centres. However, African scholars tend to address the gaps in the so-called global literature in order to get published in high-impact journals. The consequence is that African research is viewed as too data-driven and less conceptual (Yankah, 2012), yet it also makes minimal contributions to the understanding of the African worldview.

Indeed, Marsella (2013) has argued that accuracy rather than scientism or scientific rigour should become the “arbiter of psychology as a discipline for inquiry” (para. 1). The implication is that knowledge constructed should seek to provide accurate descriptions of behaviour in the African contexts as well as provide accurate explanation for such behaviours. The very idea that findings of a given strand of psychological research should be situated in the extant global literature is untenable. This practice is passed on to the next generation of African psychologists in how they are taught research methods, mentored to get published, and supervised in their postgraduate research. Yet the very idea of scientific rigour is questionable given that it is, in and of itself, a Euro-American standard of positivist epistemology that mainly assigns credibility to quantitative methodology. Accuracy should become the primary concern, while rigour becomes the secondary objective.

The domain of faculty promotion at African universities is another locus of epistemic injustice, epistemic ‘de’-agency, as well as negromarchy. In the area of faculty promotion at African universities, there is a tendency to sometimes conflate two related but distinct issues; namely:

- Use of citation indicators as an index of quality. While citation counts in peer-reviewed journals might appear to be unbiased since they disregard the country,

culture, and language of the author; the practice of using those favours those publications that appeal to editors and authors in the global North and West and thus perpetuates cultural bias.

- Acceptance by African Universities of the globalised designation as being “under-developed” relative to older universities in the politically dominant countries in the global North and West, without considering the possibility that their shorter lifespan might place them at a disadvantage in terms of innovativeness and relevance to the contemporary world.

Some African university administrators and psychologists seem to think that African-owned journals are not worth publishing in (Addae-Mensah, 2008; Oppong, 2013b). This is usually because these African journals are not indexed in “respectable” indexes, or have no impact factors. The tendency to attach premium to non-African journals results in crowding out useful manuscripts (professing solutions to African problems) simply because the African journals are seen as too local and not international (Yankah, 2012). Besides, editorial decisions by the western journals result in not publishing certain topics that may be of interest to Africans (Addae-Mensah, 2008; Oppong, 2013b). Oftentimes, the reasons for desk rejection, among other things, include the view that research is not of interest to the targeted audience of the journal. Even when the editorial team subjects the manuscript to the blind peer review process, reviewers unfamiliar with the African contexts and problems tend to also reject the manuscripts due to their failure to appreciate the significance of the manuscript’s contribution in an African context. This source of bias may be expected to decline in future as more African and other non-Western scholars are recruited to serve as reviewers and editors.

A further aggravating factor in the current era is the idea of global university rankings which rely partly on publication counts in certain international databases. Administrators of research-intensive African universities strive for, and celebrate, higher rankings received by their universities as a public relations strategy. Similarly, they are chastised by the educated public about any decline in rankings as an indicator of the falling quality of education; including research productivity.

In sum, editorial practices of Western journals and use of publication outputs for university ranking serve to commit epistemic injustice against African scholarship by generating a “globalised consensus” that African scholars are not significantly contributing to world knowledge. This stigma then reinforces the stereotype that the African scholar is without a right as a knower.

The negative consequences of epistemic violence in (developmental) psychology in Africa extend beyond academia into the field of praxis by informing both the design of interventions and the evaluation of such interventions. It is well established in the evaluation fields that when the intervention rationale is wrong, the intervention fails (Fink, 2005). Two common sources of faulty intervention rationale in applications of developmental psychology in Africa are: (i) EV that results in the identification of pathologies when none actually exists, or false positives; and (ii) the use of questionable

tools in conducting needs assessment to establish the need for intervention (Oppong, 2015a). When culturally insensitive tools are used in the assessment of human growth in the African, we are more likely to identify problems when none exists (Oppong, 2015a). Following from this will be an intervention designed to address an identified problem that does not exist. Similarly, in evaluating the interventions, the use of tools that are insensitive to the actual state of growth of the African will create an impression that the intervention failed (Oppong, 2017a). Thus, the net effect is that the use of questionable tools results in failed interventions, whether through implementing needless interventions or using the wrong tools to measure the impact of the interventions. These issues constitute another form of wrongs against Africans and by Africans. Development agencies do commit these wrongs with regularity (Oppong, 2015a) and African psychologists contribute by treating the imported tools as universal. The very idea of treating the imported tools as universal arises from lack of epistemic agency, with African scholars adopting the role of standard-followers and learners, rather than knowers and standard-creators.

Correcting the wrongs to expand the existing narrow perspectives on human nature

African psychologists have a key role to play in expanding the narrow perspectives about human nature. African psychologists must face their greatest fears: That we have been battered by years of colonialism, slavery, and apartheid which have affected our abilities to construct our own reality. We must admit that many of us suffer from psychological misorientation resulting in negromarchy. Thus, we must first heal ourselves (Azibo, 2018, 2014; Grills, Nobles, & Hill, 2018; Mate-Kole, 2013). Self-denial of the long-term, intergenerational effect of the past struggles only suggests that we fail to understand meta-colonialism (Bulhan, 2015). Unfortunately, the denial of meta-colonialism neither dissolve its impact on the denier, nor does the denier escape the impact (Bulhan, 2015). This is because this form of occupation of the mind manifests as globalisation which revives the old forms of exploitative and unequal relations between Africans and others (Asians, Euro-Americans, and Arabs).

The admission of this meta-colonialism and our daily struggles with negromarchy will facilitate the healing process. Its outcome is not to make an African (developmental) psychologist radical but to enable us know our worth as equal knowers in this world and our right as humans also to construct knowledge for ourselves and others. As an outcome of the healing process, our psychological blackness must correspond to our genetic blackness while we adopt a correct orientation of defending, protecting, and maintaining our racial group (Azibo, 2018, 2014). Simply put, we will begin to realise that African (developmental) psychologists have not been assigned any permanent role of receiving knowledge from others but we have every right to globally share in the construction of knowledge. This realisation can only come from admitting that Africans are battered by negromarchy and meta-colonialism and that we have unknowingly internalised to the extent that the imposed and internalised

“reality” has become natural world order to Africans. We must admit that the current world order in knowledge production is unnatural, was created several centuries ago, and persists today in different forms.

Following from this healing will be the unleashing of the African potential to contribute and participate in the “global” knowledge production and dissemination. The self-worth of the African will improve from this healing process (Grills et al., 2018) and will make the African psychologists more comfortable in arguing from this strong base, our Africanness. Additionally, it will help in producing more world intellectual leaders from Africa. Augustine Bame Nsamenang represents a good example of an African who healed himself to grow into world intellectual recognition (see Tchombe, 2018). Perhaps, Bob Marley was right when he sang that no one can emancipate us from our mental slavery but ourselves. African psychologists need to follow the example of Professor Nsamenang and others to emancipate ourselves to take our rightful place in global affairs, including (but not limited to) knowledge construction and applications.

Beyond the healing, other concrete steps should be taken to improve African participation in knowledge production and use. Oppong (2013b) has written extensively on some of the things we must do to indigenise knowledge production in order to deal with EV and epistemic injustice, and embrace our epistemic agency. For instance, pedagogical approaches should be transformed from single-loop learning (what is?) to double-loop learning (why and what is?) (Oppong, 2013b). African psychology students must be taught to learn not only what concepts exist in (developmental) psychology but why they exist. This requires teaching history as part of every concept that is introduced. Historicism in the teaching of psychological concepts will liberate the students and will not make them captive to ideas without an appropriate inquiring attitude. To this end, the present author is working towards mainstreaming what he calls “psychological theoretics”, as a proposed subfield of psychology that concerns itself with:

... the study of methodology of psychological investigations, theories of psychology, history and the philosophy of psychological science as well as their interrelations with purpose of advancing the methodological, theoretical, and philosophical practices in psychological science. [Its purpose is to] to ground psychologists in appropriate subject matters to enable them engage in original investigations on issues that will yield good theories that can solve their societal problems. (Oppong, 2019, p. 7–8)

In addition to the above, the cannon of theories and tools to which we, as psychology educators in Africa, introduce our students should change. Seminal works done by African, African American, and Africanist psychologists should feature in the content we teach in the various departments of psychology across the continent of Africa. A valuable teaching resource is the issue of the journal *Africanus* edited by Professor Ndlovu-Gasheni (2013) that focused on interrogating “key aspects of development from

a decoloniality perspective” (p. 1). In this issue, the authors discussed many pertinent issues relating to the de-colonial epistemic perspective that African psychologists and social scientists should become familiar with to improve their work and to facilitate their personal healing.

Research methodology used to ensure that African perspectives on human experiences are projected does not necessarily require new methods *per se*. It involves putting existing methods into use in different ways (see Nwoye, 2017; Serpell, 1993). However, there is a need for the African social scientist to be creative in the choice of methods as well as the use of tools in conducting research. Thus, the researcher must become problem-oriented rather than method-oriented; thereby allowing the problems being addressed to inform the selection of methods and tools for the research.

For example, Serpell (1993) studied, among other things, the conception of cognitive abilities among ChiChewa speakers in Zambia. Traditionally, a researcher working from the positivist paradigm would define the concept and determine the extent to which the participants’ conceptions approximate the researcher’s conceptualisation. However, Serpell engaged the key informants (community elders and parents) with the view that going into the community with predefined concepts about the concept of intelligence or cognitive ability would only impose on the participants’ concepts that are alien to their worldview or that differ significantly from their worldview. Serpell asked the community elders to identify which children in their community they would ask to carry out tasks for them and which ones they would not. This mundane question opened up the discussion into what constitutes intelligence among ChiChewa speakers in Zambia. This approach is preferable to situations where researcher studying, say child abuse, would ask community members what they consider to be child abuse; this imposes the researcher’s view on the community and deprives the community’s voice while making it difficult for the researcher to identify and project the African perspective. A preferred approach would be to ask the community elders what they consider inappropriate actions of parents or adults towards their children. Such an approach is more inductive and contributes to expanding the narrow perspectives of Western psychology about human experiences.

In his study of dreams in Africa, Nwoye (2017) also used methods that would usually be considered less rigorous when viewed from the positivist quantitative approach. Nwoye utilised four sources of data for his study; including (i) collecting narrative accounts of the dreams from participants as opposed to personal dreams by the participants themselves, (ii) review of the extant literature, (iii) qualitative (interview-based) field data from previous research with a traditional medicine doctor, and (iv) applicable anecdotal records from Anthropological studies of the phenomenon in Africa. To collect the narrative accounts, Nwoye carried out a qualitative (in-class survey) among his graduate students at the University of Jos, in Nigeria (from 1987 to 1996), and at Kenyatta University, Nairobi, Kenya (from 1997 to 2008). The students were asked the following question:

What account/s of dreams, either yours or by others, do you have and can share with us (the lecture group) which have shown you that dreaming in Africa is a significant and living phenomenon, entailing an important way of knowing, that causes changes in people’s behaviour and experience?

What lessons can we learn from these studies? Generally, conducting a transformative study of this nature requires flexibility and a pragmatic philosophy of science. It follows that exploratory, qualitative studies are very useful while the researcher should be able to imagine other sources of data to use. An interesting thing about Nwoye’s (2017) work is the pooling of data from different sources with varied time periods. It is instructive that African scholars interested in contributing to expanding the narrow view of the world projected by Western psychology become more imaginative and innovative in the design of their studies. Furthermore, they ought to be guided more by the quest for accuracy than by so-called rigour (Marsella, 2013).

Nsamenang’s contributions to correcting the narrow perspectives on human development

Until his passing, Augustine Bame Nsamenang was “one of the best psychology researchers in Africa and beyond” and “one of Africa’s most visible scholars in developmental science” (Tchombe, 2018, p. 3). He remains this still even after his passing. His research, theory-building, and efforts in promoting African-grown publication outlets demonstrated his own healing and commitment to confronting epistemic injustice, embracing his epistemic agency, and tackling EV against the African child; while pursuing epistemic authenticity.

First, it is clear that Bame was a committed advocate for African psychological scholarship. This is exemplified in his Africentric perspective that permeated his numerous publications. His commitment to advocating for an African voice in (developmental) psychology through various platforms (conferences and publications) has provided some safe haven for others to comfortably participate in Africentric intellectualism in psychology. Nsamenang has had a significant influence on me as a psychologist that has resulted in deepening my Africentric grounding in psychological research. Indeed, he was keenly aware of the structural, institutional, and editorial hurdles that the African psychologists face in their role as knowers. This awareness enabled him to navigate through wilderness as a lone fighter in the midst of unwelcoming and sometimes ambivalent audiences.

While Nsamenang contributed to international scholarship both conceptually and empirically, he seemed more inclined towards conceptual and theoretical contributions. In an interaction at the Accra workshop for the formation of the Pan-African Psychology Union (PAPU), Nsamenang is reported to have said that he had stopped collecting data and was focusing more on conceptual contributions as that can push the frontiers of knowledge more effectively than the former (J. Osafo, personal communication, 2016). Indeed, Nsamenang’s view is consistent with Yankah’s (2012) apt observation

that the West mocks African research as too data-driven and less conceptual. His *Social Ontogenetic Theory* is one such major theoretical/conceptual contribution. This theory was “grounded in primary local research, enriched by reflection on personal experience, critical reading of contemporary Western psychology and wide-ranging review of African culture, philosophy, history and politics” (Tchombe, 2018, p. 23) His theoretical contributions speak to his keen awareness of his right as a knower. It seems to suggest that African researchers cannot make any headway if they do not hone their skills in writing theoretical contributions. Perhaps this, in itself, is some form of justification that psychological theoretics should be taught in Africa (Oppong, 2019).

Again, Nsamenang was aware that the ideas he propounded were not always pleasing to some audiences; however, he still found a way to make his lone voice heard. This speaks to his confidence and convictions about the accuracy of his ideas. It reveals his profound awareness of negromarchy and meta-colonialism. As Tchombe (2018) indicated, Nsamenang’s research:

... focused on human development in a lifespan perspective, with special attention to Africa’s knowledge system [as well as championing] an indigenous African psychology [while advocating for] a culturally appropriate and contextually sensitive knowledge base. (p. 23)

Perhaps, it is this awareness that made it possible for him to make such phenomenal scientific contributions to developmental psychology. It is equally possible that this same awareness will advance the frontiers of psychological knowledge in this and the next century. In addition, it exemplifies his “fighting spirit”. Indeed, Professor Anton W. Amo, Ghana’s and Africa’s first PhD, who obtained his doctoral degree in 1734 had to fight for his voice to be heard from 1727 to 1747 until he returned home to Ghana (Oppong, 2017b). The same can be said about others such as Daudi Ajani ya Azibo, Wade Nobles, Kobi Kambon, W. E. B. Du Bois, Molefi Kete Asante, and other prominent African American psychologists or social scientists. Indeed, we say the same about Euro-American scholars who rose, or will rise, to prominence (see Schultz & Schultz, 2012). It may well turn out to be a universal truth that innovators always face great resistance and it is their persistence to communicate what most people frown upon that actually make them great after a majority acceptance. There seems to be an unarticulated *mantra* that the African scholar does not have permission to push the frontiers of knowledge too far into the zone of the unknown (see Owusu-Bempah & Howitt, 1995). In his lifetime, Nsamenang fought and won his battles, and left the next generation with weapons to fight the war collectively and their battles individually.

Nsamenang’s additional contribution has been the inspirations that other African psychologists and social scientists have derived from his life’s work, judging from the tributes following his passing (Tchombe, 2018). He has been very inspirational in getting the next generation of psychologists to critically engage with Western psychology.

Looking forward in the post-Nsamenang era: Redirections for the future

It is appropriate to end this paper by enumerating some of the actions which the current psychology educators and next generation of psychologists should focus on. From the forgoing discussion, it seems that if African (developmental) psychologists will succeed in correcting the wrongs done against us and by Africans in the study of human nature, the following issues will be crucial. Current educators of psychology must critically engage with Western psychology literature so as to also promote such attitudes among the next generation of psychologists. This implies that the curricula and the syllabi implemented should be revised to include more critical African texts of relevance. The next generation of psychologists are encouraged, even in the absence of encouragement from their educators, to search for and engage with critical African texts of relevance to their studies. Oppong (2016) has made some recommendations in this respect. Perhaps, Mignolo’s (2009) call for epistemic disobedience and fight for de-colonial freedom that produces independent thought may be relevant here. However, to call for epistemic disobedience in itself is an unintended admission that the West represents a standard from which African praxes are deviations. It is difficult to know what to call it: epistemic disobedience, epistemic independence, epistemic non-compliance, or epistemic deviance? Perhaps, *epistemic authenticity* may be more appropriate. Thus, African (developmental) psychologists are being called upon to pursue epistemic authenticity with the view to ensuring that the conceptions of reality (ontological views) reflect authentic African socio-cultural realities but not an imposed or self-imposed contrived reality borrowed or derived from the West. Interested readers should consult Mignolo (2009) for more information on epistemic disobedience which provides theoretical grounding for epistemic authenticity.

Related to the above is the introduction and growing of African psychology journals that will receive recognition from fellow scholars; this must ensure that the twin objective of faculty promotion and creating intellectual space for African voices are met. In this regard, the Pan-African Psychology Union (PAPU) and the various vibrant associations of psychologists in Africa can help by establishing and sustaining association-based journals while providing a list of accredited journals that feature high-quality African journals that can guide faculty promotion and other administrative decisions at the universities. This will not be any easier task than the well-known challenges of establishing and sustaining association-based journals.

However, both the administrators and the educated African public fail to appreciate that the shorter lifespan of their universities places them at a disadvantage in terms of innovativeness and relevance to the contemporary world. Many African universities are still evolving and it might be useful to focus on contributing to solving national and regional problems; with time, solutions to regional problems could also become global solutions too. In sum, editorial practices of Western journals and use of publication outputs for university ranking serve to

commit epistemic injustice against African scholarship by generating a “globalised consensus” that African scholars are not significantly contributing to world knowledge. This stigma then reinforces the stereotype that the African scholar is without a right as knower.

It appears that the continual denial of the influence of the past on the battered African psyche prevents healing from taking place. Therefore, it is important that African (developmental) psychologists begin and continue to first heal themselves so as to re-emerge in the intellectual space “born again” with renewed confidence to make contextually useful contributions to global scholarship. How indigenous psychology makes contributions to global psychology is moot and sometimes a sensible mechanism through which this can be achieved is not presented (Jahoda, 2016b); though, Hwang (2017) disagrees. Yet, some continue to view indigenous psychology as mainly relating to Africa, Asia, and Middle East as well as presenting psychology in Europe and the US as a yardstick for measuring the others (see Allwood, 2018). And of course, all psychologies (African, Western, Asian, or Arab) are indigenous psychologies (Marsella, 2013). A similar view has been espoused by Sam (2014). In grappling with questions about the status and role of indigenous psychology, Brzezinski (2014) and Grzelak (2014) have advanced the argument that indigenous psychology contributes to global psychology by enriching our understanding of human behaviour from multiple perspectives. Indeed, this is what a developed African psychology gives to the world of psychology, an expanding view of our understanding of human nature.

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Mediated mutual reciprocity in the process of African children's social ontogenesis

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The paper highlights Nsamenang's social ontogenesis theoretical stance in explaining how participatory pedagogies in socialisation impact not only development but children's capacity to assume responsibilities for their own development. A synoptic review is presented of widely discussed challenges faced by African children, under the headings of redefining the African personhood and process of child development, poverty and malnutrition, changes in educational systems and poor access to quality education, child labour versus productive participation in the household economy, conflict and war, the HIV/AIDS pandemic and access to health care. Research evidence from Cameroon suggests that despite the challenges and adversities faced by these children, their ingenuity, resilience and cultural assets play an important role in mediating positive outcomes. Building on and expanding Nsamenang's Africentric perspective on the sustaining power of African indigenous education processes, the paper presents a complementary theory of Mediated Mutual Reciprocity (MMR) that explains how children and learners are the main drivers of the learning process.

Keywords: Mediation, mutuality, reciprocity, resilience, social ontogenesis, children

Introduction

Major Western theories of child development, even those that recognise the active role of the learner (Bandura, 1977; Bruner, 1976; Dewey, 1938; Kolb, 1984; Piaget, 1955; Vygotsky, 1978), fail to emphasise the fact that the child is the main driver of his/her own development and learning. Their narratives of child-centered learning in participative pedagogies are based on constructivist and socio-constructivist frameworks that tend to place the locus of control more on forces that are external, rather than forces that are internal, to the learner (Tchombe, 2011). In African cultures like the Bamiléké in Cameroon, the participative process has traditionally been understood in terms of the principles of "interest-driven (*piifakwen*) activity, oral tradition of storytelling, dialogue, narratives and conversation (*sok nu-sok cwesahnu*) and mediated mutual reciprocity for generative learning (*faksizhi 'si-hi*)." (Tchombe, 2011, p. 212). The interest-driven view draws from "need" which depicts "relevance", and stems from parental beliefs that children must actively be part of all family activities. It highlights the fact that children should be intrinsically motivated to be involved in whatever learning the activities encourage because of the value of the knowledge to be acquired for solving problems (Tchombe, 2019). These constructs are the constituents of a management mechanism that goes beyond mere participatory pedagogies as outlined in constructivist and social constructivist perspectives, because they are viewed from the child's own perspective and not from the perspective of elders or significant others. They postulate that it is the child who takes the lead in the process, and determines and influences the whole process (Tchombe, 2019).

According to this ethnographic appraisal, it was evident that all stake holders (elders, significant others, the child, or learner) learn from each other through a mediated mutual reciprocity process that is bi-directional, multi-directional (input and output flow of information

between the child and elder), and non-hierarchical (no one is superior in the learning process). From this perspective, the locus of control is more internal to the learner so he/she can develop the capacity to face development challenges (Tchombe, 2019). Accordingly, there is need for a new explanatory theoretical perspective that fully grasps the reality of indigenous African pedagogies and learning processes that Nsamenang advocated in most of his writings.

The current paper is informed by a combination of two theories, the social ontogenetic theory of Nsamenang (1992, 2005), and the Mediated Mutual Reciprocity (MMR) theory advanced by the present author (Tchombe, 2011). Nsamenang's Africentric social ontogenetic theory visualises human cyclical ontogenesis in a sequence of:

... phases of systematic socialisation of responsible intelligence in participatory curricula that assign stage-appropriate developmental tasks. In these curricula, knowledge is not separated into discrete disciplines, but all strands of it are interwoven into a common tapestry, which is learned by children at different developmental stages, who participate in the cultural and economic life of the family and society. This line of thought permits the integration of diverse ethnocultural realities and disparate theoretical threads into a common conceptual system - social ontogenesis (Nsamenang, 2005, p. 1).

This account of child development through co-participation in social and cultural life is further elaborated in the theory of MMR (Tchombe, 2011), which is characterised by action that is need-interest-driven, based on learning initiated, driven and sustained by the learner. Learner's personal initiated involvements offer new directions for discussing learning in African settings where most often children, adolescents, and youths are opened to direct challenges requiring their personal

cognitive authority to resolve such problems or challenges. So it can be understood that the theory postulates equal responsibility to all with varying degrees of involvement and the nature of each person's ability to be accountable for their contributions in the learning process. Thus, it highlights the significant active role of learners as co-participants in cultural life through the process of mediated mutual reciprocity.

The continuous existence of African societies depends on the ability of these societies to socialise their children in the art of survival and the sustenance of core cultural values (Nsamenang, 2005). The future of any society is determined by the quality of its children and the level of commitment towards the protection of its most vulnerable members, the young and the old (Boakye-Boaten, 2009). To understand this, there is a need to reflect on the myriad of challenges facing children growing up in Africa given its rich yet complex heritage and culture. Very early in life, African children and youths are encouraged to engage in Africa's growth and transformation process through rigorous socialisation techniques employed for the development of a socially competent person. As observed, most communities in Africa have survived because of their ability to form organic communal bonds, which seek to protect each and every member of the society (Boakye-Boaten, 2009).

This understanding of indigenous conceptualisation of childhood, culture, and adulthood is confronted with current deviations that come as a result of globalisation, mobility, and digital revolution, inherited from eastern and western cultures that pose new challenges as well as opportunities for African children (Nsamenang, 2010). Children are an important part of the community and they should be protected at all times to ensure they succeed in life. Most often this is not predominantly the case in Africa (Wagner, 2015). According to The African Charter on the Rights and Welfare of the Child (2002), children in Africa are affected by many different types of abuse; including economic and sexual exploitation, gender discrimination in education and access to health, and their involvement in armed conflict. Other factors affecting African children include migration, early marriage, differences between urban and rural areas, child-headed households, street children, and poverty.

Goal of this review

This paper considers some of these challenges that African children nowadays are forced to live with, and has the following objectives:

- To highlight some major challenges faced by African children;
- To provide an integrative overview of research evidence from Cameroon on challenge for African children, their strengths, and cultural perspectives to enhance healthy transitions; and
- To articulate Nsamenang's Africentric perspective on the sustaining power of African indigenous education through a new theoretical perspective (MMR) illustrating that children have the ability to effectively direct their actions and overcome challenges.

Challenges faced by African children

Redefining the African personhood and process of child development

One of the greatest challenges faced by African children is redefining the African conception of communal life. The three distinct heritages – indigenous African, Islamic–Arabic, and Western (Pence and Nsamenang, 2008) – that co-exist in many African communities are a product of a historical socio-cultural interactions that Mazrui refers to as Africa's Triple Heritage (1986). Inheriting culture from those three different traditions has given rise to social, linguistic, and educational conflicts which are challenging for African children. Colonisation, globalisation, urbanisation, mobility, and digital revolution are all drivers of change and transformation in Africa. These have not only opened up the African child to the rest of the world, but have equally created new economic, health, education, and social opportunities that are gradually leading to reduction in poverty, management of diseases, improved literacy, and availability of social, communication and recreational facilities (Nsamenang, 2010).

Nonetheless, colonisation, globalisation, urbanisation, mobility, and digital revolution have brought with them various types of challenges including an individualistic perspective of child development that is conflicting with traditional African communal ways of life. Therefore, the challenge for African children is a decline in the sustaining power of African indigenous education, that has led to conflicts, wars, absence of parental attention, peer pressure, overcrowded homes as a result of urbanisation, poor sanitary conditions, lack of access to quality education, high crime wave, and juvenile delinquency (African Development Bank, 2012). How can child development processes in Africa support the generation of adults who can face 21st century challenges? Viewed in an Africentric perspective, the development of self-concept, self-esteem, and self-efficacy in childhood – leading to formation of a strong African adult identity – is supported by Pan-Africanist and humanistic spirit and values, underpinned by the principle that an individual's humanity can only be affirmed when an acknowledgement is made of the humanity of others (Mbiti, 1969). African cultures express respect, compassion, reciprocity, dignity, harmony, and humanity in the interests of building and maintaining community. These values constitute the strength of Africans as a people. African traditional values are deeply rooted in communal philosophies by which one person's pain is the pain of the other, similarly his/her wealth is also that of the other and so the salvation of one person becomes that of the other (Manda, 2008). Instilling these values and spirit very early in child development builds on the child's inner strength to cope with life challenges.

Poverty and malnutrition

According to the United Nations Millennium Development Goals (MDGs) report, extreme poverty has declined significantly over the last two decades showing the proportion of undernourished people in the developing regions to be 12.9% in 2014–2016 (United Nations, 2015). Despite the progress made in ending poverty and hunger, these still remain a major challenge for children in Africa

(UNICEF, 2017). Poverty is closely related with nutritional deprivation, as parents have insufficient financial resources to cater for the food requirements of their children. Sub-Saharan Africa is the only region in the world where the incidence of malnutrition is increasing. Countries experiencing very high rates of stunting are Burundi, Ethiopia, Madagascar, Malawi, and Zambia; where more than 45% of children are affected. Malnutrition is a major risk factor for other health problems (WHO, 2007). Besides its implication for children's health, it places children at risk for impaired cognitive functioning, sometimes leading to learning disabilities (Wagner, 2015).

Furthermore, rapid urbanisation and population growth pose major challenges for quality living for children. Inadequate access to better nutrition, sanitation, and potable water threatens healthy living conditions for growing children, adolescents, and youths. There is increasing poverty as a function of family displacement and socio-economic upheavals (African Development Bank, 2012). The United Nations' Sustainable Development Goals (United Nations, 2015) include:

- SDG 1.5, by 2030, build the resilience of the poor and those in vulnerable situations; and
- SDG, 2.1, by 2030, end hunger and ensure access by all people, in particular, the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

Changes in educational systems and poor access to quality education

The introduction of Western-based educational curricula and formal schooling had a massive impact on the local knowledge that underpins traditional community based management (Ruddle, 2001). No doubt this creates a mismatch in responding to children's specific developmental needs that are context specific because of the differences between cultural indigenous knowledge and that of western knowledge systems. Even with an increase in school enrolment in most African countries, universal primary education is still pending. An estimated 12.6 million primary-school aged children are out of school in conflict affected states in Sub-Saharan Africa, with South Sudan being home to the highest proportion of out-of-school children in the world (51% of primary and lower secondary school aged children: STC, 2016). Additionally, school dropouts are a problem raising the issue of interest-need driven paradigm in educating. The question of relevance seems to be crucial. Despite some perceived growth, quality and equity challenges are manifested in terms of disparities in gender, regional location, minority groups, pastoral and nomadic communities, and the poor (Gupta, 2003).

Child labour or productive participation in household economy

According to the African Charter on the Rights and Welfare of the child, every child shall be protected from all forms of economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's physical, mental, spiritual, moral, or social development. The charter provides specific legislative,

administrative, social, and educational measures to protect the child from all forms of torture, inhuman or degrading treatment, and especially physical or mental injury or abuse, neglect or maltreatment including sexual abuse.

According to the International Labour Organization (ILO), Africa has the highest incidence of child labour, with approximately 41% of all children between 5 and 14 years old involved in economic activity (ILO, 2018). Participation rates of children in the labour force are higher in the countries of Sub-Saharan Africa, where nearly half the children in the 10 to 14 years age group are working. Estimates suggest that in Benin, 27% of children work, in Burkina Faso 51%, and in Burundi 49%. In Kenya, Ethiopia, Niger, and Uganda the estimated rates are between 40 and 46%. In Mali 54% of children are estimated to be working. In Côte d'Ivoire, Nigeria, and Zimbabwe the figures are between 20 and 30%. Among developing regions, Africa has the highest participation rate of girls, with approximately 37% of girls working. In rural Africa as many as 70% of all child labourers are involved in agricultural production (ILO, 2018).

Despite the statistics given above, it should be noted that the conceptualisation of child labour varies from one culture to another. What is construed in Africa as a child's active participation in the well-being of the family might be viewed in western cultures as child labour (Tchombe, 2011). Yet, in Africa, child participation in economic activities of the family is construed as quite different from child labour. In Africa, children's work and participation in the well-being of the family are often considered signs of intelligence. For instance, children who participate in economic activities like selling in shops are seen to develop arithmetical skills more than those who do not (Tchombe, 2011). Hence cultural variations should be taken into consideration in the design of public policy regarding children's work and child protection.

Conflict and war

Africa's historical antecedents, as well as past modes of exploitation and distribution of Africa's natural resources, have engendered many problems. The ownership, exploitation, and distribution of Africa's natural wealth too often has fostered and fuelled civil conflicts and war. This compounds the already dire situation of poor countries and rural populations (Nnadozie et al., 2003). Wars lead to the breakdown of societies because of family displacements, a slowdown in economic activities, and (most serious) children are drafted as soldiers. These conflicts have had a significant impact on health care and consequently on the lives of children (Nnadozie et al., 2003).

With 40% of Africans aged 14 or younger, Africa is officially the fastest growing continent in the world. Sadly, it is also the most conflict-prone region with three out of 10 African children living in fragile, conflict-affected regions or countries, and an estimated 12 million children internally displaced throughout the continent. In South Sudan alone, 750 000 children were internally displaced, 320 000 registered as child refugees, hundreds were killed, and more than 12 000 recruited and used by the government and opposition forces as child soldiers in armed conflict during 2014 (STC, 2016). The disruption

of education through attacks on schools and the use of schools for military purposes require urgent attention to ensure that the outlook changes from a generation at risk to a generation of children empowered to contribute to the peaceful development and rebuilding of communities in the African region.

HIV/AIDS and access to health care

Despite the progress made in health care in Africa, children and youths in the region still face challenges. It is estimated that about 2.1 million yearly deaths of both adults and children in Africa are AIDS related (Bass, 2004; UNAIDS, 2006). This has a profound impact on the livelihood of children and youths. Communities ravaged by the AIDS pandemic, have children who have lost many of their parents and caretakers. Bass (2004) further posits that “AIDS has broken up the family structure, and it is now common to see grandparents caring for children, countless children caring for children, and many orphans caring for orphans” (p. 59). Many of these children have had to play the roles of adults without adequate preparation and support from the family system.

The World Health Organization (2011) is becoming increasingly involved in integrated programming for children and youths’ development. The WHO article, entitled “Mental health and severe food shortage situations: Psychosocial considerations” (Davis, 2000) stressed that it is crucial that nutritional and psychosocial interventions are integrated. The World Bank also promotes integrated early childhood and youth development, health and nutrition programming (Behrman, Alderman, & Hoddinott, 2004). Unfortunately, this is not always the case in developing Sub-Saharan African countries, where narrowly focused sectoral programmes still abound. Indeed, even within the health sector, separate micronutrient and immunization systems continue to exist – often owing more to donor requirements than to national policy (Bass, 2004).

According to Wagner (2015), it seems several African nations are making genuine progress. Specifically:

- Kenya introduced a system of free primary schools for every child, which has helped to bring back over 1 million children into school;
- Mozambique has significantly reduced poverty rates by about 25% and has improved the number of school-going children;
- Uganda has reduced HIV infection rates from 20% to 6% in a span of 10 years. This has reduced the cases of child orphans due to HIV/AIDS; and
- In Tanzania, over 10 000 schools were built and many more teachers recruited so as to enable the country to achieve its MDGs.

These strategies enrich opportunities to strengthen the capacity of children and youths including their families to face the challenges being experienced.

Empirical evidence from Cameroon

The social conditions described above suggest that African children’s capacity to face challenges is built very early through socialisation. At each stage some challenges are prominent such as poverty, ill-health, hunger, lack of access to quality education and health facilities, and dropping

out of school because of absence of financial support. This section will present a synopsis of relevant research conducted by the present author and her colleagues across 15 ethnic groups of the West, North West, South West, and Littoral regions of Cameroon; including communities in both the English-speaking (North West and South West) and French-speaking (Littoral and West) regions. The research adopted a mixed method approach, including both quantitative surveys and qualitative ethnographies. A sequential explanatory process was used characterised by collection and analysis of quantitative data followed by a collection and analysis of qualitative data. Findings from the qualitative data provided support to the results of the quantitative study.

The ethical clearance for the study was approved by the Institutional and Ethical Review Board of the Centre for Research on Child and Family Development and Education (CRCFDE), Limbe, Cameroon. Furthermore, the informed consent of parents, adolescents and children was solicited and the participants freely accepted to take part in the study. The participants were assured of confidentiality and that the information they provided will be used only for research purposes.

A total of 143 participants were recruited through a mix of purposive and convenience sampling (based on the availability of parents with children and adolescents), including 79 parents (female = 41, male = 38), 32 children (female = 17, male = 15) and 32 adolescents (female = 17, male = 15). Focus group discussions were conducted in each of the four regions with groups comprising 8 children or 8 adolescents. The discussions were prompted with open-ended questions in relation to three topics; namely the challenges that children face, their cognitive and social strengths, and the cultural perspectives enabling them to reach a healthy adulthood.

Focus group discussions were carried at the headquarters of the four regions of Cameroon that were chosen for the study. That is Bamenda (North West region), Buea (South West region), Douala (Littoral region) and Bafoussam (West region). The discussions were carried out by the main researcher with the aid of some trained assistants. These assistants were chosen from the various localities and they had to have a sound knowledge of the local language, English and French, which were the languages used for the focus group discussions. The informed consent of children and adolescents were solicited before the discussions. An audio recorder was used to collect the responses. Nonetheless, notes were equally taken through a paper-pen technique. After the discussions were conducted, time was taken to transcribe all the responses that were given by each participant. An Intelligent verbatim transcription method was adopted for the transcription process, whereby the views of participants were represented in all originality but irrelevant fillers and grammar checks were corrected for easy readability.

The content of the focus group discussions was analysed qualitatively. The analysis of focus group discussions was done using a systematic process of thematic content analysis. A questionnaire was administered to parents, comprising closed-ended questions in relation to the same three topics. Parental

responses were recorded quantitatively and analysed descriptively using percentages.

Informed consent of parents were solicited before the questionnaire was administered. The questionnaire was self-administered by the researcher with the help of trained assistants. This method was chosen because certain items written in English and French ought to be explained to some parents who were not fluent in English and French. EpiData versions 3.1 and SPSS version 21.0 were used for analysis of quantitative data.

Responses by the participating parents indicated that 90% considered poverty to be one of the highest challenges faced by children, followed by a high rate of illiteracy (86%), family conflicts (80%), malnutrition (75%), disease affliction (67%), natural hazards/disasters (62%), negative cultural beliefs (59%), and loss of parent/parents (53%). Only a minority of parents (28%) considered community conflicts and insecurity/wars to be a major challenge faced by children.

Thematic analysis (Ellen & Renner, 2003) of the responses of children and adolescents in the focus group discussions revealed that challenges they faced were in the domains of poverty and the absence of finance, malnutrition, lack of resources, conflicts, health challenges, poor sanitation, absence of parental attention, peer pressure, overcrowded homes, and too much societal expectations.

Strengths possessed by children according to parental questionnaire responses included multi-tasking (94%), resilience (90%), social competence with peers (89%), problem-solving (87%), pro-social behaviours (82%), respect (78%), social interconnectedness (76%), and creativity (71%). Further analysis of the responses by parents and children examined their ranking of cultural factors enabling children to reach healthy adulthood. The most important factor was family followed by values, common initiative groups, churches, non-governmental organisations, peer groups, beliefs, knowledge systems, social welfare services, mass media, and rites of passage.

The findings of this study show that, although African children face enormous challenges, they possess cognitive, social, and personality strengths as well as social support services, such that if well exploited they will reach effective adulthood. The children's reported strengths highlight the significance of collaboration and values. The family for any African child is very important. No adult African moves completely away from family. In order to actualise the full potential of African children, a theory is needed that emphasises the role of the child as a major instrument in learning and development. The findings indicate that socialisation has a great influence on children's ability to succeed. As such, restrictive pedagogical practices in classrooms encroach on the learning space needed by children, thus hindering their capacity to direct their learning. This has been well articulated by Nsamenang in his theoretical discourse on the African indigenous education process as considered in the paragraphs below.

The sustaining power of African indigenous education processes emphasised in Nsamenang's Africentric perspective

African participative pedagogies through the engagement of children in daily chores, within a context of enhancing an interactive process, have been and still are powerful in enabling children to learn to construct and develop their competencies, skills, knowledge, and attitudes. This pedagogic approach to learning does not depend largely on competent others but on learners themselves. According to Nsamenang (2007), developmental learning within a participatory model in an eco-cultural context is reflected in a recognition by African indigenous cultures of different phases of children's emerging minds. Accordingly the indigenous participatory curricula focus on sequences of perceived cognitive capacities (Nsamenang, 2003).

The way children learn in African communities is rarely through instruction but rather through engagements that enable them to initiate, create, and discover during participation. The emphasis on children's own capacity to progressively direct their learning depicts cognitive development as the unfolding of their abilities to generate the knowledge and skills with which to engage responsibly and increasingly with their complex environment (Tchombe, 2011). Once a child has acquired these self-learning strategies, it becomes questionable why theorists place so much emphasis on the need for competent or more knowledgeable others to accompany the child through the process of realising his or her potential capacity. Nsamenang (2006) referred to responsible intelligence exhibited in peer group activities. In particular, he referred to the extensive child-to-child sociability in the different activity sectors and spheres and in the real family duties where their imitation, creativity, and endurance come to sustain their engagements (Nsamenang, 2006). The African child, being associated very early with family activities at home and its environs, develops social learning and cognitive values and abilities inherent in these activities. Thus, Nsamenang (2012) reminded us that peer group relationships and peer cultures during adolescence can influence development in complex ways because they provide peer controlled learning spaces, particularly as peers can be and are agents of their own socialisation and education. For example, he noted the prevalence of multi-aged group peer settings that foster intergenerational transfer of knowledge and skills. These settings afford younger children opportunities to cope with and solve the problems they face in their various environments through a process of social cognitive development. The African worldview conceives of the adolescent as growing out of childhood and poised for adulthood that lies in the future (Nsamenang, 2002). Engaging in various works of art and other social cognitive activities enables them to overcome their harsh realities (Nsamenang, 2008, 2012). Thus the majority of African children and youth are not defeated by their difficult circumstances but instead navigate their challenges successfully into productive pathways, surprisingly often outside the official agendas of education. Nsamenang (2012) postulated that more research is needed about how these African youth successfully produce competent African self-identities.

One of Nsamenang's views that resonate with my held position is that the foundational precept of Africa-centric developmental ethos is not *educare* or *educere* but emergence, whereby in African family traditions a child is not actually 'raised' but primed to 'emerge' into maturity largely through his/her own developmental learning in self-generated efforts. Accordingly, indigenous African parenting values and practices foster children's self-education in participative learning processes in their families and communities, especially in the peer cultures of early childhood. The concept of educating for emergence emphasised in current theories of emerging adulthood (see for example Jensen-Arnett 2000) has been a long-standing strategy embedded in the Africentric educative process; enabling children's independence and autonomy to assume responsibility for their own learning for which they are accountable to self and others in their actions.

Most analyses of Africa's undesirable condition tend to position the African source of the continent's heritage as inimical to development and progress and Western legacies as unproblematic, emancipatory solutions to the continent's multiple challenges (Nsamenang, 2010). The non-fit of some Western models is often not considered (Nsamenang, 2013). Should Africa "stand against" the maxims and spirit of "the current of received wisdom" or continue uncritically to receive "those things that are given to" its "present experience as if they were timeless, natural, and unquestionable" (Rose, 1999, 20)? Despite the fact that Africa has benefited from its triple cultural heritage, there is need to recognise that while standards and practices that emanate from abroad are not always bad, they are potentially dangerous. The theoretical perspective of MMR presented below seeks to redefine African socialisation as an approach that strengthens African children's achievement of healthy adulthood.

A new explanatory theoretical perspective focusing on the child as the main driver in the learning process: Mediated Mutual Reciprocity.

The analysis presented above has indicated that African children face challenges like poverty, access to education and learning, health, war and conflict, negative cultural beliefs and others that can hinder them from achieving a healthy adulthood. Nonetheless they possess cognitive and social strengths as well as an enabling environment that can help them overcome these challenges. The fundamental question remains how Africans harness the strengths of children to help them overcome challenges. For children to be able to overcome the challenges there is need for an internal locus of control, through interest and need-driven action by which the children themselves are the key and pivotal players in their own development.

Therefore, there is a need for a new theoretical perspective because previous theories do not seem to fully grasp the reality of indigenous African pedagogies and learning processes. Within a changing African society, children face socio-cognitive challenges as they grapple with decision making in the management of each day's events. The socio-cognitive process is illustrative of mind theory in how peoples express their thoughts and feelings about self, others and events based on their perceptions

(Tchombe, 2019). As such, in order to achieve a healthy adulthood children and adolescents themselves must be and have always played an important, active role in the developmental process. Nsamenang reiterated in many of his writings that African socialisation patterns allow children an extended learning space where they initiate, innovate, analyse, create, solve problems, and transfer knowledge by themselves. Resonating with and expanding that underlying philosophy Tchombe (2011) advanced the theory of MMR.

MMR views learning from the perspective of the developing child. Unlike other theoretical perspectives that present the adult as the one who shapes the development of the child, MMR rather views the child as the one who initiates his/her own development and then actively stimulates the adult in mutual mediation and reciprocity. What this signals is that, although there is equal involvement, the principal input is determined by the learner in the learning process through the construction of new knowledge. Through participation in activities that are interest and need-driven with rich interactions and hands-on manipulations, the child receives stimuli from the environment. These stimuli emanate from the physical, social, cultural, and spiritual environment in which the child belongs. Through internal self-regulation, the child processes this information and then initiates his/her own development via cognitive, affective, or psychomotor outputs that are sent to the significant adult. This account represents the role of the learner/child as the main driver of the learning process, rather than significant or competent others. In this process, mediation, mutuality, and reciprocity (MMR) actions are correlated factors that permit the child and adult to actively construct new knowledge and learn from each other (Tchombe, 2011). The following learning processes and principles can be highlighted.

The learning processes include:

- Mediation: The child and adult are both co-constructors of knowledge (making meaning);
- Mutuality: Active interdependence and collaboration between the child and the adult; and
- Reciprocity: A learning stimulus initiates a shared responsive connection between the child and the adult. The actual transformation of the new knowledge into ideas for further use is the responsibility of the child as learner, thus ensuring sustainability in learning for effective knowledge transfer (Tchombe, 2011).

The learning principles include:

- Need-interest-driven: Intrinsic motivation promotes internal locus of control to the learner during the learning process;
- Co-learning: The learner and significant other engage in a give-and-take process, thus affecting and influencing each other's behaviour;
- Non-hierarchical learning: The learner and significant other equally give and receive, with no one being the superior;

- Bi-directional learning: All the actors influence each other's behaviours in significant bi-directional ways as they recognise, negotiate, and exchange ideas; and
- Multi-directional learning: Influences between the learner, significant other, and cultural amplifiers (Tchombe, 2011).

The holistic theoretical framework of MMR is action-oriented engagement that leads to the use of differential competencies and techniques valuable for inclusion, leading to equal participation; and thus quality learning and development of many skills and abilities (Tchombe, 2011). Therefore in using the MMR the following behaviours develop:

- Sharing of behaviour being based on the mutual need for collaboration and cooperation in a learning task;
- Intensifying learner's transforming role in the redirection process;
- Directing change in behaviour through a multi-directional interactive process such as questioning, bringing new ideas, and orienting positive change as added value;
- Negotiating behaviours (both learners and competent others) by prompting and elaborating what has been said or probing for more information;
- Giving each learner the opportunity to act and react for cognitive enrichment whereby opportunities allow for the interplay of multiple intelligence and different learning styles arise;
- Employing initial mediation but encouraging a second form of mediation through mutual reciprocity;
- Identifying and managing feelings of others;
- Even as an apprentice the child can orient, reorient, and direct practical activities by questioning, negotiating, and making suggestions, leading to change and new ways for training;
- Monitoring a task in order to adjust one's behaviour appropriately; and
- Allowing for independent, interdependent, and autonomous engagements with self-confidence.

This theory is generative as it explains how learners can initiate, negotiate, and modulate learning to suit their own rhythm, capacity, styles, and modifying the learning behaviours of others (Tchombe, 2011).

MMR explains how engaged the child is in his or her development, whereby learning at the zone of proximal development (Tchombe, 2019) can be considered more as the responsibility of the learner. The MMR theory argues that the contributions of parents, teachers, siblings, or peers is limited in scope; as the internal process in the mechanics of mediated mutual reciprocity can only be ascertained by the learner/child for effective learning to take place. The child is the focal point in the acquisition or development of any new knowledge that is constructed because it is the child, not the adult, which initiates development. They face challenges because a developmental pattern is superimposed on them as if they are passive participants in sustainable development. MMR gives both the children and adults opportunity to reciprocate and mutually mediate knowledge in the process, because knowing and learning are facilitated more as children gain mastery of the cultural context (Tchombe, 2011).

Therefore, MMR can be used as a new theoretical perspective to enable children to overcome challenges. No one better than the children themselves engages in critical thinking and problem-solving that will lead them to overcome their own problems. The development of resilient skills to overcome challenges and the use of the various opportunities and enabling cultural environment to reach healthy adulthood can only be achieved if children and elders engage in mediated mutual reciprocity behaviours that are bi-directional and non-hierarchical.

Conclusion

Despite the challenges and adversities faced by children in Sub-Saharan Africa, the presence of protective factors within children, their families, and communities can play an important role in mediating potentially harmful outcomes. They have capacities to meet their needs and overcome adversity. These internal capacities are strengthened by functioning families, cultural values and influences, and the existence of supportive persons and structures in the community. The paper concludes by recommending the following:

- Improve psychosocial support at the individual, family, and community levels so that children in difficult situations can be supported;
- Promote healthy development through nurturing appropriate competences, skills, and values employing the participatory approach advocated in this paper based on the need and interest-driven philosophy; and
- Direct childhood problems using the preserved key indigenous cognitive enrichment strategies.
- Finally, put in place assessment tools that can be used to inform on the child's degree of strengths to face life's challenges in cultural context. Where such assessment produces negative results, programmes for the orientation of parents, children, and community can be put in place to provide the necessary education that must be based on the realities of the context generating the challenges.

This cannot be left to chance as there is a great need to focus on decreasing children's exposure to adversity by increasing their internal resources and mobilising protective processes in the social systems that surround them.

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Inter- and intra-cultural variation in learning-through-participation among Hadza and BaYaka forager children and adolescents from Tanzania and the Republic of Congo

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We examined cross-cultural variation in children's learning-through-participation in economic work in two forager societies; the Hadza of Tanzania and the BaYaka of the Republic of Congo. We used observational data from 46 Hadza (41% female) and 65 BaYaka (48% female) children and adolescents between the ages of 3 and 18; interview data from 73 Hadza (49% female) and 52 BaYaka (56% female) adults; and ethnographic observations from both populations. Results showed that by providing tools, assigning chores, and foraging with children, Hadza and BaYaka adults provided opportunities for autonomous learning through facilitating participation. Furthermore, although both Hadza and BaYaka children foraged alongside adults when they could be of help, Hadza children were more likely than BaYaka children to forage independently, and BaYaka children were more likely than Hadza children to participate in domestic tasks. We argue that these strategies provided children with opportunities to learn while contributing economically.

Nous avons examiné les variations interculturelles dans l'apprentissage des enfants dans le contexte de leur participation à des travaux économiques dans deux sociétés de chasseurs-cueilleurs; les Hadza de Tanzanie et les BaYaka du Congo. Nous avons utilisé les données d'observation de 46 enfants et adolescents Hadza (41% femmes) et 65 BaYaka (48% femmes) âgés de 3 à 18 ans, celles d'interviews de 73 adultes Hadza (49% femmes) et de 52 adultes BaYaka (56% femmes), ainsi que des observations ethnographiques sur ces deux groupes. Les résultats montrent qu'en leur fournissant des outils, en leur assignant des tâches et en chassant et en cueillant avec les enfants, les adultes Hadza et BaYaka leur offrent des possibilités d'apprentissage autonome tout en facilitant leur participation. En outre, alors que les enfants Hadza et BaYaka chassent et cueillent aux côtés des adultes quand ils peuvent, les enfants Hadza sont plus susceptibles que les enfants BaYaka de recourir à la chasse et à la cueillette. Ces derniers sont aussi plus susceptibles que les enfants Hadza de participer aux tâches domestiques. Nous en concluons que ces stratégies fournissent aux enfants des opportunités d'apprentissage tout en contribuant, parallèlement, aux ressources économiques de leur groupe.

Keywords: learning-through-participation, hunter-gatherers, child development, cross-cultural psychology

Introduction

Child development is influenced by a variety of factors including physical and social settings, customs of childcare, ethnotheories regarding appropriate child and parent behaviour, and peer cultures (Nsamenang & Lamb, 1995; Super & Harkness, 1986). For example, in Western societies, adults primarily organise children's learning didactically, with school teachers and parents striving to facilitate knowledge acquisition through explicit instruction and pedagogical conversations (Morelli, Rogoff, & Angelillo, 2003). On the other hand, in small-scale subsistence societies, children's learning is woven into the fabric of everyday practice and experience; by meaningfully participating in economic activities in collaboration with adults and other children, children also develop moral, social, and intellectual competencies (Paradise & Rogoff, 2009; Serpell, 2011).

Bame Nsamenang frequently bemoaned the ways in which contemporary psychology retained a Eurocentric bias, highlighting the persistent colonial nature of the field (Nsamenang, 2007). For example, in his work with the Nso of Northwest Cameroon, Nsamenang challenged the assumption that child development was unaffected

by the social and cultural setting in which it occurred (Nsamenang, 1995; Nsamenang & Lamb, 1993, 1995). He demonstrated that socialisation practices varied *within* cultures alongside gender, generation, religion, and education. He also argued that socialisation was achieved through anticipatory socialisation, guided participation, peer culture, and parental expectations. In doing so, he prioritised indigenous African cultural traditions while acknowledging the role of Arabic/Islamic influences and Western cultural legacies on contemporary Africa's educational landscape.

In honour of Nsamenang's commitment to research on indigenous African socialisation, this paper aimed to explore inter- and intra-cultural variation in children's learning-through-participation (Rogoff, Paradise, Arauz, Correa-Chávez, & Angelillo, 2003) within two African hunter-gatherer societies; the Hadza of Tanzania and the BaYaka of the Republic of Congo. Unlike agricultural societies like the Nso studied by Nsamenang, hunter-gatherers (or foragers) are mobile populations that primarily rely on non-domesticated resources; are fiercely egalitarian in the sense that there is no inherited hierarchy according to age, and little differentiation of status

according to sex (Woodburn, 1982); value autonomy in the sense that individuals rarely direct each other or impose their will on one another (Gardner, 1991); share food widely (Kitanishi, 1998); rarely store food; and have few material belongings (Kelly, 1995). Despite these cultural similarities, BaYaka and Hadza children's contributions to subsistence are variable, ranging from rare to substantial (Crittenden, Conklin-Brittain, Zes, Schoeninger, & Marlowe, 2013; Hagino & Yamauchi, 2016). This variation is likely due to ecological constraints (for example, access to easily acquirable food, risk of getting lost) and ethnotheories about children's capabilities, roles, and responsibilities.

Goal of the study

Here, using qualitative and quantitative observational and interview data, we sought to investigate how cultural and ecological variation contributed to differences in Hadza and BaYaka children's participation in economic work, and how forager adults facilitated this participation.

Ethnographic contexts

The Hadza are arid savannah-woodland foragers from Northern Tanzania (Blurton Jones, 2016; Marlowe, 2010). Approximately 150 of the 1 000 Hadza hunt and gather as their primary means of subsistence. These foraging Hadza maintain a strict division of labour; Hadza men primarily collect honey and bow-hunt small and large game. Women gather berries, baobab, and tubers (Blurton Jones, 2016; Marlowe, 2010). As a result of climate change and encroachment on their lands by pastoralists (Mabulla, 2012), the Hadza are increasingly reliant on maize and other domesticates gifted by missionaries and ethno-tour companies or acquired by trade with neighbouring pastoralists (Yatsuka, 2015). In the past, Hadza camps were highly nomadic and moved every two to three months (Marlowe, 2010); presently, most camps are semi-permanent.

The BaYaka surveyed as part of this study are most closely related to the Mbendjele BaYaka (Lewis, 2002). They live in the tropical rainforest of the Congo Basin. Men primarily collect honey and hunt with spears, crossbows, traps, and nets. Men also hunt with guns provided by their farming neighbours, with whom they maintain extensive trade relationships (Joiris, 2003). Women focus on collecting wild yams, nuts, mushrooms, *koko* (*Gnetum spp*) and other greens. Both men and women tend low-maintenance forest gardens, collect liana fruit and caterpillars, and fish (Kitanishi, 1995). In contrast to the Hadza, BaYaka men and women's foraging activities often overlap, with men sometimes gathering, and women sometimes participating in hunting activities (Hewlett, 1991). The BaYaka surveyed here live in a village setting for approximately six months of the year, though overnight fishing, hunting, and gardening trips often occur during this time. Approximately two months of the year are spent at caterpillar camps, and another three to four months at long-term fishing camps. Data collection for this paper straddled honey and berry collecting seasons among the Hadza (Marlowe & Berbesque, 2009), and fishing and caterpillar seasons among the BaYaka (Kitanishi, 1995).

Data were considered comparable because children in both societies are relatively productive during these seasons and often work alongside adults.

Methods

Consent procedure

All consent procedures and research protocols were approved by the University of Cambridge Department of Psychology Research Ethics Committee (PRE.2016.026; PRE.2018.023). In-country permission was received from the Tanzanian Commission for Science and Technology (COSTECH) and for the Republic of Congo from the Centre de Recherche et D'Etudes en Sciences Sociales et Humaines (CRESSH) and the Institute de Recherche en Sciences Exactes et Naturelles (IRSEN). Before data collection began, a community meeting was held in each camp in which the researcher intended to work. During this meeting, and with the help of an interpreter, the researcher explained the study aims, the data collection procedure, and the gifts to be given to participants at the end of the stay. Participants were also told that they could withdraw from the study at any time. Camp members were given the opportunity to ask questions about the research before deciding by consensus whether research could be conducted in the camp. No camps refused participation. This process was repeated with all individual participants, to ensure their free, prior and informed consent. Oral adult consent and child assent was obtained from all participants. Following the research stay, gifts were given to all camp members, irrespective of whether or not they had participated in the study.

Demographic information

Among the BaYaka, quantitative data were collected in August through September 2016, 2017, and 2018 in 7 camps ranging in size from 8 to 51 inhabitants (mean=31, SD=17.98). Among the Hadza, quantitative data were collected in March and April 2017 in 3 camps of 41 to 73 inhabitants (mean= 53.67, SD=17.01). Upon arrival in a camp, a census was conducted to learn the names of all permanent residents and their kinship relationships, marital status, number of children, and age. In order to estimate the age of children, we asked adults to rank their own children, or a set of cousins, from oldest to youngest. Age was estimated based on this rank, as well as developmental cues and dentition.

Behavioural observations

Forty-six Hadza (mean age = 9.98; 41% female) and 65 BaYaka children (14 children sampled >1 year, mean age in first year observed = 10.58; 48% female) between the ages of three and 18 were observed using a focal follow procedure. Focal children and adolescents – which we will collectively refer to as children – were assigned two 2-hour sampling blocks; one in the morning (usually between 8 and 11am) and one in the afternoon (usually between 12 and 3pm). In 2016, these sampling blocks were scheduled over two randomly assigned days; in 2017 and 2018, these were scheduled on the same day. Focal follows were terminated if we perceived that the child was growing uncomfortable or anxious due to our presence.

If a child was not available during the assigned sampling block, the block was rescheduled or omitted based on circumstance. Each child was observed, on average, for 256.7 minutes (SD = 123.52), totalling 28 494 1-minute long observations.

Using a 30-second observe, 30-second record procedure, we first recorded whether the focal child was working, and then described the type of work they were engaged in. Following Munroe and colleagues (1984), we defined work as: “all instrumental activities judged to contribute to the maintenance of the household or the well-being of its members” (p. 369). Following data collection, we then grouped work activities into five categories using the descriptions in our notes. These categories were determined based on our perception of task difficulty, both in terms of finding resources, and the strength and knowledge needed to successfully collect them (Lew-Levy & Boyette, 2018). These were:

- *Gathering* – for the Hadza, of berries, baobab, and greens, and for the BaYaka, of fruit, caterpillars, grub, garden products, fish, tree gum, and greens.
- *Hunting and trapping* – for the Hadza, with bows and arrows or by hand, and for the BaYaka, with spears, snares, guns, and sling shots.
- *Honey collecting*
- *Collecting wild tubers*
- *Household chores* – including fetching water, firewood, participating in household construction, doing dishes, laundry, sweeping, manufacturing tools and containers, and cooking.

We also recorded whether children were interacting with adults, and whether adults were in proximity of the children. Proximity was defined as within speaking and/or sight distance of the focal child, and thus close enough to monitor their behaviour and intervene when necessary. Finally, in a subset of observations, we recorded any chores assigned to the focal child during the 30-second-observation window (Lew-Levy et al., in press).

Inter-coder reliability was assessed among the BaYaka only in 2017. SLL and AHB simultaneously followed 7 village-dwelling children for a total of 711 observations (female = 4; early childhood = 1, middle childhood = 2, adolescence = 4). Reliability was high across all codes; participation in work (yes/no), Kappa = 0.93, $Z = 24.9$; working alongside adults, Kappa = 0.93, $Z = 24.9$, and chore assignment (yes/no), Kappa = 0.89, $Z = 23.8$. We did not assess the reliability of adult proximity ratings.

Adult interviews

Interviews were conducted in four of seven BaYaka camps and all three Hadza camps. Interviews were conducted with all individuals determined to be adults – individuals of marriageable age (approximately > 18 years of age), though not necessarily married or with children. The following questions were asked every evening in each camp for 7 to 13 days in a row:

- “What did you do today?”
- If the participant said that they had foraged, we asked “Who did you forage with?”
 - If the participant did not name a child, we asked “Why didn’t you take a child foraging with you?”

- If the participant did name a child, we asked “Why did you take this child foraging with you?”

In Congo, these interviews were primarily conducted in BaYaka, the first language of the participants; in Tanzania, they were primarily conducted in Swahili, the second language of the participants. In cases where individuals who had foraged together were also together during the interviews, we asked one of these individuals, and then asked the other individual if they had anything to add. We included these responses as having been given by both individuals. In cases where individuals who had foraged together were not together during the interviews, we asked each participant separately. If an individual was not in camp during the interview period, we followed up in the morning or evening of the following day. When participants visited other locations overnight (for foraging trips, visits with kin in other camps, or village visits), we asked them about their whereabouts upon their return. If we could not confirm the location of a participant, the interview was omitted.

For the Hadza, this yielded a total of 469 interviews of 73 Hadza adults (female = 49%), with a mean of 6.42 responses per individual (SD = 1.18). For the BaYaka, this yielded a total of 475 interviews of 52 BaYaka adults (female = 56%). Six BaYaka adults were sampled twice or more, as they inhabited more than one sampled camp during the 2016 and 2017 field seasons. This yielded a mean of 9.13 responses per BaYaka individual (SD = 6.23).

Participation observation

Participant observation was conducted over 12 months between 2016 and 2018 by SLL among the BaYaka; and over 20 months between 2004 and 2016 by ANC among the Hadza, with an additional two months conducted in 2017 by SLL. We participated in culturally salient activities including foraging, cooking, childcare, dancing, singing, and ceremonies. Additionally, we conducted informal interviews on learning and life history with children and adults. Because the ethnographic work occurred over several years, we were able to qualitatively examine how children’s participation in adult activities changed with age.

Analysis

We tested for differences in overall time allocation to work, proximity to adults during work, and interaction with adults during work using Mann-Whitney U tests. In order to examine cross-cultural variation in these activities, the first set of analyses were conducted on the sample as a whole, with ethnicity as the grouping variable. In order to investigate intra-cultural sex differences in activities, the second set of analyses were conducted on the Hadza and BaYaka samples separately, with sex as a grouping variable. Since age was not a predictor variable in these analyses, counts of time allocation to work, proximity to adults during work, and interaction with adults during work were summed across years for children with repeated observations. To examine cross-cultural variation in why adults did or did not forage with children, we created response categories based on the interviews. These were the dependent variables in a series of multilevel logistic

Table 1. Percent of observations and Mann-Whitney U tests results examining inter-ethnic and intra-ethnic sex differences in work participation an adult proximity and interaction during work.

	Hadza			BaYaka			Total		
	Female	Male	Z	Female	Male	Z	Hadza	BaYaka	Z
<i>% total observations</i>									
Gather	9.19	3.90	1.97*	6.69	3.48	1.06	6.20	4.94	-0.26
Honey	0.28	7.03	-3.10**	0.07	1.43	-0.98	4.10	0.81	4.73***
Household	6.81	3.86	-0.57	17.42	7.00	4.22***	5.14	11.73	-3.87***
Tubers	4.81	2.11	2.85**	7.54	3.45	1.61	3.28	5.31	-1.31
Hunt/Trap	0.09	5.58	-2.44*	0.05	2.01	-1.38	3.20	1.12	1.86
Total work	21.19	22.48	-0.11	31.78	17.37	3.74***	21.92	23.91	-0.45
<i>% work</i>									
Proximity to adults	47.91	29.04	1.90	67.03	52.12	0.41	36.95	61.12	-2.20*
Interaction with adults	25.88	14.56	1.76	33.90	21.59	1.11	19.31	29.02	-1.98*

Note. Percentages represent population proportions. Wilcoxon rank-sum tests were conducted on participation proportions; for work activities, the denominator was total observations; for proximity and interaction with adults, the denominator was total observations spent in work. Positive z-scores indicate that children in the first column (female/Hadza) participate in said activity more than children in the second column (male/BaYaka); negative values indicate the opposite. *p.* values: * ≤ 0.05 ; ** ≤ 0.01 ; *** ≤ 0.001 .

regressions, which included the main effects of sex, ethnicity, and their interaction. Because these interviews were made up of repeated responses, and because different camps were sampled, we included interviewee and camp as random effects.

Results

The population proportions for work activities, adult availability, and interaction with adults by ethnicity and sex is presented in Table 1. While Hadza boys and girls participated in work at similar rates ($U = 251.5$, $p = 0.92$), BaYaka girls participated in work significantly more than BaYaka boys ($U = 811.5$, $p < 0.001$). However, there were stronger sex differences in work types among the Hadza than the BaYaka, consistent with a more rigid sexual division of labour among the former (Froehle et al., 2019; Lew-Levy, Boyette, Crittenden, Hewlett, & Lamb,

in press). Finally, Hadza children were less likely to be in proximity of adults ($U = 1\,061$, $p = 0.03$) or interact with adults ($U = 1\,094.5$, $p = 0.048$) during work when compared to BaYaka children.

Hadza adults reported foraging on 54.3% of interview days, representing a total of 160 foraging trips. Of the Hadza foraging trips, 32.5% included children included an average of 1.8 children (max = 7, SD = 1.5). BaYaka adults reported foraging on 62.6% of interview days, representing a total of 212 foraging trips. The 37.7% of BaYaka foraging trips which included children also included an average of 1.8 children (max = 7, SD = 1.3). Women in both societies were more likely to report foraging with children than men (Hadza: 48.0% vs. 28.4%; and BaYaka: 43.3% vs. 33.1%). The kinship relationships between adults and children who foraged together can be found in Table 2. Table 3 outlines the percent of foraging days adults spent in different foraging activities and shows that Hadza adults were most likely to report foraging with children when targeting honey (50% of honey collecting trips, usually from stingless bees), while BaYaka adults were most likely to report foraging with children when gathering (62.5% of gathering trips).

Why do, or don't, adults forage with children?

Results for the logistic regressions investigating reasons for foraging/not foraging with children can be found in the Appendix. Adults cited a multitude of reasons for not foraging with children. The main reasons involved

Table 2. Percent of foraging groups that contained at least one related adult-child/adolescent dyad

	Hadza	BaYaka
Parent-offspring	34.62	46.25
Sibling	13.46	12.50
Aunt/uncle-niece/nephew	15.38	16.25
Grandparent/grandchild	15.38	17.50
Other/no kin dyads	36.54	23.75

Note: Values add up to >100% because groups contained more than one type of adult-child/adolescent dyad

Table 3. Percent of foraging reports that included various foraging activities

Activity	Hadza				BaYaka			
	Total foraging days	Female foraging days	Male foraging days	With children/adolescents	Total foraging days	Female foraging days	Male foraging days	With children/adolescents
Honey	46.72	15.60	69.33	50.00	6.92	2.92	12.71	2.78
Hunt/Trap	13.13	3.67	20.00	16.67	24.22	6.43	50.00	15.28
Gather	32.43	50.46	19.33	29.76	56.06	61.99	47.46	62.50
Tubers	18.53	40.37	2.67	20.24	25.26	37.43	7.63	26.39

Note. Values represent population proportions. Note that these are self-reports regarding the resources targeting during foraging trips; individuals foraging in groups sometimes reported resources that were collected by the group, not necessary by the individuals themselves (e.g. Hadza women rarely collected honey, but sometimes accompanied their husbands during honey collection trips). Values add up to >100% because some individuals reported participating in more than one activity per trip.

distance, danger, autonomy, and disturbance. Concerns regarding distance included that the foraging patch was too far, children were not able to walk well, or that children were too slow. Men were 2.94 times more likely than women to cite distance as a reason not to forage with children, 95% CI [0.20, 1.95], $p = 0.02$. Concerns regarding dangers included weather (for example, rain and high or low temperatures), presence of elephants, lack of food, having to walk through deep waters, or risks involving climbing on rocks. Sex, ethnicity, and their interaction were not significant predictors for citing danger as a reason not to forage with children. Additionally, adults cited autonomy as a reason for not to take children; children were already occupied, either in play or work, or in a subset of cases (9%) adults themselves did not want to forage with children. The BaYaka were 7.91 times more likely than the Hadza, 95% CI [0.90, 3.24], $p < 0.001$, and women 3.33 times more likely than men, 95% CI [-2.02, -0.39], $p = 0.004$, to cite autonomy as a reason not to forage with children. However, the interaction between sex and ethnicity was also significant, 95%CI [0.09, 2.22], $p = 0.03$, indicating that the effect of sex on citing autonomy as a reason to forage with children was true for the Hadza only. Disturbances such as fussing for food or the possibility of scaring off animals with noise or motion were cited by the Hadza only. Sex was not a significant predictor for citing disturbance among the Hadza.

Furthermore, adults cited several reasons for why they foraged with children. These were grouped into company, autonomy, imparting knowledge, and help. Both the Hadza and BaYaka stated that they took children for company; either because adults themselves had no one to forage with, because there was no one in camp to watch the children, or because adults enjoyed foraging with children. Sex, ethnicity, and the interaction between sex and ethnicity were not significant predictors for citing company as a reason to forage with children. Adults also reported that they foraged with children because children followed them independently. The Hadza were 12.92 times more likely than the BaYaka to state that children autonomously joined adult foraging groups, 95% CI [-4.64, -0.48], $p = 0.02$. Because of low cell counts, we could not investigate the effect of the interaction between sex and ethnicity on citing autonomy as a reason to forage with children. Imparting knowledge (in BaYaka; *bosesi mayele*, literally, to show

knowledge, in Swahili; *kufundisha*, literally, to teach) was also cited as a reason to forage with children. This included imparting knowledge about foraging, medicinal plants, and changing the behaviour of children who were misbehaving when left in camp. Sex, ethnicity, and their interactions were not significant predictors for citing imparting knowledge as a reason to forage with children. Additionally, adults cited taking children to forage in order for children to help with work. For the Hadza, this included carrying baobab, collecting firewood, starting fires, making pegs for honey harvesting, or providing childcare. For the BaYaka, this included finding tubers, taking care of infants, and leading the way to a resource that a child had previously located. Men were 3.11 times more likely than women to cite help as a reason to forage with children, 95% CI [0.18, 2.09], $p = 0.02$. The interaction between sex and ethnicity was also significant, indicating that Hadza men were more likely than BaYaka men to mention foraging with children for help, 95% CI [-4.17, -1.14], $p < 0.001$.

How did adults facilitate children's work?

Drawing from our ethnographic observations, we now outline three ways in which Hadza and BaYaka adults facilitated children's participation in work: providing tools, assigning chores, and composing foraging groups.

Providing tools

When BaYaka and Hadza infants can independently hold themselves up, mothers take children on foraging expeditions. As among other foragers (see for example Konner, 1976), infants are carried in a sling on the mother's side. However, as shown in Figure 1, during work, children are sometimes placed high in slings on their mother's back. This forward-facing position allows children to see the mother's activities, including the use of tools, such as digging sticks or pounding stones in the case of the Hadza; or knives and machetes in the case of the BaYaka. By the time infants in both populations can independently sit, they are routinely in close proximity to foraging tools, often reaching for them when they are in sight. Between twelve and eighteen months, both Hadza and BaYaka infants played with tools, which in some cases were handed to them as distractions while parents were involved in other tasks, or to facilitate instruction (Hewlett, 1991). Although



a



b

Figure 1. (a) Hadza and (b) BaYaka toddlers looking over their mothers' shoulders as they work. Hadza and BaYaka children are often worn high on the back while mothers work, from where they can observe activities, such as (a) digging tubers or (b) bail fishing. Hadza photo by Alyssa N. Crittenden. BaYaka photo a still from a video made by Sarah M. Pope.



a



b

Figure 2. (a) Hadza boys with bows made with the help of older siblings and parents, and (b) BaYaka toddler with hatchet made for her by her father. Hadza photo by Alyssa N. Crittenden. BaYaka photo by Sarah M. Pope.

some anthropologists have described forager parenting as “laissez-faire” (Lancy, 2016b), parents in both populations appeared to be aware of what their children were doing with potentially dangerous objects (Hewlett, 2012), and monitored accordingly. For example, BaYaka mothers and teenage girls removed especially sharp or heavy knives from toddlers’ hands, replacing them with lighter or duller knives, or oriented young toddlers with knives away from other children. Nonetheless, children in both societies are sometimes injured by fire or knives, even when in the presence of caregivers.

As shown in Figure 2, Hadza and BaYaka adults also made child-sized versions of tools for young children, which children were encouraged to use for practice. For example, among the BaYaka, girls carried small baskets made by female relatives on short foraging expeditions with friends or parents; fruit or tubers were removed or added to the child’s basket by adults during the walk home, based on their perception of their child’s strength and carrying capability (see also Hewlett, Lamb, Leyendecker, & Scholmerich, 2000). Among the Hadza, tools included small digging sticks and small bows and arrows furnished by adults or older children (Crittenden, 2016a). Parents also introduced smaller sized pounding stones for baobab processing or small containers in which Hadza children could boil their own food over their own small fires. By middle childhood, children regularly used tools in play (Lew-Levy et al., in press), and by adolescence, children were proficient at using tools during foraging activities.

Chore assignment

From the moment they can walk, BaYaka and Hadza children were assigned tasks which increase in complexity as children age (Crittenden, 2016b; Lancy, 2012). Toddlers were often tasked with bringing objects across camp, and when the task was completed successfully, sometimes received praise. Perhaps in anticipation of future chore assignments, children in both populations practiced more complex tasks alongside adults. For example, a BaYaka mother cutting *koko* leaves into thin strips, a task which requires fine motor skills, sometimes did so alongside her five-year-old daughter, herself also cutting *koko*, though with less success. Among the Hadza, a young child waiting while her mother dug tubers sometimes assisted her

mother or dug in an adjacent hole with a smaller digging stick, whether or not the hole actually yielded a tuber. As children aged, they received fewer assigned chores, but were tasked with more difficult chores which took them farther from home. For example, a five-year-old boy might be asked to fetch five litres of water from a nearby watering hole, while an adolescent girl might be asked to carry greater volumes from farther distances. Thus, although our systematic observations suggested that children and adolescents were rarely assigned chores (Hadza: 2% of observations and BaYaka: 2.1% of observations), our ethnographic observations show that chore assignment contributed to children’s knowledge acquisition.

Foraging groups

As shown earlier, BaYaka children were more likely than Hadza children to forage alongside adults. Our ethnographic material suggests that this difference is normative. For example, SLL observed several instances in which BaYaka parents invited their children to forage with them. In one instance, an adolescent girl who preferred to forage with her friends was repeatedly asked by her mother, and then by her father, to join them in their foraging excursion (Boyette & Lew-Levy, under review). Rather unhappily, this adolescent girl eventually conceded. On the other hand, among the Hadza, ANC has rarely observed parents insisting that their children forage alongside them.

Although both Hadza and BaYaka adults primarily reported learning to perform subsistence tasks from their parents while foraging, the Hadza also stated that they learned to forage with their friends. For example, a recently divorced Hadza man with several young children explained that he learned to collect honey in the following way:

My father and friends who were older than me [taught me]. They used to take me to the bush and sometimes take me very far to be experienced. They used to make me set fire to the comb, blow soot to make the bees flee.

A young adult, known to ANC since he was a child, and now a father of two, explained how he first learned to hunt smaller animals before graduating to larger prey:

I started to go in the bush with my older brother, and when he saw a small animal, like a chacha [bush baby], he would let me shoot it. When I got a bit older, I then started to hunt big animals, like antelope, by myself.

During his adolescence, this same individual often took his own younger brother with him on hunting excursions with the explicit intention of helping him gain hunting and tracking knowledge.

Among the BaYaka, few adults mentioned learning from siblings and other children. Instead, adults reported that their parents or grandparents invited them on foraging trips, sometimes with the expressed purpose of imparting knowledge. For example, an older BaYaka man, a father and grandfather himself, explained how he learned to collect honey in the following way:

When I woke up in the morning, my father said “come walk with me to find honey”. I saw how to collect honey by being close to him. He said “cut the rope, and tie it here”. I was still young, so I couldn’t tie the rope. My father tied the knot and showed me. He told me how to look for honey [by climbing] in the tree. I found the honey in the tree, but didn’t know how to cut the comb, so my father sent me down to make a fire. My father climbed the tree to show me how to get honey.

Another woman explained how she learned to gather:

I learned to gather by walking in the forest with my mother. My mother made me a basket. My mother showed me [how] to find everything.

Discussion

Using quantitative and qualitative observational and interview data collected among Hadza and BaYaka foragers, we sought to understand variation in children’s participation in work, and how forager adults facilitated knowledge acquisition through participation. As among other foragers (Gardner, 1991; Naveh, 2016), Hadza and BaYaka children were rarely assigned chores. Children decided whether to forage, and with whom. Adults respected children’s decisions to forage with or without adults, even if these decisions countered normative foraging group compositions (i.e. Hadza children foraging with other children; BaYaka children foraging with adults). Taken together, these findings demonstrated that the cultural value of autonomy shared by many foragers is evident in the childrearing practices of Hadza and BaYaka parents (Hewlett et al., 2000). Whereas Nsamenang (2006) noted the indigenous African social ontogenetic paradigm “is premised not on an independent or autonomous frame; its foundational principle is an interdependent or relational script” (p. 295), our data instead suggested that for Hadza and BaYaka foragers, individual autonomy precedes interdependence, even as foragers cooperate in all aspects of life (Endicott, 2011; Gardner, 1991).

However, our results did not show that autonomy translated to laissez-faire socialisation. Indeed, adults actively exposed children to child-sized and adult-sized tools, and, when foraging with children, reported imparting knowledge. Furthermore, while rare, chore assignment was

recognised as a way in which parents facilitated knowledge acquisition. Overall, Hadza and BaYaka adults were attuned to children’s skills, and provided opportunities for learning through intent participation rather than explicit instruction (see also Lancy, 2016a; Nsamenang & Lamb, 1993; Rogoff et al., 1993). While learning was primarily in the domain of subsistence, children also developed an understanding of cultural values and norms of behaviour, such as the sexual division of labour and autonomy.

While ethnotheories of child development shape the learning experiences of children (Super & Harkness, 1986), the opportunities and constraints inherent to children’s ecology also affected the degree to which children can safely learn through participation. For example, adults reported foraging with children when collecting resources that required little skill for success, such as honey from stingless bees (*kanoa*) among the Hadza; or fruits, greens and mushrooms among the BaYaka. Adults also reported soliciting children’s help when participating in these safer foraging activities. More risky activities, such as hunting among the Hadza and climbing tall trees to collect honey from stinging bees (*banjui*) among the BaYaka, were usually not conducted with children because adults were concerned about children’s abilities to walk, inclement weather, and animal encounters.

When unable to forage with adults, our data showed that Hadza and BaYaka children employed different strategies for participating in work. Hadza children usually foraged in child-only groups, independently from adults. This finding is consistent with that of Hawkes and colleagues (1995), who found that Hadza children primarily targeted resources which matched their size and capabilities, such as shallow tubers and small birds located closer to camp, while adults ventured farther away (see also Crittenden et al., 2013). Thus, Hadza children contributed economically by making the best of a small situation (Bird & Bliege Bird, 2002), in the sense that they collected resources which matched their size and capabilities.

Unlike Hadza children, BaYaka children primarily contributed through household and food processing work. While easy-to-acquire resources were less accessible to BaYaka children (Hagino & Yamauchi, 2016), BaYaka food processing is extensive and includes nut cracking, grating cassava leaves, cutting fine strips of *koko*, soaking cassava tubers, and pressing palm nuts into oil, alongside other food processing activities done by both the Hadza and BaYaka, such as roasting and butchering. Thus, though BaYaka children’s contributions were not primarily in the form of foodstuffs, they contributed to the household economy through processing, cooking, and other household work. Similar results were found when comparing child productivity among Hadza and !Kung forager children from the Kalahari in the 1980s (Blurton Jones, Hawkes, & Draper, 1994; Hawkes et al., 1995). These ecologically-dependent strategies provided Hadza and BaYaka children with opportunities to learn while growing into productive participants in the family and camp economy.

Limitations

The interview format restricted us from investigating how child-specific variables (for example, child age and child sex) influenced the responses of adults. For example, adults who stated that they did not forage with children because they walked too slowly may have had younger children in mind. Furthermore, our data collection was restricted to one or two foraging seasons; a year-long observational study encompassing seasonal variation in resources may reveal different patterns of participation for Hadza and BaYaka children. While none of our child participants were in school at the time of data collection, many had attended a school at some point in their lives, which may have consequences for children's learning and cognition (Davis, 2014). Climate change and logging have contributed to resource stress among the BaYaka, perhaps leading to different patterns of participation among children (Fernández-Llamazares et al., 2015). Climate change, presence of missionaries and NGOs, and ethno-tourism may also have affected resource availability among the Hadza, and thus, children's activities (Pollom, Herlosky, Mabulla, & Crittenden, under review; Yatsuka, 2015).

Conclusion

Nsamenang advocated for research focused on how children from Africa's diverse cultures acquired knowledge through participation in adult tasks. Building on his work, the present paper explored this topic among two populations of African foragers. Our study suggested that, due to environmental risks, resource complexity, and ethnotheories regarding appropriate child and parent behaviour, Hadza and BaYaka children participated in different work activities. Nonetheless, and likely more so than for farmers, Hadza and BaYaka forager children were guided through autonomous participation in culturally relevant activities, including subsistence (Boyette, 2016; Gallois, Duda, Hewlett, & Reyes-garcía, 2015; Lancy, 2016a; Rogoff et al., 2003). Future studies should consider differences in subsistence and environment when investigating learning cross-culturally.

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Appendix. Results of the multilevel logistic regressions examining reasons to forage, or not, with children. For fixed and interaction effects, values represent B (SE). For random effects, values represent variance (SD).

Dependent variable	Fixed effects			Interaction	Random effects	
	Intercept	Sex	Ethnicity	Ethnicity X Sex	Individual	Camp
<i>Reasons not to forage with children¹</i>						
Distance	−0.99(0.37)**	1.08(0.45)*	−0.99(0.51)	−0.95(0.69)	0.64(0.80)	0.00(0.00)
Danger	−1.95(0.69)**	−0.03(0.55)	−1.43(0.97)	1.08(0.83)	0.42(0.65)	0.76(0.87)
Autonomy	−0.78(0.44)	−1.20(0.41)**	2.07(0.60)***	1.15(0.55)*	0.00(0.00)	0.30(0.55)
Disturbance (Hadza only)	−6.44(2.08)**	0.19(1.47)	NA	NA	31.25(5.59)	0.00(0.00)
<i>Reasons to forage with children²</i>						
Company	−1.69(0.53)**	−1.69(0.91)	−0.71(0.64)	1.44(1.25)	1.15(1.07)	0.00(0.00)
Autonomy	−2.23(0.44)***	0.17(0.64)	−2.56(1.06)*	NA	0.00(0.00)	0.00(0.00)
Knowledge	−1.13(0.53)*	−0.94(0.59)	0.77(0.70)	0.41(0.79)	0.27(0.52)	0.43(0.66)
Help	−1.23(0.46)**	1.14(0.49)*	0.79(0.59)	−2.66(0.77)***	0.13(0.37)	0.25(0.50)

p values: * ≤ 0.05; ** ≤ 0.01; *** ≤ 0.001.

1. Based on 338 interviews with 108 Hadza and BaYaka individuals who had not foraged with children that day, except for disturbance, based on 163 observations from 63 individuals for the Hadza only.
2. Based on 210 interviews with 88 Hadza and BaYaka individuals who had foraged with children than day.

African indigenous games: Using Bame Nsamenang's Afri-centric thoughts to reflect on our heritage, pedagogy, and practice in a global village

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As we go global and begin to make early childhood practices universal, certain aspects of communities remain fixed in deep realms of their everyday living and can only be accessed by those who believe in it. Believing in it requires having faith in a practice that will always be better than what others bring as “best practice”. This is because that aspect is what defines who you are and changing it amounts to removing a piece of you with the intention of replacing it with an “artificial part”. This may be the case with African indigenous games that have been played in various settings to define the Africanness of given communities. The values that these games bring to the Africans as they try to hold on to what belongs to them, is discussed in this paper. Bame Nsamenang used such thoughts to propel the Afri-centrism philosophy to direct thoughts into values that are African in nature, even when there are no clear boundaries of African in Africa. This article focuses on Nsamenang's Afri-centric arguments in line with promotion of African indigenous games as a heritage, pedagogy, and a practice.

Keywords: African games, Afri-centric, Nsamenang, pedagogy

Introduction

The demise of Bame Nsamenang, one of Africa's most prolific authors of publications that have been critical of western influence on education and development in Africa, leaves behind a tender momentum that had started to build in support of his Afri-centric philosophy (Serpell, 2018). Nsamenang always made sure his writing never departed from the rich African soil from which he was nurtured. His tracing of an African version of stages of human development brings to life the connection we have had with our ancestors in the worlds of both the living and the dead. Nsamenang emphasised the need to promote Afri-centrism as a means of propping up African ideals, values, and ways of knowing to reflect Africanness in us (Nsamenang & Tchombe, 2011).

Nsamenang's thoughts revolved around a theory that most Africans' education was based upon curricula and pedagogies that mimicked the West and worked with teachers who failed to keep “sight of the soil out of which the existing African society had grown and the human values it produced” (Kishani 2001, p. 37). Parents trusted the school system that valued modern Western education to deliver leaders for the new century, based on the Euro-centric prejudices that portrayed African knowledge as backward (Hountondji, 2002). However, parents are realising that the education being provided in schools is based on foreign cultural values (Kaya & Seleti, 2013) that only produce job seekers (Nsamenang & Tchombe, 2011).

Probably, it is time for Africans to start working towards strengthening valuable indigenous capital while entrenching the spirit of *ubuntu* as its core value system (Maunganidze, Kasayira, & Mudhovozi, 2011). The starting point in this venture is to gain black consciousness which may help us to overcome the second force of oppression (Biko, 1987). Gaining black consciousness helps us to start re-Africanisation (Ntuli, 1999). Re-Africanisation should be an easy task if we can accept to

rethink our own image through the process of de-colonising the mind (Ngugi, 1986). In this process, a de-colonised mind will give us room to relinquish all that is disastrous to our development, advancement, and sustainability (Odora-Hoppers, 2001). The key message here is that we should take advantage of, and use, all the richness surrounding us; yet be careful to position ourselves to adopt an Afri-centric perspective to education and life (Nsamenang, 2003).

Recently, a move towards integrating indigenous knowledge (IK) in school curriculum started in South Africa (Kaya & Seleti, 2013). Traditional children's games and songs have also been recognised as forms of IK (Mutema, 2013). This interest in IK now demonstrates that when communities participate in indigenous games, they not only improve their quality of life but also strengthen their cultural fabric to ensure indigenous distinctiveness (Eichberg & Norgaard, 2000). Thus, games become cultural mirrors that carry with them the reflection of lived realities and cognitive maps of communities within a given socio-cultural and historical context (Burnett & Hollander 2004).

This study is motivated by Nsamenang's theory of social ontogenesis that is rooted in the traditions of ecological and cultural theorising developed from the *Nso* people of Cameroon (Nsamenang, 2006). The theory addresses how, throughout ontogeny, children are co-participants in social and cultural life in communities (Nsamenang, 2006) as they go through the three phases of selfhood (Nsamenang, 1992). Each of the phases are marked by distinctive developmental tasks, defined within the framework of cultural realities, and developmental agenda (Nsamenang, 2000). Thus, children are able to graduate from one activity setting and participative sector of the peer culture to another; steadily maturing towards adulthood (Nsamenang, 2013).

As we focus on use of the indigenous games, we are able to see how African participative pedagogies can be

embedded into educational ideas meshed into family traditions, children's daily routines, and interactive processes (Nsamenang, 2004). Indigenous games, if used as education and socialising activities, help African communities to assign sequential cultural tasks to different stages of child development as a sociogenic process. Cultural beliefs and practices guide the expectations required for each ontogenetic stage (Nsamenang, 2013).

On their own, it has been found that games lead to learning in a natural way, often without adult involvement (Kejo, 2017). Such games not only benefit different aspects of child development, but also amplify children's learning potential (Howard, 2010; Lillemyr, 2013). Furthermore, through play, specific values and biases can be shaped (Cannella, 1997). However, children do not have to play forever. Communities have built in mechanisms that allow time spent playing by children to gradually decrease as they grow older and take on more responsibilities by learning from adults through working (Lancy, 2002).

Goal of the study

While we have been able to see what role the indigenous games can play in children's life, there has been less effort in documenting them for future use. The main goal of this study was to document some indigenous games played by children in Uganda and to from them learn the cultural heritage they carry, the pedagogy used and the practices involved.

Methods

This exploratory study was done to document indigenous games that were being played in communities in Uganda. Ethical clearance was obtained from Kyambogo University Faculty of Education Board to conduct the study. Consent was obtained from the community at a clan meeting, including parents and their children who consented to participate. Pictures were taken in such a way that children's faces were not exposed, as required by ethics board.

The study used a desk review to gain insight into the contribution of indigenous games to African cultural heritage, practice, and pedagogy. The study was conducted at two sites. One was in a deep rural setting of Otuboi County in Kaberamaido district in eastern Uganda, and the other in the suburb of Wakiso district found in central Uganda. Later, participant observation was used to gain information about the indigenous games. A convenience sample of fifteen children in the age range of 5 to 15 years were observed during play and then interviewed about the rules of their games. An observation checklist and document guide were used to conduct a content analysis of observations and interviews.

Findings on indigenous games played in Uganda

The indigenous games being referred to in this study are largely informal in nature, but are governed by rules that are known by players and all players are referees. All players learn to follow the constitutive rules (Searle, 1969, 2008) and do not require adult supervision (Mweru, 2011). These games can be categorised as games of memory, simulation of experiences, or physical prowess

(Waithaka, 2009). Furthermore, these games are not exclusive to Ugandan communities, but can be seen across other communities in Africa and probably in the West (Robertson, 2016). For example, the *sokoto* game works similar to American baseball, yet it may never be recognised as possibly having originated from Africa.

Changachanga

Changachanga is depicted in Figure 1. This is a field game played on a pitch that can be as large as a netball pitch or as small as a 2-by-4 meter pitch. The size of the pitch depends on the number and age of the players. The game is played by two teams each having 3 or more members. The playing team stands on one side of the pitch facing the catching team members who stand in the pitch, each member standing in a column space between the box spaces. The team leaders face each other and clap or shake hands three times to signal the beginning of the game. As a constitutive rule, members from the catching team are restricted to only move along their assigned rows, and must not step on the line in their attempt to catch the playing team members. It is only the leader of the catching team that is free to move along both the row assigned to him/her and the middle column. On the count of three, all the playing team members run to enter the boxes with the aim of crossing all the column spaces being manned by the catching team without being touched by any of them.

The objective of the playing team is to run and get out of the pitch on the other side. When out, any of the team members must sneak back into the pitch again and run back to the starting point without being touched by any of the

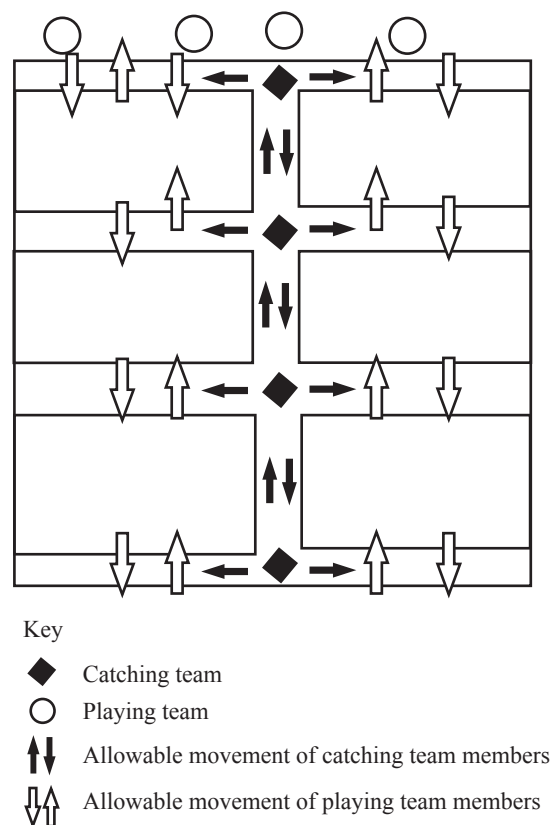


Figure 1. *Changachanga* play field

catching team. The playing team members can crisscross the boxes without going backwards. Any member who accidentally moves back to the previous step will lead to the whole group losing and becoming the catching team. If one person successfully sneaks back, the whole team wins a point and the game is restarted. However, if any of the team members is touched by any member of the catching team, the whole team will lose and they have to come into the pitch to become the catching team. The game goes on till players lose interest in it for the day.

What the game teaches

The game teaches team spirit, strategic thinking, and physical agility. As part of team spirit, no one person is able to work alone and win. When one person wins, all the other team members automatically win, just like in a game of football. Other members may distract a member of the catching team to allow their teammate to sneak into another box. Also, if one person makes a mistake, the whole team pays for it by becoming the catching team.

In terms of strategic thinking, in order for team members to sneak into the next boxes whose perimeters are being guarded by members of the catching team, each team must get a strategy. While the ones sneaking into the boxes strategize how to sneak into the boxes, members of the opposite team will also be strategizing how to trap their opponents who try to sneak into the next boxes.

Physical agility is taught through running as fast as one can while ensuring that you are not caught or trapped into any box. They have to dodge, sneak, distract, or jump to escape arrest in order to win. As one child interviewed noted: "I like this game. From it I have learnt how to dodge people who want to catch me. I know if bad people come to try to abduct me, I can easily escape from them and save myself." As alluded to by the child respondent, the agility skills learnt in this game can come in handy to save children who are targeted as victims of either kidnap or abduction for child sacrifice (a genuine hazard in some communities (Ibrahim & Muktar, 2017)).

Sokoto

This is a game where an individual competes against other individuals in a group. As indicated in Figure 2, in playing the game, two sticks (one-meter-long batting stick and a 4 cm stick sharpened at both ends) are used.

To play the game, the shorter stick is placed across at the end of a channel-shaped hole carved in the ground and hurled away using the longer stick. The other players who will be standing some distance in front of the person

hurling the short stick must attempt to catch it before it lands on the ground. If they catch it, the person who hurled it loses and is replaced by another player. In case the short stick is hurled and the other players fail to catch it, the player progresses to the next level of play. In the next level, the player puts the short stick in the channel with the sharp part protruding out of the hole. The player must then hit the other sharp part of the short stick gently to allow it to spring out of the channel before hitting it in mid-air to move to the direction of other players.

As the short stick flies towards the other players, the other players must try to catch it in mid-air using their hands as in baseball. If they do catch it, the player loses and is replaced by another person. If they fail to catch it and the short stick falls down, the player must estimate the distance from the short stick to the channel in terms of the number of short sticks needed to cover that distance. If the player over-estimates, the other group members will use the short stick as a meter rule and measure the distance to the tunnel from where the short stick landed. If the estimate was accurate or less, the number said becomes the scores for the player. However, if the number mentioned goes beyond, then the player loses and is replaced by another player.

What the game teaches

This game teaches estimation, counting, spatial relations, and catching skills. In terms of estimation, every player must learn to accurately estimate given distances as a measure of the short stick being used. The figure that is estimated becomes the score that the player earns to win the game.

Every estimate involves counting. The players use the short stick as a counter to ascertain the distance given by the player. In case one fails to count appropriately, he/she loses the marks not said. Meanwhile if the player makes a mistake and says a wrong figure, he/she will be disqualified.

Spatial relations are taught through the player learning to estimate and hit the small stick in mid-air in order to get a point. Failure to hit the stick because of poorly developed spatial relations ability makes one lose marks. Furthermore, other players may be near the player trying to hit the small stick. Sometimes, when the small stick first darts out of the hole before it is hit, another player can catch it in mid-air leading to the disqualification of the one who was supposed to hit it.

The other players must learn to catch the flying stick in mid-air using their hands. This act teaches the physical



Figure 2. Batting stick and sharpened play stick used in the *sokoto* game

skill of catching and running purposefully so as to be able to catch the flying stick.

Kakebe

This game is similar to the hide-and-seek game. In this game, a group of players meet in one place and decide who should start seeking others. An object (tin, bottle, gourd, or fruit) is placed at the centre of the group. One of the players (not the one going to seek others) then kicks the object as far away as possible to allow all the other members to run away as fast as possible to hide. The one seeking the others must run and bring the object that was kicked away back to its original position so as to begin seeking other players. In case he/she sees any other player, he/she must call the name of the person seen and run back to hit the other object. Hitting the object signals that a person has been arrested. The person arrested has to come and sit near the object and wait for others. The person seeking others will continue until all the other players have been found and arrested. If he/she succeeds, the first person to be arrested will now become the one who will seek the rest. During the process of seeking other players, should the one seeking others see a player, that player is free to run as fast as possible to the object and reach it before the one seeking. If that happens, he/she will kick the object far away, thus releasing all the other persons who had been arrested. The one seeking has to start seeking afresh. Also, any person who is hiding, upon seeing the arrested may decide to come and free the friends by running to the object and kicking it far away before the one seeking can reach it.

This game is very interesting, but also has challenges. One of the challenges is that the players hiding may run far away and then lie in the bush. While there, they can fall asleep. So the one seeking will find it difficult to get them and lose interest in the game. The other challenge can be that the ones arrested, as a way of occupying themselves, may start another game that is more interesting, thereby distracting the one seeking. Sometimes the one seeking may also join in the new game and forget the others in the bush. Similarly, the ones hiding in the bush may start another interesting game and forget the game they were playing before.

What the game teaches

Kakebe teaches cooperation, escaping from trouble, physical endurance, decision making, and emotional stability. In terms of cooperation, the players learn to cooperate in this game so as to be able to keep playing. In case one is arrested, the other players have to find a way of rescuing the person by sneaking to kick the object far away as possible, before the captor can get to it.

Kakebe teaches escaping from trouble. Specifically, when playing this game, all the players must hide in such a way that the captors are unable to get them. They try to hide in places that one would not expect anybody to hide. Thus, in times when a family is attacked by bad people, each child upon hearing an alarm is able to run and hide from the attackers, saving him or herself.

In terms of physical endurance, the constant running to stop the other players or the players running away from

the captors train the children in physical endurance and stamina to keep on without giving up.

Decision making is taught through choosing to come to free colleagues while knowing the risk involved of yourself being captured. This provides children a learning opportunity for strategic decision making.

Lastly, emotional stability is taught. In most cases, the person seeking the others may get emotional when the persons captured are released every now and then and thus denying him/her the chance to also become one of the persons being sought. Some children end up crying or giving up because they have failed to capture the other players. In this case, the cultural purpose for the game is to instil self-control: the player is expected to emotionally control him/herself and go on till the time he/she will succeed.

Hunting game

This is a common game in the rural areas. It is played using a hoop and sticks that can be equated to spears. A group of children ranging from three to over ten can play it. One of the players rolls the hoop then the other players start throwing their sticks (spears) with the aim of throwing them through the centre of the hoop so that it comes to a standstill. The person whose spears' makes the hoop stop gets a point and the hoop is thrown again.

What the game teaches

The game teaches marksmanship and physical endurance. The skill of targeting the centre of the rolling hoop trains the children in marksmanship. This skill is important for self-defence in that a child is able to aim at and easily hit an enemy who is running. The act of running following the hoop requires physical stamina that one must develop in order to be able to win.

One leg down

This is a tree climbing game played by a group of children ranging from 3 years and above depending on the size of the tree. Older children usually prefer a bigger tree, while younger children go for a smaller tree. It needs no equipment save for the tree to be climbed. In the game, one of the children catching the rest stands about 10 metres away from the tree. He/she then calls the other players saying: "One leg down ready?" The other players have to hold the tree ready to climb it, but must place one leg on the tree while the other should be on the ground. When they are ready, they will say yes. Upon saying yes, the one catching will run towards the tree and try to catch the leg of any of the persons climbing the tree. In case all the persons climbing the tree succeed in climbing, the one catching must try to jump to touch at least any one of them. If she/he fails, then she has to go back and start the game afresh. In case one person is touched, that person has to go and become the next person to catch others.

What the game teaches

This game teaches tree climbing skills, spatial relationship skills, physical endurance, and strategic thinking. The main goal of the game is to climb the tree as fast as possible without being caught. This is a lifesaving skill that all

children need to learn. In case they are being chased by a wild animal or a rabid dog, if they can dash to the nearest tree and climb it before it bites their feet, then they are saved.

In terms of spatial relationship skills, for the person coming to catch the others, they develop the skill of capturing others in flight. In trying to catch others in mid-air, they develop spatial relationship skills. They can use this as fruit gathering skills that can help them later in life.

Physical endurance is taught through the act of running to catch another in mid-air as they climb the tree. This requires physical stamina that one must develop in order to be able to win.

Lastly, strategic thinking is taught. In playing the game, the one catching the others must decide which person should be focused on, based on one's assessment of their skill in climbing. Thus, when the time for catching comes, as a strategy, one weak or less prolific person no matter the age will be targeted and captured, thus the one chasing wins.

Sagam sagam

This game is played by two players at a time. As depicted in Figure 3, the game is played on a playing area made up of two columns of four boxes each.

In playing the game the children stand with one leg in one box and another leg in the next box (Figure 3a). The players will not face each other, but have to face the opposite direction. As they start to play, each child has to

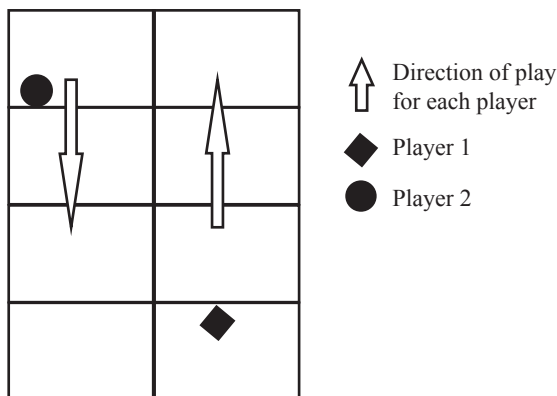


Figure 3. *Sagam sagam* play field and direction



Figure 3a. *Sagam sagam* players

jump with both feet to the next set of boxes in the opposite direction of the other child while saying the following in rhythm: "...sagam-sagam, sagam-sagam huuh; sagam-sagam, sagam-sagam huuh." The jumping is done twice in two sets as the word sagam is mentioned. At the point of mentioning *huuh*, both must jump to the others boxes in an exchange.

Should they collide or one of them steps on the line in the process of play, the one who made the mistake is replaced by another player.

What the game teaches

Sagam sagam teaches rhythm, concentration, and coordination. In terms of rhythm; moving together following a given rhythm is key in winning this game. Concentration is taught through each player being required to concentrate to follow his/her path in order to avoid colliding with the other. In terms of coordination; one must be able to balance and only stay within the given boxes without falling off. The cultural purpose of this game is to teach both balance and partnership in order to overcome a given challenge.

Chodi-chodi

This is a hopping game. The playing area is shared with the *sagam sagam* game (see Figure 4). The game is played by an individual but watched by others to detect foul play. In playing this game, the player has to stand in two boxes, with one leg in a box. When the player is ready, he/she closes the eyes and jumps to the next set of two boxes before moving backwards one step. While in that position, the player must again jump to the next two sets of boxes before moving backward another step. This is done on and on till the player exits the play area from the opposite side. All this must be done without opening the eyes. The rest of the players act as referees to ensure that the player does not open the eyes and at the same time must not step on any of the lines drawn on the play area. If the player goes to the end without opening the eyes or stepping on any line, he/she gets a score and starts afresh. Breach of any of those rules leads to losing, and another player comes in.

What the game teaches

Chodi-chodi teaches estimation of spaces, concentration, and coordination. Estimation of spaces is taught since



Figure 4. *Chodi-chodi* players

the player must estimate the area of the spaces so as to move through them without seeing. That estimation teaches them to find their way in the dark. In terms of concentration; each player must concentrate to move in the given direction without getting lost. Lastly, coordination is taught because the act of jumping from one box to the other with closed eyes requires one to coordinate the body for better movement. One of the key cultural purposes for this game is fairness and honesty by all involved. Both the player and referee must acknowledge where a fault has been made.

Epiki

This game is much like a game of gambling. As depicted in Figure 5, the game uses a small hole made in the ground and seeds, stones, coins, or bottle tops contributed by each player in equal numbers. In playing the game, each member throws a stone into the hole. The one whose stone is nearest to the hole will be the first to play. When play starts, a player will get all the stones or coins contributed and throw them into the hole. The player will claim any stone or coin that enters the hole. Then, from those coins that did not enter the hole, the other players will choose one to be hit. If the player hits the identified coin without hitting any other coin, the player takes all the other coins. If the stone used for hitting the coins enters the hole, the player loses all the coins gained and another player goes to play. If the coins are all taken, players have to contribute more coins for the game to continue.

What the game teaches

Epiki teaches targeting, concentration, and strategic thinking. Targeting is taught since the player must have good aim to ensure that all coins thrown enter into the hole in order to gain them. That skill is needed later in life for fishing or defence. In terms of concentration; each player must concentrate to hit a given target. Lastly, strategic thinking is taught since the one who throws the coins must be strategic enough to cast the coins with the aim of making all of them to enter into the hole. In case of a miss, the next best option is for the coins to just scatter around the target hole to make it easy for the player to hit any one of them without touching any other.



Figure 5. *Epiki* player

Naget

This is a popular game among girls, although boys also play it. In playing this game, seven stones that vary in size are placed at the centre of the play area. Then, two players form a team standing on opposite sides of the play area, and throw a ball towards each other as they target a third player (their opponent) standing at the centre where the stones were placed. The objective of the one in the centre is to dodge the ball, but she must also find time and space to pile the stones one on top of the other till all stones are in one heap. A score is recorded if one succeeds in making a complete pile.

What the game teaches

Naget teaches concentration, seriation, and team spirit. Concentration is needed to ensure that children pay attention to both the ball and stones. Seriation is taught since the stones must be placed starting with the largest to the smallest for the pile to be made. Usually younger children are unable to play if they have not yet developed seriation skills. In terms of team spirit; the teams must cooperate in order to win or be able to target and hit the person piling the stones.

Discussion

African indigenous games as a heritage

Some of the games played can be seen as unique to given communities and help to socialise children into their respective cultures which is now slowly vanishing (Mutema, 2013). In trying to pursue a “best practice”, we have to know that such a practice is actually another person’s indigenous practice. If we are to follow the best practice, we need to understand that every indigenous game is rooted in a given cultural context (Salen & Zimmerman, 2004) that may not be relevant in another environment.

Additionally, indigenous games have been used as a form of entertainment, cultural transmission, and learning (Gobet, de Voogt, & Retschitzki, 2004). In playing the games, children share with the elders their respected cultural elements that are used to share information, intellectual skills, cognitive strategies, attitudes, and motor skills for all (Wanderi, 2011). As children play the games, the elders watch and reminiscently reflect on their youthful years, thus connecting with the children. These memories represent an indigenous cultural heritage the elders are seeking to preserve in the face of globalisation trends.

As children play, they ground the cultural and traditional setting of play that are seen as unique to Africa. People who insist on following their culture are not disconnected into the universal abstract but instead are grounded in a people and place (Dei, 2002). Already, different countries are known for the games they promoted. For example, the Japanese wrestling game defines the Japanese and keeps them in high esteem especially when they see persons from other cultures getting into the Japanese attire and playing the same game. The Japanese are happy because they know that games and sport have been found to reflect the evolution of a people’s culture (Eichberg & Norgaard 2000). In keeping this culture, the Japanese do not only keep a tradition, but also maintain

a cultural heritage that is passed on with pride from one generation to another. Thus, cultural games sustain and keep the cultural heritage alive (Nabie, 2015).

African indigenous games as a pedagogy

In each of the games played, there were rules to be followed. Those rules also apply in everyday life. These rules can be difficult to master, but when built into games they become easier to master. Thus, cultural games have been used to operationalize an indigenous knowledge system. In turn, this turn brings in authentic engagement (Nabie, 2015). The same rules have been found to offer players structure and motivation to learn (Prensky, 2001). If followed diligently, these rules have the potential to enhance players' perception, memory, and thinking (Gobet et al., 2004). Some games have the potential to offer players computational thinking skills such as conditional logic, algorithms, debugging, and distributed computation (Berland & Lee, 2011).

Furthermore, the games have been seen as tools that can be used to make learning relevant. All the games teach skills that are required in the environment. Thus, anybody who wanted to develop some skills in children needed to first make sure that the identified skill is relevant to members of the community before it can be taught. It was just a question of moderating the curriculum to ensure that it taught what was needed. The intent of any teacher was to use games as alternative instructional tools to make content relevant, accessible, pleasurable, and memorable (Nabie, 2015). Since these games were found in the community and used familiar materials, they developed skills that children needed to use as adults in the society (Owusu-Mensah & Quan-Baffour, 2015).

Playing indigenous games provides opportunity for learners to practice skills. Communities know this well and therefore encourage such play as a training facility in the apprenticeship mode as a dynamic pedagogical way of developing specific skills in children. Thus, every game that is introduced provides spaces for interactive apprenticeships and skills practice (Nyota & Mapara, 2008). In this context, the African games become learning environments just like apprenticeship workshops where trainees acquire various life skills and values (Mutema, 2013).

African indigenous games as a practice

The games are also played according to an age grade system that teaches hierarchy in the community. Those within a group are always reminded to be faithful to the group and stick to the cultural tradition with a strong warning that "*mwacha asili ni mtumwa*", translated as "he who discards his traditions and culture is a slave" (Abubakar, 2011). Thus, entry to each grade is during an initiation ceremony that helps one to graduate to the next level to enjoy the responsibility, accountability, and privileges of a given group (Omolewa 2007).

Indigenous games have always been played as a practice by children and adults alike. This has always been done as a way of life because it is what they know how to do best. Additionally, the practices define what has to be learnt immediately because need will arise soon. Thus, in

the practice, games can be played simply as an educational entertainment (Eichberg & Noogaard, 2000). Since many communities did not have specific entertainment industries, in the time of need, games became that entertainment that gave them fun, enjoyment, and pleasure (Prensky, 2001).

Sometimes games may not just be a reserve for certain occasions or a certain season. Some games were, and still are, part of daily activities in Africa (Nkopodi & Mosimege, 2009), making them a way of life (Mutema, 2013). In doing it again and again, the mechanics of actions, rules, and type or quality of interactions players make during play (Arnab et al., 2015) keep reminding all who play about their knowledge, know-how, and practices that have been developed and maintained from a long history of close interaction with the natural environment (Soni, 2007).

Conclusion

When we focus on our cultural heritage, we are not simply going back to regurgitate something whose usefulness has passed, but rather trying to find our bearings in the current confusion. Being in the culture helps us to locate ourselves and be able to proudly go out there and tell other people who we are as opposed to us trying to mimic other people. Our uniqueness helps us to have something distinctive that the rest of the world can learn from. In this respect, we shall be seen from the values we treasure, the practices that define our people, and the pedagogy that has helped us transfer life skills to the next generation that is able to fit in the community. The indigenous games can further be improved and regularly practiced in the same way we have had other games played in the international scene. At one time, all those games were mere indigenous games, which continue to pass on cultural heritage of communities that once practiced it.

Recommendations

Reflecting on the indigenous games in this study, the following recommendations are suggested. First, African communities need to start taking the indigenous games seriously; it is a tool they can use to inculcate cultural heritage in their children. In most cases, some people in the communities look down upon such games in favour of the western games. As a result, we continue to see a proliferation of western indigenous games as a sign of development, yet we forget that they too worked hard to develop and market their games.

We need to encourage communities that have started reintroducing indigenous games and holding festivals or competitions in such games. These gestures have been able to bring alive the cultural heritage which had been lost due to disuse.

Teachers in schools need to start using indigenous games as pedagogy in class to teach academic skills. In doing this, they will be using familiar pedagogy, promoting cultural heritage, and also make the learning relevant to the community.

More efforts to document some other indigenous games are needed so as to establish a repertoire of such games for the use of the new generation that has never been exposed to them. Both written and digitalised versions of the games

can be uploaded into specific open access repositories that can be accessed by all those interested in them.

Finally, more African scholars need to emulate Bame Nsamenang in speaking of African renaissance as opposed to always thinking that nothing good can come out of it. Africentric thinking, pedagogy, and decolonisation of the African mind can start with our indulgence in indigenous African games both within and outside the community.

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Staying power: Remembering A. Bame Nsamenang

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Bame Nsamenang was an exceptional force for Africa's children, seeking to have their lived experience be heard and appreciated globally. Bame identified early in his career a dearth in the African-led and African-conceptualized child development (CD) literature and commenced to address that void. Over time, he addressed as well similar weaknesses in the early childhood education, care and development (ECD) literature becoming an inspiration to a younger generation of African scholars and a beacon for those who questioned the universality of dominant discourses in both the CD and the ECD literatures. While his time with us was shorter than expected, his contributions will be long standing.

Keywords: Nsamenang, Africa, early childhood education, care and development (ECD), child development

I remember a sunny afternoon outside a cafe in Montreal in 1993, opening *Human Development in Cultural Context*, and feeling a smile well up for this recent post-doctoral African scholar who dared to *stay* the power of Western theories of development at least long enough to introduce some other ideas outside the dominant discourse. In doing so, I wondered how long he could stay the course and what would be his influence. Now we know..., the course was, very unfortunately, shorter than we wished, but his mark was made. I saw evidence of that mark, of his influence, in the early 2010s as I worked with a doctoral student to compile a Compendium of African early childhood education, care, and development (ECD) literature. This essay provides an overview regarding what we found in that literature. However, I cannot help but remember so many moments along the way as that scholar I first “met” in Montreal (over a quarter of a century ago) became not only a colleague and collaborator, but a close friend. Seeing Bame's influence throughout that Africa Compendium brought, again, a smile to my face.

Bame and I communicated after I had read *Human Development in Cultural Context*. In reading, it I saw he was familiar with a 1988 volume that I had edited focusing on ecological research. I assumed our connecting point was Michael Lamb, a chapter author in that volume and Bame's self-described mentor during the time he was a post-doctoral Fogarty Fellow at the National Institute of Child Health and Human Development (NICHD) in Washington DC (1987–1990). By the time that Bame and I met in person in 2000, at the Beijing ISSBD Conference, my own work had shifted from Canadian and Indigenous early childhood education, care, and development (ECD) to sub-Saharan Africa, through an invitation from UNICEF in 1994. From the earliest stages of the African ECD work I was struck by the paucity of African led and African conceptualised ECD research and publications. Bame stood out as one of the very few ECD scholars who was both born and based in Africa, but also as an African scholar who did not hesitate to challenge Euro-western, hegemonic forces in the fields of child development (CD) and ECD. As Bame noted at two different points in his career: “...the anchor-data for developmental literature

has overwhelmingly been derived from the Western world to the unfortunate exclusion of the Third World.” (Nsamenang, 1992, p. 3), and “When Euro-American ECD programs are applied as the gold standards by which to measure forms of Africa's ECD, they deny equity to and recognition of Africa's ways of provisioning for its young, and thereby deprive the continent a niche in global ECD knowledge....” (Nsamenang, 2005, p. 276).

When we met in 2000, I was at a key transition point in the sub-Saharan Africa (SSA) work. Until then, my work with UNICEF was focused on providing 2–3 week workshops for UNICEF-identified key leaders from diverse SSA countries. Those workshops had gone well, but the participants, energised by their time together with similarly engaged colleagues and with international ECD development leaders, wanted more. They requested a graduate level program that would allow them to maintain such interactions and learning opportunities, continue their work in-country, and also open doors for their learning to radiate within their countries and across regions. Consequently, the Early Childhood Development Virtual University (ECDVU, 2000–present) was born.

The concept for the ECDVU (a graduate level, online plus face-to-face approach to promoting ECD in SSA) resonated not only for ECD country-leaders but for various key donors supporting ECD at that time. UNICEF was onside, but lacked headquarter level funds to create and mount the initiative; however, funding from headquarters was less of a problem for the World Bank (WB) which had in the mid-1990s identified ECD as a key socio-economic development initiative for SSA. The WB supported the idea of my transforming the third ECD regional workshop, into an SSA-wide ECD Conference—a first for Africa. Held in Kampala, Uganda in September, 1999, the 200-plus attendees from 19 SSA countries was a good reference group to gauge support for mounting an ECDVU leadership and capacity promoting program. The response was immediate and strong: It was clear that locating motivated participants would not be a problem!

The initial delivery of the ECDVU was as a three-year Master's degree program with 30 participants from ten SSA countries. Each participant continued with her/

his key in-country employment throughout the program. The approach taken in developing the ECDVU curriculum was borrowed from my earlier work with Canadian First Nations (Indigenous) communities (Pence & McCallum, 1993), incorporating local knowledge and including Indigenous knowledge holders as well as Western sources and leaders.¹ Very meaningfully, the inaugural delivery not only had a 90% completion rate for the three year Master's degree program, but across all five deliveries (2001–2016) only one of the graduates left Africa (for country-level political reasons)². Bame, whose books and other writings had been a part of the program from the beginning, joined the teaching team for the second delivery and continued to be a mainstay of the professorial group through its most recently completed, collaborative delivery with the University of Ibadan in 2016.

With Bame as part of the “ECDVU family”, our opportunity for on-going interaction was greatly enhanced as all ECDVU cohort-participants came together, in Africa, for two-week seminars at the mid-point of each six-month term with professors from that term attending, lecturing, and supporting students in their work. ECDVU participants, the “ECDVU family”, remain in close contact and members shared their grief in hearing about Bame's, *their Prof's*, premature death in February 2018. A sample includes:

- He was the ECD giant from our continent (Malawi).
- We are beneficiaries of his deep knowledge and critical thinking and we cannot easily forget him. We thank God for allowing and helping him to document his thoughts in books and journals (Nigeria).
- My teacher, mentor, a great Icon of ECD is gone. I am so sorry for the loss of this great man (Tanzania).
- Bame's natural instinct to support our passing indigenous knowledge to children impacted our perception on ECD issues in Uganda. Oh! We have lost a brain and passion for ECDVU (Uganda).
- A giant oak tree in Africa's ECD efforts has been uprooted, a great inspirer has been called to eternity. It was with great sadness that the news of Bame's demise came to me (Ghana).
- We have indeed lost a Great Teacher and Leader, A Champion of ECD all over Africa and beyond. You passed the Zeal and Passion to those you taught and mentored (Liberia).

Bame was an inspiration for me as well. The pressure to conform to a Euro/North American view of child care and development is enormous, and even more for an individual born in and living in the Majority World³. The inducements: From grants to publication opportunities, travel to promotions, and the pressures to fall in line with the dominant discourse and set aside your own lived experience, your own truths, was for many in Bame's generation overwhelming (and, I fear, it continues to the present). I remember receiving a message from Bame in approximately 2010 while he was attending a child development conference in Europe, and feeling and sharing his rage and sorrow at being told “I think you have the wrong conference” as he spoke *his* truth to their power.

The fact that Bame would not be deterred from exploring his truth, his experience and research, and to

do all he could to share these “other perspectives” with colleagues around the world is a tremendous legacy. It speaks to a form of bravery that we in the academic world too often fail to appreciate and to eulogise. The academic world is far too often a haven for follow-ship, rather than leader-ship. The same can be said for the international organisations that, in the name of a singular “best”, ignore the myriad “goods” that lie within diversity, and which can open closeted discourses to possibilities outside their own constructions and understanding.

Bame and I were of similar minds when it came to the importance of diversity and the promotion of voices less heard. At one of the ECDVU seminars we began to outline a manuscript that we proposed to take to the Bernard van Leer Foundation (an early supporter of the ECDVU and a pioneer for ECD globally) for their Working Papers series in ECD. The manuscript was a critique of the emergence of a “global child”, and we began the manuscript with:

At one level, most individuals reading this essay appreciate that childhood is not the same across time or across cultural space. At another level, we participate in the promulgation of policies, practices, codes, and conventions that are not only acts of “imprint”, but are also acts of “erasure”, of standardisation and of assimilation. (Pence & Nsameng, 2008, p. 9)

This working paper became but one of several initiatives that Bame and I collaborated on over the years, and we worked with other Africa-focused colleagues who shared those values and concerns. In 2007/2008 Kofi Marfo, another long-standing friend, colleague and ECDVU Professor, received word that the prestigious Society for Research and Child Development (SRCDD, itself too often a key cog in the machinery of westernisation) was seeking to enhance its support for interdisciplinarity, cultural/contextual diversity, and international perspectives in the study of child development through funding four “small conferences”. In making our submission, we felt that it was important to make our concerns clear that African voices were not being heard in the international child development literature:

This project focuses on Africa because African voices – as contributions driven by unique African conceptions and realities – are woefully underrepresented in a global knowledge base dominated by Euro-American conceptions of child development and developmental inquiry... This is not simply an African problem; left unaddressed, the under-representation of perspectives from other cultures places profound limitations on claims about the existence of a global developmental science knowledge base. (Marfo & Pence, 2009)

Bame was on our shortlist for participation in this small, invited workshop; along with Robert Serpell, Robert and Sara Levine, Sarah Harkness and Charles Super – all key contributors to the African child development literature over time.⁴ As Robert, Bame, Kofi, and I were all actively involved in Africa, and shared a focus on African child development research and the growth of ECD policies, programs, and training; we co-organised a follow-up

African Scholars Workshop to take place in Africa in 2013 to which 23 African scholars from 15 SSA countries were invited.⁵ That workshop represented an important step in bringing together diverse African scholars (including Francophone and Lusophone scholars) to share ideas and challenges in seeking to have African child development and ECD voices heard both within and outside Africa.

At the first two (as well as the five subsequent African Scholars Workshops that took place in East, West, and Southern Africa), the issue of advancing an African ECD literature was paramount, and one underlying issue was that there was no place one could go to identify what had been produced. An opportunity to take on that challenge presented itself through an ECDVU collaboration with the Dar Es Salaam based Aga Khan University Institute for Educational Development (AKU-IED) that commenced in 2012/2013. With the support of a doctoral student at the University of Victoria, Emily Ashton (herself having a strong connection to ECD in Malawi), we undertook to advance the then two existing compendia focusing on ECD in SSA, each with less than 100 entries. With limited funds and time, we were able to compile an annotated list of 800 references and place them on a searchable database (Pence & Ashton, 2015, and see ecdinafrica.org).

SSA ECD Compendium: Early themes and issues

Having reached a suitable point in the development of the Compendium, we then set about reviewing it to determine what patterns we might find. The largest “early set” of African child development studies were associated with the work of John and Beatrice Whiting, leaders of Harvard University’s Laboratory of Human Development: “The premier training base in comparative child development from 1950 through the 1980s, and then beyond under the leadership of Robert LeVine, one of their former students” (Pope Edwards and Bloch, 2010, p. 485). An offshoot of the Whiting initiative was the establishment of the Child Development Research Unit (CDRU) at the University of Nairobi (and subsequently Kenyatta University). In 2010, Thomas Weisner reflected that a goal of the CDRU had been to support and teach Kenyan university students “so that they could become the next generation of social science researchers” (Weisner, 2010, p. 502). That specific goal proved elusive, but there were other rewards. Caroline Pope Edwards and Beatrice Whiting noted that Kenyan women researchers affiliated with the CDRU: “All now have professional careers” (Pope Edwards & Whiting, 2004, p. 8).

One of the key publications to emerge from the Africa work was LeVine, Dixon, LeVine, Richman, Leiderman, Keefer, and Brazelton’s *Child Care and Culture: Lessons from Africa* (1994). In his Foreword, Urie Bronfenbrenner noted: “This book is about cultural lessons from Africa and from the United States, and *what each culture can learn from the other...*” [emphasis added]. Throughout the volume one finds, from these non-African authors, a sensitivity to the importance of culture and context to child development. However, as the literature moves into the 21st Century, that sensitivity is less apparent in the non-African authored literature, but increasingly evident in the growing African authored literature.

A similar pattern emerges in the ECD literature, with an appreciation of strengths within Africa evident through, for example: (i) Dutch Foundation Bernard van Leer’s 1970’s support for local initiatives, including Harambee Preschool programs; (ii) Pence’s 1979 critique: *Child Care in Two Developing Countries: Kenya and the United States*; and (iii) the emphasis on the importance of local initiatives found in the Consultative Group on ECCD’s publications in the early decades of its leadership under founder Robert Myers (in 1984) and subsequent leader Judith Evans. Myers’ influential *The Twelve Who Survive* (1992) is replete with locally initiated, culturally sensitive exemplars of programs and practices. However, by the late 1990s and into the 2000s the number of publications advancing a hegemonic “West is best” orientation, particularly by non-African authors, was in the ascendancy. Fortunately, many of the non-Africans schooled in an earlier, more contextualised orientation continued to publish into the 2000s. Additionally, they were joined by an increasing number of African born and based authors – Bame Nsamenang being a key figure amongst them.

While Bame commenced his academic writing in the 1980s, it was his publication in 1992 – *Human Development in Cultural Context: A Third World Perspective* – that conveyed him broad recognition. Bame’s signature publication coincided with increasing visibility and support for ECD globally, which was in part the result of the 1989/1990 establishment of the Convention for Child Rights (CRC: United Nations, 1989) and the Education for All (EFA) initiative that adopted a “learning begins at birth” policy statement (UNESCO, 1990). These events, accompanied by a growing interest by economists internationally in studies indicating significant socio-economic cost-benefits that could be achieved through participation in ECD programs, began to bring ECD onto the international stage to a degree it had not experienced before.⁶

Accompanying that shift in the status of ECD on the international stage, were four internationally focused ECD handbooks published between 1989 and 1993. The earliest, edited by Olmsted and Weikart, brought with it an “economic message.” This was not surprising since David Weikart and colleagues at High Scope in Michigan were the originators of what might be called a “mantra” for the promotion of ECD globally: “for every \$1; spent, XX dollars saved.” Two other edited handbooks were published in 1992: One by Lamb, Sternberg, Hwang, and Broberg and a second by Canadians Woodill, Bernhard and Prochner. The 4th, under development at the same time as the others, but slowed by the inclusion of an authors’ workshop, was edited by Cochran and appeared in 1993.⁷

The Lamb and colleagues volume (1992) was organised somewhat differently than the other handbooks since it did not focus primarily on countries, but on geographic regions. Bame Nsamenang was the sole African contributor, but his chapter is followed by a contribution from Africanists Super and Harkness and a commentary by Serpell. The Woodill and colleagues (1992) handbook includes the largest number of African contributors, but it also has the shortest text for each country. This was in large part due to the vast amount of countries included (45

in total; with six from Africa: Botswana, Kenya, Liberia, Nigeria, Sudan, and Swaziland). The Cochran volume included two, fairly detailed country-report chapters from African authors: Kipkorir for Kenya and Chada for Zimbabwe.

The handbooks represent a rarely referenced, but potentially useful, historical glimpse at a relatively early stage of ECD development in SSA. As UNICEF, and more dramatically the World Bank (influenced by the mounting socio-economic arguments), began to more fully incorporate ECD in their development agendas; the landscape of ECD began to shift in certain parts of SSA. For example, 35.1 million US\$ was committed for ECD in Kenya for the period 1997–2002; and 40 million US\$ was committed for Ugandan Nutrition and ECD for the period 1998–2001. As ECD funding levels increased substantially, so too did the realisation that ECD capacity for policy, programming, training, and research “on the ground” was severely limited.

That realisation was a driving force for several key capacity building initiatives discussed at the beginning of this article: UNICEF supported ECD Seminars (1994–1998), which led to four African ECD Conferences (1999 through 2009, with key UN and International organisations’ funding support); and the launch of the continuing ECDVU capacity development leadership program in 2000/2001 (17 countries and 138 graduates by 2016) with funding from country-level and international-level supporters. The growth of ECD awareness across SSA is evidenced not only by the overall participant and country numbers attending the ECD Conference series, but 2005 and 2009 highlight a dramatic (and strategically driven) increase in participation by African political figures, as evidenced in Table 1.

Related to the growing size and impact of the ECD Conference series, UNESCO determined that by 2008 the number of SSA countries that had tabled ECD policies increased approximately 10-fold in ten years: from a couple in the late 1990s to 19 in 2008, with an additional 20 engaged in preparations (UNESCO BRED, 2012). A separate study looked at the degree to which post-secondary institutions in SSA were responding to growing political and professional support for ECD across SSA. Those results, analysed by regions and by language of instruction (Anglophone, Francophone, Lusophone),

provide insights into the chequered and multi-layered nature of ECD development within SSA (Pence & Fleury, 2014), as can be seen in Tables 2 A & B.

ECD policy development and tertiary education’s engagement with CD and ECD represented two important areas to assess regarding ECD capacity evolution in the 2000s. Another key measure of ECD capacity development was the growth of literature regarding ECD in SSA. As indicated earlier, addressing this absence of information was a key objective for the ECDVU as its contribution to a broader initiative with the AKU-IED that took place from 2013–2015. Analyses of entries within the SSA ECD Compendium provided basic descriptive data, such as a significant increase in the number of African-scholar published literature (particularly in the post-2005 period) (Figure 3A) and numbers across other categories such as country (Figure 3B).

In addition, the Compendium provided the opportunity to identify key themes within the evolving SSA literature in the 2000s. Consistent with the increase in the number of ECD policies established in SSA countries post-2000 (see UNESCO BRED, 2012), the literature sees a major increase in the number of country-specific historical reviews with a focus on current policy issues. A sample of the countries include (with one reference example from each): Kenya (Nganga, 2009), Tanzania (Mtahabwa, 2009), Uganda (Ejuu, 2012b), Nigeria (Oduolowu, 2009), Botswana (Bose, 2008), Ghana (Agbenyega, 2008), Malawi (Kholowa, & Maluwa-Bandam, 2008), Zambia (Banda, 2008), and Zimbabwe (Moyo, Wadesango, & Kikdyurebwa, 2012). While this listing is not exhaustive, it conveys the popularity of the topic. The focus of these articles is captured by Ifakachukwu (2011) as a “yawning gap between policy formulation and implementation” (p. 30). The number of these histories and critiques of gaps between ECD “promise and provision” represents a wave of African-led literature that had not been seen before in the SSA-ECD literature – a wave felt across West, East, and Southern Africa.

These critiques are complementary to and have helped build a substantial critical ECD literature in SSA – a literature enabled by Bame Nsamenang’s work, but which has other influences both within and outside Africa. Two prolific “next-generation” African authors, whose critical writing arises from quite different countries and sets of

Table 1. African ECD conference series, 1999–2009

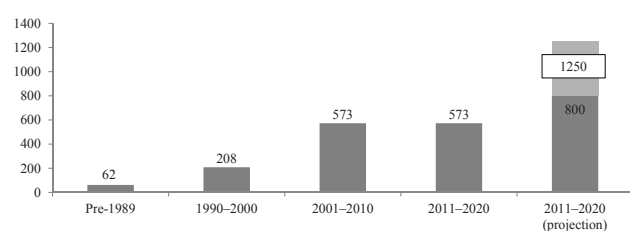
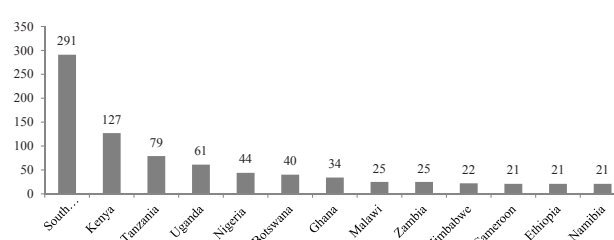
Conference location & theme	Date	# of attendees	# of SSA countries	# of presenters	African based participation	African government representation
Kampala, Uganda Showcasing ECCD: <i>Innovation and Application in Africa</i>	1999	200	19	35	75%	3 national ministers
Asmara, Eritrea <i>Health, Nutrition, Early Childhood Care and Education, and Children in Need of Special Protection</i>	2002	200	28	60	80%	6 national ministers and 1 international minister
Accra, Ghana <i>Moving Early Childhood Forward in Africa</i>	2005	300	39	80	85%	6 national ministers and 27 international ministers or reps
Dakar, Senegal <i>From Policy to Action: Expanding Investment in ECD for Sustainable Development</i>	2009	600	42	146	89%	35 national ministers and 113 international ministers or reps

Tables 2 A & B. ECD/ECE programmes offered by SSA tertiary education institutions**2A.** Survey responses by region

Region	ECD / ECD Programmes				
	In place	Planned	Courses only	Unknown	Total
East & Southern Africa	11	5	2	0	18
West & Central Africa	5	3	6	5	19
TOTALS	16	8	8	5	37

2B. Survey responses by language

Language	ECD / ECD Programmes				
	In place	Planned	Courses only	Unknown	Total
Anglophone	13	5	4	0	22
Francophone	1	2	4	5	12
Lusophone	2	1	0	0	3
TOTALS	16	8	8	5	37

**1A.** Increases in African-led, ECD Publications**1B.** Publication numbers by top countries**Figures 1A & B.** SSA ECD Compendium: Emergent themes post-2000

Note. Compendium numbers by country

Some (< 20): Eritrea, Lesotho, Mali, Gambia, Mauritius, Mozambique, Swaziland, Senegal, Sudan

Fewest (< 3): Angola, Benin, Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, Congo, Côte d'Ivoire, D. R. Congo, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Liberia, Madagascar, Niger, Rwanda, Sao Tome and Principe, Seychelles, Sierra Leone, South Sudan, Togo

experience, are Professors Hasina Banu Ebrahim of South Africa and Godfrey Ejuu of Uganda. Their works, Ejuu (2012a, 2012b, 2013) and Ebrahim (2011a, 2011b, 2012a, 2012b), provide a melding of African influenced concerns and critiques with the international critical literature. A somewhat different melding of African with international sources is a volume influenced by increasingly strong, Indigenous ECD work from various parts of the world. Entitled *Indigenous Early Childhood Care and Education (IECCE) Curriculum Framework for Africa: A Focus on Context and Contents*, this edited volume features African authors from across generations (Awopegba, Oduolowu, & Nsamenang, 2013).

It is useful to note that the growing body of Africa-focused ECD research literature noted above, generated primarily by *African* authors, is consistent with the information noted earlier about expanding policy development within SSA and expanding ECD tertiary education opportunities. However, those realities “on the ground”, are *not* reflected to the same degree by the ECD literature produced by SSA-*external*, non-Africans, which often follow priorities established outside of Africa. .

This “insider/outsider” difference is a useful dynamic to bear in mind in considering the evolution of ECD and the ECD literature in Africa, and indeed across much of the rest of the Majority World. As discussed earlier, that

gap was narrower in the earlier CD and ECD literature of the 1950s through 1970s when there was a greater sense of “learning from each other”, rather than a drive to “teach the other”. An example of one such difference, a research and learning opportunity lost, was a failure by Western researchers to overcome their socio-cultural bias towards a narrow, *maternal* focus on issues of attachment, to explore the role of “others than mothers” in children’s development which Weisner and Gallimore provided in 1967 with their thoughtful consideration of the role of *child* care-providers in their article “My Brother’s Keeper”. This is but one example among many around the world where Western bias has been a blinder, and it is only through the vision of “the other” that one can see more fully.

Conclusion: Seeking staying power

As we know from Nsamenang’s work, for over a quarter century there has been push-back against the hegemony of Western concepts and knowledge – not denying its value, but seeking to expand CD and ECD knowledge beyond the limitations of the Western canon and vision. That stream, a critical perspective, is now significantly growing both within Africa and globally. Perhaps it is here that Bame’s example of leadership can be best employed – not seeking simply to emulate the West, to accept the treats

and inducements on offer, but to put forward Africa on its own terms and from an African perspective. We have ample evidence of the challenges African scholars have faced in being accepted in the social sciences literature. For example, in a 2008 article Arnett analysed six “premier APA journals...chosen to represent diverse areas of psychology...” (p. 603), which were then grouped by region, including Africa: “Out of 2 531 articles none had an African first author” (p. 605).

Such a finding is alarming – it speaks to a state of colonisation that persists over 140 years since the partitioning of Africa by European nations at the Congress of Berlin and over 60 years since “de-colonisation” was on the lips of Africans and Europeans alike. These figures, sourced from the influential and formative academic literature, are a critical reminder of Steve Biko’s words that “the most potent weapon in the hands of the oppressor is the mind of the oppressed” – a point not lost on diverse practitioners of hegemony. When one considers that by 2050 it is projected that 40% of the world’s children will live in Africa (UNICEF, 2014), these inconvenient statistics open a plethora of development challenges that extend from individual, to state, to regional, and global levels. At the very least, African voices must play a key part in addressing these challenges, and *much* must be done to ensure that is accomplished.

A fitting tribute to the legacy of Bame Nsamenang would be for those numerous donors and UN organisations who identify the health and well-being of Africa’s children as a top priority, to work together to create complementary, interactive Centres of Excellence for Children across Africa. Such South-South Centres (but with North involvement as determined by the Centres) could each specialise in certain aspects of child well-being while linking its own expertise with the broader network of SSA Centres. Ideally, each Centre would provide not only doctoral, but post-doctoral support as well with linkages to research and educational opportunities at sister institutions.

Such educational opportunities would be intended to help address the power imbalances that are centuries-old between the West and Africa. These imbalances require efforts to stay that power in order to have other voices be heard, other ideas pursued, other possibilities imagined – not only in support of nurturing an African base of expertise and knowledge, but in providing benefit to the world more broadly whose claims for “universals” ring hollow in knowledge landscapes bereft of “the local” and “the other”...

Bame was a pioneer in this ECD/CD landscape – one who sought to stay such discrepant power imbalances, to add to, not take away. While his stay with us was too short, perhaps it was long enough to create a staying power that will ensure African scholars’ voices are heard globally and that they will become significant for the future of Africa’s, and the world’s, children.

Endnotes

- 1 Details of the ECDVU program and its philosophical approach can be found at Pence & Marfo, 2004; Pence & Benner, 2015; and at www.ecdinafrica.org.
- 2 The completion rate across all five ECDVU deliveries (2–5

were one-year programs) was over 94%.

- 3 Using the terms ‘majority world’ (for the developing world) and ‘minority world’ (for the developed world) reminds us that most people in the world live in the economically poorer continents of the world.
- 4 In order to share ideas regarding capacity development from other parts of the world Robert Myers and Cigdem Kaigicibasi also participated.
- 5 A somewhat smaller, primarily East Africa Scholars and Institutions Workshop was piggy-backed onto the first African ISSBD international meeting held in Zambia in 2010.
- 6 The neo-liberal economic agenda used as a key support for ECD internationally, was then and continues to be today, challenged within the ECE/ECD community – for example see Kjørholt & Penn, 2018.
- 7 As a contributor to the volume and a co-organiser of the workshop, the event, held over a week at a retreat facility in Sweden, provided added value for the 27 authors who attended, and material for the framework developed by Cochran included in the publication.

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BOOK REVIEW

Handbook of Applied Developmental Science in Sub-Saharan Africa. Edited by Amina Abubakar and Fons J.R. van de Vijver (2017). New York: Springer. <https://doi.org/10.1007/978-1-4939-7328-6>

In the last decade or two, scholars have questioned the universality of models and theories of human development which have been largely influenced by western culture in which psychology as a developmental science has been historically rooted (Nsamenang, 2007). Such an orientation has been seen as not having adequately accommodated differences in behaviours and socioecological influences across a wide variety of settings and cultures (Nsamenang, 2000; Pence & Nsamenang, 2008). Consideration of such differences as related to Africa, especially Sub-Saharan Africa, has been seen as particularly neglected in mainstream psychology (Nsamenang, 2005). This book represents a growing effort by African psychologists, or researchers conducting studies in Africa, to illustrate how African based knowledge of human development can contribute to psychology.

The book is divided into 20 chapters across six parts which cover social-cultural and biomedical influences on child development, intervention strategies, methodological considerations, and the links between research, policy, and practice. The first part of the book is an introductory chapter which provides a rationale for the book, outlines the theoretical and conceptual issues guiding the book, and summarises the chapters in the book. This part, in addition to providing the reader with a brief overview of the book, makes a strong case for the contribution of African psychology to the discipline as a whole. In this part of the book, various features of relevant African contexts that have implications for psychological functioning are flagged.

The second part of the handbook is divided into five chapters that discuss the role of psychosocial factors in shaping child development. The first chapter by Bornstein and colleagues, presents data from more than 14 African countries using the Multiple Indicator Cluster Survey (MICS). This survey examines protective and risk factors of child development, and describes the contemporary situation of children in sub-Saharan Africa focusing on child growth, the home environment, parenting, and discipline. The strength of the chapter is its use of population-based data to provide results from a national representative sample, and drawing some policy implications from these findings. The second chapter by Kitsao-Wekulo and colleagues, focuses on the quality and quantity of stimulation in the home. A study involving school-aged children in Kenya, provides a detailed description of the home environment and examines its role in promoting cognitive and motor functioning in middle childhood. The findings that a stimulating home

environment (where the child is exposed to a variety of toys, learning materials, and experiences, contributes positively to child development), are consistent with what has been reported from other parts of the world. In the third chapter, Otto and Keller illustrate the cultural features of early socioemotional development in children, identifying the cultural models of autonomy and relatedness as a conceptual framework to explain different belief and meaning systems shared by different cultural groups. Cameroonian Nso parental beliefs, parenting practices, and their children's formation of attachment relationships are examined and compared with those from middle-class German families. Otto and Keller conclude that the Nso families are more oriented toward relatedness, to which their early parenting behaviour is more aimed at fostering. This is contrasted with middle-class Western families' orientation toward psychological autonomy in their socialisation goals, caregiving strategies, and resulting attachment patterns. The fourth chapter by Abubakar and colleagues, reviews data available on fatherhood in Africa, and supplement this with original data on the role of fathers from a rural setting in Kenya. The last chapter by Mweru addresses sibling relationships and its implications for the cognitive, social, and emotional development of children; using data from work in Kenya. Notable in this section, overall, is the discussion of the role of parenting behaviours in the home environment, and of alternative caregivers, especially siblings and fathers. This gives due consideration to the specific caregiving context of Africa and subsequent developmental outcomes.

Part 3 focuses on biomedical influences on child development. It presents four chapters highlighting developmental problems associated with various medical conditions in Africa. Abubakar's chapter first reviews the neurocognitive, mental health, and educational problems associated with infectious diseases. Malaria and HIV are identified as two common infectious conditions associated with cognitive deficits while also discussing potential moderators and mediators. Additionally, the chapter reviews the impact of less well-known or studied conditions such as meningitis, neonatal sepsis, and jaundice. This review indicates the deleterious effects of different infectious diseases on neurocognitive, mental, and education outcomes of children. The point is made that biomedical and psychosocial risk factors often interact to exacerbate the negative impact of different medical conditions, and as such interventions need to be informed by both biomedical and psychosocial models. The second chapter in this section by Nampijja looks at the cognitive effects of helminth infections on child development. It reviews the literature on the cognitive impact of worm infection and deworming and presents data from a large-scale study which investigated the impact of deworming on cognitive development. The study suggested that cognitive and executive functions may be especially vulnerable to the negative effects of parasitic infections. The third chapter in this section, by Hapunda and Pouwer,

reviews the effects of diabetes, raising awareness of its epidemiology and psychosocial consequences. This is an increasingly important, yet understudied problem in sub-Saharan Africa, where non-communicable diseases, in comparison to communicable diseases, receive relatively less attention. The last chapter by Gladstone, highlights the impact of malnutrition on child development. Biological mechanisms by which malnutrition impacts on child development are discussed, focusing on neurocognitive and neurodevelopmental effects identified from studies largely carried out in Sub-Saharan Africa.

The fourth part in this book addresses methodological considerations for studies in Sub-Saharan Africa. The first chapter by Abubakar and Van de Vijver discusses approaches to developing tests and scales for use in Africa. A systematic procedure is presented, that can be used to carry out different processes including adoption, adaptation, or assembly of tests alongside approaches for evaluating the level of success in providing an adequate measure for the context. The second chapter by Demuth discusses the potential contribution of qualitative research to applied developmental science in Sub-Saharan Africa. It is argued that qualitative methodologies, particularly ethnographically informed discourse analysis, provide empirical procedures that allow for the development of a culture-sensitive developmental science. The third chapter is by Foxcroft who discusses ethical issues around child development research in Sub-Saharan Africa. It is argued that while some of the ethical challenges experienced in Africa are common in child development research internationally, some have a uniquely developing world or African dimension to them. The fourth, and last chapter of this section is by Nsamenang, who raises issues and challenges pertaining to research in Africa in the context of dominant Euro-American intellectual traditions and scientific ethos. The chapter argues for development of theories and methodologies that are rooted in and applicable to Africa.

Part 5 focuses on intervention strategies and presents five chapters on various state-of-the-art strategies; mostly developed elsewhere, but that have been found to hold great promise in improving developmental outcomes of children in sub-Saharan Africa. In the first chapter, Novak and colleagues discuss the development and initial field trial of a prototype computerised cognitive rehabilitation training program developed by Michigan State University's Games for Entertainment and Learning Lab. The second chapter by Klein and colleagues describe the process of a Mediation Intervention for Sensitizing Caregivers (MISC). This is primarily concerned with enhancing parents' or caregiver's ability to provide infants and young children with quality interaction, thereby affecting their future learning. The chapter presents the rationale, processes of intervention, and outcomes of the intervention. This is done with a focus on its implementation in Ethiopia, Uganda, and Kenya and its potential relevance for other countries in Africa. The third chapter in this section is by Serpell and colleagues who present a 4-year research and development program at the Centre for Promotion of Literacy in Sub-Saharan Africa (CAPOLSA). CAPOLSA is aimed at enhancing literacy

levels among Zambian children. As part of overall efforts at enhancing literacy, they provide a detailed discussion of the process of culturally adapting and evaluating a computer-mediated instructional resource developed in Finland, for intervention in an African setting. The fourth chapter by Mpofu and colleagues discusses community-based rehabilitation (CBR) as a human development framework for children, especially those with disabilities. It is argued that CBR remains the most viable instrument for human development support in the Sub-Saharan African region. The last chapter in this section is by Friedlander and colleagues, who use data from some schools in Sub-Saharan Africa to describe and discuss how Literacy Boost, a program based on findings from the mainly developed world literature, functions with a positive impact when it is placed in the Sub-Saharan African context.

Part 6 concludes the handbook with a single chapter by Theron, who advocates using research evidence to inform policy and practice. Theron argues that in resource-constrained settings such as those in Sub-Saharan Africa, researchers should apply credible research results toward enabling improved life-worlds, for children and young people. Drawing on previous work with the Pathways to Resilience Study, South Africa; Theron demonstrates how researcher-community collaborations can support policy and implementation of research results.

In all, this is a very useful handbook for developmental scientists, students, policy makers, and practitioners. The book contributes to the development of African Psychology by illustrating the link between various aspects of the African context and general and psychological development, and covering a wide range of African-based research. Methodological considerations in making such links between context and psychological functioning, and state-of-the-art strategies for maximising the developmental potential of children in Sub-Saharan Africa are carefully illustrated and discussed, together with some policy and practical implications. A great strength of the book is the highlighting of some features of African contexts that have significant impact on child development but have received little attention in "mainstream" psychology. In this way, the book goes some way in addressing the underrepresentation of African research and findings in developmental science. The book also demonstrates how African Psychology itself can be enriched by psychologists and findings from other parts of the world as reflected in both the composition of contributors and some of the work cited.

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Pathways to flourishing among pharmacy students: The role of study demands and lecturer support

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This study investigated possible pathways to flourishing among pharmacy students attending a South African university ($N = 799$; females = 81.6%; Afrikaans-speakers = 84.7%, mean age = 20.42 years, $SD = 2.25$ years). The students completed the Mental Health Continuum – Short Form (MHC-SF) and an Overload and Lecturer Support Survey. Of the 779 pharmacy students, 40.3% self-reported as flourishing, with high mean scores on workload and lecturer support. The level of emotional well-being of year group 2 was the highest. Following structural equation modelling, overload and lecturer support explained between 18% and 31% of the variance in the flourishing of the different year groups. From the second to the third year, the predictive value of overload and lecturer support for flourishing decreased by 8.8%. Lecturer support and low overload appear to play a positive role in the flourishing of higher education students.

Keywords: demands, lecturers, flourishing, pathway, resources

Introduction

The study course (or study major) may influence higher education students' well-being in unknown ways. Moreover, whether university students flourish or languish from their studies may depend on their self-perceived personal assets (Canales-Gonzales & Kranz, 2008; Ford, Olotu, Thach, Roberts, & Davis, 2014), their perceptions of workload, and/or the support they receive from the lecturers (Mokgele & Rothmann, 2014). Keyes (2002) operationalised human well-being on a continuum from flourishing to languishing that included hedonic as well as eudaemonic components.

Flourishing individuals perform well (Datu, 2018; Diener & Ryan, 2009), are actively involved in society (Keyes, 2002), and are adept at handling the pressures of academic (Datu, 2018; Keyes et al., 2012) and social life (Potgieter & Botha, 2014). By contrast, languishing individuals experience emptiness, stagnation, and despair (Keyes, 2002). Students in science, technology, engineering, and mathematics fields (STEM), like pharmacy students, experience high workloads (Sithole et al., 2017). Laboratories and research take most of the student's time, reduce the time for study and social activities, and cause students to overwork (Hershner & Chervin, 2014). Their success may depend on personal fortitude as well as level of support by lecturers. We are not aware of any studies that examined flourishing, considering perceived course demands and lecturer support, among university students studying in pharmacy. We aimed to explore flourishing among pharmacy students considering their perceptions of workload and lecturer support (Sithole et al., 2017).

Flourishing and languishing among university students

Individuals flourish when they are emotionally, psychologically, and socially well (Keyes, 2002). Emotional well-being (the hedonic component) refers to "feeling good". Psychological and social well-being refer to "functioning well" (the eudaemonic component). The

following three aspects indicate emotional well-being: the presence of positive affect, absence of negative affect, and perceived satisfaction with life. A person who is socially well is socially coherent, actualised, integrated, accepted, and contributes socially. Psychological well-being is indicated by self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy (Keyes, 2005). Flourishing has benefits for a person, society, and the workplace. Flourishing (high mental health) is associated with superior psychological functioning. Flourishing adults report the fewest days absent from work, the fewest health limitations in daily living activities, and the healthiest psychosocial functioning. As such, they are low helplessness, have clear life goals, have high resilience, and have high intimacy (Keyes, 2005, 2007). Flourishing students are expected to actively participate in activities, to be positive, and to excel in academic activities (Datu, 2018).

Languishing (a term used as opposite for flourishing) individuals may experience more dysfunctions than persons with mental illness do. Gains in mental health predict declines in mental illness, and losses in mental health predict gains in mental illness (Keyes, Dhingra, & Simoes, 2010). Not all changes in mental well-being can be explained by demographic variables, physical ailments, mental illnesses, or chronic conditions (Snowden, Dhingra, Keyes, & Anderson, 2010). Therefore, it is necessary to study the effects of demands and resources associated with the study environment, such as workload and support from the lecturer on students' well-being.

Pathways to flourishing: The role of demands and resources

Among college students, support from lecturers may enable them to deal with course demands, leading to personal growth and goal attainment. Two processes are involved in the student demands-resources (S-DR) model (Mokgele & Rothmann, 2014); namely, an energetic process and a motivational process. In the first process,

constant demands can exhaust a student's mental and physical resources and result in the depletion of energy and, ultimately, health problems (Demerouti, Bakker, de Jonge, Janssen, & Schaufeli, 2001). When students view challenges as hindrance demands, their well-being is not enhanced using resources (Tadić, Bakker, & Oerlemans, 2015). In the motivational process, resources may lead to motivation and a fulfilling, positive state of mind.

Coursework demands may trigger a reduction in energy, which could result in fewer mental resources to perceive available resources in the study environment. Resources can be threatened, lost, or invested with no resultant gain. Examples include a loss of self-esteem due to poor performance, a loss of time to complete an assignment, and spending time preparing for the pharmacology examination, but not seeing an improvement in results. When a student has adequate resources, for example, time, the demands (such as examinations) are experienced as less taxing, and the student will cope successfully (Hobfoll, 2002). However, supportive relationships with lecturers play a crucial role in the energy and motivation of students. In the world of a student, the lecturer is in a prime position to act as a resource, for example, by focusing the student's attention on important information or by giving feedback. A lack of resources or opportunities compromises a student's mental health (Keyes, Smothkin, & Ryff, 2002). In the case of high challenge demands, resources contribute to well-being (Tadić et al., 2015). Resources can be an excellent basis for flourishing and optimal functioning.

Additionally, how students perceive their relationship with lecturers impacts their perception of their workload (Xerri, Radford, & Shacklock, 2018). Furthermore, as a resource, lecturers can play an active role in the prevention of students' languishing and the promotion of their flourishing (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Flourishing among South African university students

Only one study (Van Zyl & Rothmann, 2012) was found that focused on the flourishing of South African students. Van Zyl and Rothmann (2012) reported that flourishing and languishing are related to the academic performance and non-performance of students. In a study related to flourishing, Mokgele and Rothmann (2014) found that study demands and a lack of study resources (including the intrinsic nature of study tasks, relationships with lecturers, and social support of peers) were associated with the reduced well-being of students. Kotzé and Kleynhans (2013) reported that spiritual anchors and continuous cognitive and emotional involvement in academic work are valuable resources to students in their academic performance. Rugira, Nienaber, and Wissing (2013) studied the well-being of students in Tanzania but did not focus on demands and resources linked to their flourishing or languishing. However, none of these studies focused on pharmacy students and considering perceived overload and lecturer support.

Pharmacy studies

In South Africa, pharmacists practice and pharmacy education embrace the challenges that are associated with the World Health Organization's concept of a seven-star pharmacist (Thamby & Subramani, 2014). Additionally, pharmacy education in South Africa must embrace the implications of Universal Health Coverage and the current National Health Insurance (NHI) (Department of Health, 2017). Therefore, pharmacy education, which takes place at nine higher education institutions in South Africa, must re-align to address the health needs of the country (Bheekie & Bradley, 2016; Summers et al., 2001). The pharmacy education programme at the institution where the research is conducted has five major subject areas. Accordingly, pharmacy students have five major subjects in their fourth year. Four of these subject areas include compulsory practical sessions, which result in very few periods that students are not being engaged in class. Therefore, pharmacy students face a high workload and limited time to deal with study demands.

Goal of the study

This study aimed to investigate flourishing among pharmacy students studying at a South African University. Our question of interest was whether pharmacy students flourish in their studies and how that relates to overload and lecturer support through task structuring.

Method

Participants and setting

The institution where this study was conducted has the largest pharmacy school in South Africa. All the registered pharmacy students in 2014 at the institution ($N = 899$) in academic years 1 to 4 were invited to participate. A total of 779 in four academic year groups participated in the study: First year $n = 204$; Second year $n = 210$; Third year $n = 203$; and Fourth year $n = 162$. Concerning the ratio of academic year versus historic year; 92.15%, 72.38%, 73.39% and 69.13% of the students in academic year 1, 2, 3, and 4 respectively were also in their first, second, third and fourth historic year. A total of 8.72% of the students found themselves in historic year 5, 6, and 7. Furthermore, 80.88% of the latter group of participants were in their third or fourth academic year. The average age of participants was 20.42 (SD = 2.25, range = 17 to 38 years). A total of 81.6% of the participants were females, while 18.4% were male. In terms of language, 84.7%, 14.4% and 0.9% of the participants indicated their language as Afrikaans, English and other languages, respectively.

Measuring instruments

The participants completed the Mental Health Continuum – Short Form (MHC-SF; Keyes, 2009) and Demands and Resources Survey (DRS; Basson, 2015). They also completed a demographic questionnaire.

Mental Health Continuum – Short Form

The MHC-SF consists of 14 items that assess positive mental health in terms of emotional, social, and psychological dimensions. The three-factor structure of mental health has been confirmed (Franken, Lamers,

Ten Klooster, Bohlmeijer, & Westerhof, 2018; Lamers, Westerhof, Bohlmeijer, Ten Klooster, & Keyes, 2011).

The first dimension is emotional well-being (EWB), consisting of three items, for example, "During the past month, how often did you feel interested in life?" The second dimension is social well-being (SWB), consisting of five items, for example, "During the past month, how often did you feel that you had something important to contribute to society?" and "During the past month, how often did you feel that people were basically good?" The last dimension is psychological well-being (PWB), consisting of six items, for example, "How often did you feel that you liked most parts of your personality?" and "How often did you feel that your life had a sense of direction or meaning to it?"

The MHC-SF was shown to be internally reliable, with $\alpha = 0.89$ for the total MHC-SF, $\alpha = 0.83$ for the subscale EWB, and $\alpha = 0.74$ for the subscale SWB (Lamers et al., 2011). The convergent validity of the MHC-SF was also demonstrated. Various corresponding measures of well-being were used. Examples are the Satisfaction with Life Scale for EWB, positive affect for PWB, and social engagement for SWB. A study carried out in South Africa among native language speakers also confirmed the MHC-SF as reliable and valid (Keyes et al., 2008). The internal consistencies of the three subscales – EWB, SWB, and PWB – were 0.74, 0.59, and 0.67, respectively. In a study among employees in South Africa, the scores from the MHC-SF achieved internal consistencies of 0.87, 0.86, and 0.82 for EWB, PWB, and SWB, respectively (Diedericks & Rothmann, 2013). The reliabilities of the three scales of the MHC-SF were 0.83 (EWB), 0.80 (SWB) and 0.86 (PWB).

Demands and Resources Survey

The DRS (Basson, 2015) comprises three statements that were developed for this study: "The workload in some of the subjects is too much", "My studies take up so much time that I do not have time to relax", and "During the semester, I feel physically drained at the end of the day". The support of lecturers was investigated by means of four statements: "My lecturers provide accurate, performance-related feedback", "My lecturers involve me in skills development and/or problem-solving", "My lecturers regard failure as part of the learning process", and "My lecturers emphasise the fact that students are responsible for their own results". The participants had to rate each statement on a scale from 1 = no agreement, to 5 = much agreement. In this study, the reliabilities of the workload and lecturer support scales were 0.77 and 0.70 respectively.

Procedure

The Ethics Subcommittee for Social and Behavioural Sciences of the Faculty of Humanities, North-West University granted ethical clearance (FH-SB-2013-0008). The survey design was Internet-based. Students were asked to gather in a computer lecture room, where the Internet access code was given to them. Participation was voluntary, and informed consent was obtained from the participants.

Data analysis

The data were analysed using Mplus version 7.3 (Muthén & Muthén, 1998-2014) and SPSS version 22 (IBM Corp, 2013). The items of the questionnaires were defined as categorical (when applicable), and weighted least squares with corrections to means and variances (WLSMV) was used as an estimator. To assess the fit of measurement and structural models, the following indexes and values were utilised: The comparative fit index (CFI; >0.95); the Tucker-Lewis index (TLI; >0.95); and the root mean square error of approximation (RMSEA; close to 0.06) (Hu & Bentler, 1999). Furthermore, a non-significant chi-square value, as well as the smaller AIC and BIC values, and weighted root mean residual (WRMR) close to 1 indicated better fit. Chi-square difference testing was used to compare the models that investigated configural, metric, and scalar invariance between the unconstrained model and the configural, metric, and scalar models, respectively. Descriptive statistics and correlations were used to explore the data. The reliabilities of the scales were computed. Reliability reflects a measure of the scale reliability of the construct or latent variable (Raykov, 2012). In the structural model, flourishing was regressed on workload and lecturer support. The moderation effect of lecturer support on the relation between workload and flourishing was computed and plotted with Mplus 7.3 with software developed by Stride (2015).

Results

Flourishing

The response rate was 86.7%. Concerning gender, 46.7% of the 143 males flourished, while 52.4% was indicated as moderately mentally healthy. Of the 636 female students, 3.3% languished, 58.0% were moderately mentally healthy, and 38.7% flourished. Table 1 indicates the levels of flourishing according to a student's academic year as well as historic year. Academic year refers to the four-year BPharm degree; while historic year is an indication of years as a student. To flourish, a student had to feel one of the three hedonic well-being symptoms and six of the 11 positive functioning symptoms "every day" or "almost every day" in the past month. A student was categorised as languishing when he or she felt one of the three hedonic well-being symptoms and six of the 11 positive functioning symptoms "never" or "once or twice" in the past month. Moderately mentally healthy students were those who were neither "flourishing" nor "languishing" (Keyes, 2009).

From Table 1, it is evident that flourishing varied between 35.8% and 44.3% for the academic year groups. Flourishing among the students (academic year groups) was the highest in their second year and the lowest in their fourth year.

Measurement models

We tested five measurement models; namely, models A, B, C, D, and E. Model A consisted of five latent variables: emotional, psychological, and social well-being measured by three, six, and five observed variables, respectively; overload measured by three observed variables; and lecturer support measured by four observed variables.

Model B consisted of three latent variables: flourishing, overload, and lecturer support. Flourishing was measured by three latent variables; namely, emotional, psychological, and social well-being, which were measured by three, six, and five observed variables, respectively. Three observed variables measured overload, and four observed variables measured lecturer support. Model C was structured with three latent variables: flourishing (measured by 14 observed variables), overload (measured by three observed variables), and lecturer support (measured by four observed variables). Model D had two latent variables; namely, flourishing (determined similarly to model B, with three latent variables: emotional, social, and psychological well-being) and demands (consisting of the manifest variables of lecturer support and the manifest variables of overload). Model E consisted of one latent variable; namely, flourishing, which was measured by 21 observed variables. The fit statistics for the measurement models are presented in Table 2.

Based on the goodness-of-fit indexes as discussed in the section on data analysis, both model A (a five-factor model) and model B (a three-factor model) fitted the data satisfactorily. Based on a CFI = 0.96, TLI = 0.95, $\chi^2 = 790.57$, and RMSEA = 0.07, model B (consisting of the factors flourishing, overload, and lecturer support) fitted the data slightly better than model A.

Measurement invariance and latent mean differences

We tested for measurement invariance of the best-fitting model for students in the four year groups. We wanted to determine whether the scales were invariant for students in the different year groups so that we could compare the mean scores of the different year groups. We tested for three types of invariance; namely, configural, metric, and scalar (Cheung & Rensvold, 2002). Configural invariance indicates whether the students belonging to the different year groups conceptualised the constructs similarly. Metric invariance means that all factor loading parameters were the same across the year groups. Scalar invariance indicates whether the measurement scales had the same operational definition for the four year groups of pharmacy students. Latent mean scores on constructs can only be compared when configural, metric, and scalar invariance exist (Wang & Wang, 2012).

We tested the measurement invariance of the best-fitting measurement model for students in the four year groups using Mplus 7.3 (see Table 3).

Table 3 indicates that no statistically significant changes in χ^2 values were found when configural, metric, and scalar invariance were tested. Given that no statistically significant changes in χ^2 value were found, we proceeded to compare latent mean differences among students in different year groups (see Table 4).

Table 1. Mental health of students

	Languishing		Moderately mentally healthy		Flourishing	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
<i>Year group (n)</i>						
Total (779)	21	2.7	444	57.0	314	40.3
<i>Academic year</i>						
Year 1 (204)	7	3.4	111	54.4	86	42.2
Year 2 (210)	5	2.4	112	53.3	93	44.3
Year 3 (203)	4	2.0	122	60.1	77	37.9
Year 4 (162)	5	3.1	99	61.1	58	35.8
<i>Historic year (n)</i>						
Year 1 (207)	6	2.9	119	57.5	82	39.6
Year 2 (172)	4	2.3	84	48.8	84	48.8
Year 3 (181)	5	2.8	107	59.1	69	38.1
Year 4 (151)	4	2.6	92	60.9	55	36.4
Year 5 (49)	2	4.1	33	67.3	14	28.6
Year 6 (12)	0	0	6	50	6	50
Year 7 (7)	0	0	3	42.9	4	57.1

Table 2. Fit statistics for measurement models

	Model A	Model B	Model C	Model D	Model E
Free parameters	129	125	122	123	119
AIC	41 406.92	41 495.98	41 459.25	41 706.99	42 860.03
BIC	42 007.80	42 078.24	42 008.89	42 261.30	43 414.33
χ^2	823.75*	790.57*	1 325.09*	1 568.98*	4 794.90*
df	179	183	186	185	189
RMSEA	0.07**	0.07**	0.09**	0.10**	0.18**
90% CI	0.063–0.073	0.061–0.070	0.084–0.093	0.094–0.103	0.173–0.181
CFI	0.95	0.96	0.92	0.90	0.67
TLI	0.95	0.95	0.91	0.89	0.64
WRMR	1.44	1.46	1.94	2.32	3.77

Note. * $p < 0.000$, ** probability RMSEA ≤ 0.05

Year group 2 had the highest level of EWB. The average level of EWB of year group 2 was between 0.21 and 0.25, statistically significantly higher than the average levels of EWB of the other year groups. The average level of PWB of year group 2 was statistically significantly higher than that of year group 4. The average level of SWB of year group 2 was statistically significantly higher than the average level of SWB of year group 3. The students' perception of lecturer support declined from the first to the fourth year; with statistically significant differences among all the year groups, except for the third and fourth year. The students' report of the average level of overload increased from the first to the fourth year. The increase was statistically significant from year group 1 to year groups 3 and 4, respectively, as well as from year group 2 to year groups 3 and 4. The largest statistically significant increase was 0.35 ($p < 0.000$) from year group 1 to year group 4.

The reliabilities of the latent variables were as follows: 0.83 (EWB), 0.86 (PWB), 0.81 (SWB), 0.72 (lecturer support), and 0.78 (overload). These values were all greater than 0.70, which meant that they were acceptable values (Wang & Wang, 2012).

Structural model

In line with the aims of this study, the differences in latent mean scores for overload, lecturer support, and flourishing were computed in Mplus 7.3. In the structural model, flourishing was regressed on overload and lecturer support. We determined whether there were differences between a

model with no interaction between overload and lecturer support, and a model where overload and lecturer support interacted. We used Wald tests to determine whether the regression coefficients of overload and lecturer support differed among year groups. We computed and plotted the moderation effect of workload on flourishing at different levels of lecturer support.

Concerning the prediction of flourishing, the regression coefficients of overload ($\beta = -0.32, p < 0.000$) and lecturer support ($\beta = 0.32, p < 0.000$) were statistically significant and had the expected signs. Overload had a negative relation with flourishing, while lecturer support had a positive relation with flourishing. The WLSMV-estimated equation accounted for 24% of the variance in flourishing ($R^2 = 0.24$).

Next, the interaction effects between overload and lecturer support on flourishing were computed for each year group. Table 5 indicates the results of the models without the interaction effect and the models with the interaction effect included.

We first report the results of the interaction model: The respective regression coefficients of overload for flourishing in year groups 1, 2, 3, and 4 all had negative statistically significant relationships with flourishing, varying between $\beta = -0.31$ and $\beta = -0.35$. Lecturer support predicted flourishing statistically significantly for all the year groups, with the largest value for the second-year group ($\beta = 0.45$). The only statistically significant interaction between overload and lecturer support was for the third-year group ($\beta = -0.20$). The variance in flourishing explained was 31.2%, 26.6%, 17.8%, and 25.7%, respectively, for the first-, second-, third-, and fourth-year groups, with all the values being statistically significant ($p < 0.000$). Also, the 95% confidence interval for the interaction between overload and lecturer support did not include zero $[-0.41; -0.01]$.

Table 3. Measurement invariance of the best-fitting model

Models compared	Chi-square	df	p-value
Metric against configural	51.87	48	0.326
Scalar against configural	292.84	252	0.039
Scalar against metric	247.50	204	0.202

Table 4. Mean score comparisons of the latent variables among the year groups (Y1, Y2, Y3, Y4)

	Differences in means					
	Y1–Y2	Y1–Y3	Y1–Y4	Y2–Y3	Y2–Y4	Y3–Y4
EWB	−0.21***	0.02	0.04	0.23**	0.25**	0.50
PWB	−0.08	0.02	0.09	0.10	0.16***	0.07
SWB	−0.08	0.07	0.01	0.15***	0.09	−0.06
Lecturer support	0.25**	0.41*	0.47*	0.17***	0.23**	0.06
Overload	−0.09	−0.33*	−0.35*	−0.24*	−0.26*	−0.02

Note. * $p < 0.000$, ** $p \leq 0.01$, *** $p \leq 0.05$

Table 5. Regression coefficients for the interaction and no-interaction models

	Year group 1 ($n = 204$)	Year group 2 ($n = 210$)	Year group 3 ($n = 203$)	Year group 4 ($n = 162$)
<i>No interaction model:</i>				
Flourishing ON				
Overload	−0.33*	−0.31*	−0.33*	−0.34*
Lecturer support	0.35*	0.45*	0.22*	0.34*
<i>Interaction model:</i>				
Flourishing ON				
Overload	−0.35*	−0.31*	−0.35*	−0.35*
Lecturer support	0.37*	0.45*	0.27*	0.35*
Interaction	0.09	−0.09	−0.24**	−0.10

Note. * $p < 0.000$, ** $p \leq 0.05$

Table 6. Wald tests

	Y1=Y2	Y1=Y3	Y1=Y4	Y2=Y3	Y2=Y4	Y3=Y4
Overload	0.02	0.00	0.02	0.03	0.06	0.10
df	1	1	1	1	1	1
<i>p</i>	0.877	0.982	0.903	0.870	0.807	0.925
Lecturer support	1.27	2.90	0.01	7.20	1.16	1.85
df	1	1	1	1	1	1
<i>p</i>	0.259	0.089	0.922	0.007	0.282	0.174

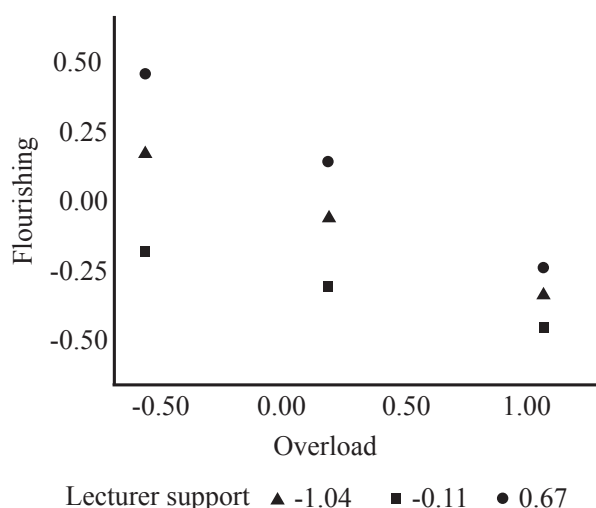


Figure 1. The moderation effect of lecturer support on the relationship between overload and flourishing

The regression coefficients in the model with no interaction between overload and lecturer support followed the same pattern as in the model with interaction between overload and lecturer support; except for the fact that all the values were smaller. For all the year groups, the variance in flourishing explained was statistically significant, but less than in the interaction model; namely, 30.9%, 26.3%, 16.2%, and 25.4% for the first, second, third, and fourth year groups, respectively.

Wald tests were done to investigate the statistical significance of differences between the regression coefficients of flourishing on overload and lecturer support among the four year groups (see Table 6). The only statistically significant ($p \leq 0.01$) difference was between the second- and third-year groups regarding lecturer support (7.20).

In the third year, lecturer support interacted with workload to affect flourishing (see Figure 1). Specifically, lecturer support was more strongly related to flourishing at low levels of overload. However, at high levels of overload, lecturer support did not really matter for flourishing.

Discussion

The aims of this study were (i) to determine the flourishing profile of pharmacy students at the largest pharmacy school in this country, and (ii) to determine whether the students' perceived workload and the perceived support from lecturers offered pathways to enhance their flourishing. Each year group was subjected to specific conditions; therefore, we differentiated among the year groups.

For the academic year groups, 40.3% of the students were flourishing, while 57% were moderately healthy, and only 2.7% were languishing. Most students presented with moderate levels of hedonic well-being (feeling good) and moderate levels of eudaemonic well-being (functioning well). The prevalence of flourishing was the highest in the second year (44.3%) and the lowest in the fourth year (35.8%), possibly because of students' perception of their workload and resources. The BPharm degree is a four-year degree, and only 28.6% of the historic year group 5 were flourishing. These findings are in contrast to findings in a study among Setswana-speaking South Africans, where only 20% were flourishing (Keyes et al., 2008). However, a study among college students in the USA found that 49.3% were flourishing (Keyes et al., 2012). It is possible that students have more resources than the average adult has. This study among pharmacy students corroborates the levels of flourishing among a cohort of South African pharmacists, where 60% were flourishing, 33.8% were moderately healthy, and 6.2% were languishing (Coetzer, 2014). It seems that the levels of flourishing among pharmacists or professional persons are higher than in the general population.

When we compared the differences in latent means, we found that students in their second year of study (group 2) self-reported with the highest levels of well-being. Among the third years, the students' level of social well-being dropped, maybe due to increasing study demands that left less time for attending to their social functioning. The trend of dropping self-reported psychological well-being was evident among the fourth-year students (see also Joshanloo, 2018). From a conservation of resources perspective (Hobfoll, 2002), the students may experience subjective loss of resources at senior levels of study due to demands on them requiring higher effort resource investment.

Students' perception of resources available in terms of lecturer support declined from their first through to their fourth year. However, there was an inverse relationship between their relationship with lecturers and workload. If they perceived the relationship as poor, they could perceive their workload as being larger (Xerri et al., 2018). This was particularly true for the third year students, the data of which indicated an interaction effect between lecturer support (a resource) and overload (a demand) in the third-year group so that as the workload increased, the students drew less on the lecturer as a resource. This was an unexpected result. It might be that students who experienced too great a workload may have attributed blame onto the lecturers, perceiving then as not so supportive and fair (Boudrias et al., 2011).

Implications for student support and development

Study resources are positively associated with psychological well-being (Mokgele & Rothmann, 2014). The availability of study resources (for example, lecturer support) can act as a pathway to flourishing for STEM students, such as those studying pharmacy. When students perceive their relationship with their lecturers as effective, their academic engagement increases (Xerri et al., 2018). Furthermore, a lecturer could activate motivating gain spirals of resources for students. However, students less engaged with lecturers for support with high workloads may be relying on peers in their present and previous cohorts. Peer support, as in learning circles, has evidence for effectiveness in assisting students to be successful with their studies (Mokgele & Rothmann, 2014). For instance, peer support enlarges a student's pool of available resources and replaces those resources lost or lacking. Resource gain becomes increasingly essential for students handling heavy academic demands diminishing their assets. By implication, lecturers could build into their course delivery use of student peer support groups as resource replenishment for students.

Limitations

Common method bias could be a problem in this study, as all the measures were based on self-reports. Some regard common method bias in surveys as "urban legend" (Spector, 2006). This study was based on students representing only one profession; namely, pharmacists. This was, however, at the largest pharmacy school in South Africa. Furthermore, supportive evidence of flourishing among a variety of professions already exists, and this study's findings contribute specifically to the literature regarding flourishing and the health professions.

Conclusion

The availability of study resources (and, more specifically, lecturer support) plays a significant role in the flourishing of students. The availability of such resources could act as a pathway to flourishing for students studying STEM disciplines such as pharmacy. Furthermore, dealing effectively with the workload over four years seems to be an important pathway to flourishing of pharmacy students. When the students experience their workload as too high, it affects their levels of well-being. Flourishing students have a spin-off of motivated, optimally functioning students and, therefore, also optimal results for the institution.

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Validation of the Depression Anxiety Stress Scale-21 (DASS-21) in a non-clinical sample of South African working adults

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This study investigated the psychometric properties of the Depression Anxiety Stress Scale-21 (DASS-21) in a non-clinical sample of working people. Working South African persons ($N = 269$; females = 62%; mean age = 33, $SD = 11.5$) completed the DASS-21, as well as the Center for Epidemiologic Studies Depression Scale-Revised (CESD-R) and the Generalized Anxiety Disorder Scale-7 (GAD-7). Results following Confirmatory Factor Analysis and correlational analysis yielded a three-factor structure (depression, anxiety, and stress) for the DASS-21. The evidence for discriminant and convergent validity was strong. Additionally, we found good reliabilities for the overall scale as well as the subscales. The DASS-21 appears a valid and reliable instrument for measuring depression, anxiety, and stress in the workplace. Future studies should investigate differential item functioning and equivalence of items among South African working populations.

Keywords: validity, reliability, psychological well-being, workplace well-being

Introduction

Depression, anxiety, and stress are serious mental health issues that significantly impact employees (Harnois & Gabriel, 2002; Rao & Ramesh, 2015). Importantly, depressive disorders and anxiety disorders are among the five leading mental health conditions contributing to workplace disability, globally, (Harnois & Gabriel, 2002). Specifically, in South Africa, 16.5% of the workforce experience difficulties related to mental illness (Olivier, 2014). In South Africa, the lifetime prevalence for mental illness is 30.3%, and the projected risk thereof is even higher, at 47.5% (Herman et al., 2009). Closely related to depression and anxiety is stress (cf. Blaug, Kenyon, & Lekhi, 2007; Nauert, 2015; Uzonwanne, 2014), which is also a serious concern at work. Stress is one of the forerunners of mental illness (cf. Pflanz, 2001). Bloomberg's report (2013) indicated that South Africa is the second most stressed out country in the world. Additionally, South Africa's economy is influenced by workplace stress as stressed workers are absent and less productive at work (Sieberhagen, Rothmann, & Pienaar, 2009). Whether stress originates from work or general life circumstances, it is clear that stress has a negative influence on employees and organisations. We sought to validate a widely used measure of depression, anxiety and stress in a sample of South African workers.

Workplace depression, anxiety, and stress

The evidence regarding the presence and impact of mental illness in the workplace is disconcerting. The purpose of employing depression and anxiety instruments in the workplace is to provide evidence for employer organisations to proactively address mental health needs among the workers, which may harm employee work engagement.

Major depression is the psychiatric disorder most frequently diagnosed among working people (Watson Wyatt Canada ULC, 2007). Herman and colleagues (2009) reported an individual lifetime prevalence of 9.8% and a

twelve-month prevalence of 4.5% for depression among South Africans. Major depression symptoms such as reduced energy and concentration, loss of interest, and fatigue (American Psychiatric Association, 2013; Niv et al., 2015) adversely impact work performance. Organisational costs of depression include lost opportunities (Patel & Taylor, 2012), increased presenteeism and absenteeism, reduced productivity, and subsequent poor performance (Elinson, Houck, Marcus, & Pincus, 2004; Kessler & Frank, 1997; Kessler, Greenberg, Mickelson, Meneades, & Wang, 2001; McTernan et al., 2013). In a South African study, depression caused 27.2 mean days per year out-of-role (Mall et al., 2015).

Herman and colleagues (2009) found that anxiety disorders are the most widespread mental illness in South Africa, with an 5.8% lifetime prevalence and 8.1% twelve-month prevalence. Symptoms of anxiety such as loss of energy, exhaustion, and feeling on edge (APA, 2013) have consequences such as difficulty in working under pressure, in making decisions, and coping with heavy workloads (Mamo, 2013). Mall and colleagues (2015) reported that anxiety had the highest mean out-of-role days (28.2) of all mental illnesses in South Africa.

Stress contributes to the development of psychological disorders such as depression (Levi, 2005) and anxiety (Blaug et al., 2007). Stressful work aspects include technological changes in the workplace (Colligan & Higgins, 2006), relationships at work, structure at work, unrealistic objectives, workload, work environment, and job satisfaction (Bickford, 2005; Netshidzati, 2012). Job stress leads to reduced job satisfaction and lowered productivity levels, amongst others (Bickford, 2005). Additionally, work stress negatively impacts on the finances of organisations, as well as the economies of countries. The cost of job stress for France ranges between €1.17 and €1.97 billion per year (Bejean & Sultan-Taieb, 2005). Shearer (2013) found that the cost related to work stress in the UK was £6.5 billion in 2012.

Measures of workplace mental health

The Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995) is a widely utilised 21-item instrument that measures depression, anxiety, and stress. It has been used in South African studies (cf. Stayanov, 2011); however no evidence of validation was presented. The original English version has been validated in Australia (Lovibond & Lovibond, 1995; Ng et al., 2007), Canada (Antony, Bieling, Cox, Enns, & Swinson, 1998), and the United Kingdom (Henry & Crawford, 2005). Countries in which the DASS-21 was translated include Turkey (into Turkish; Akin & Cetin, 2007), Spain (into Spanish; Daza et al., 2002), Vietnam (into Vietnamese; Tran, Tran, & Fischer 2014), Iran (into Farsi; Sahebi, Asghari, & Salari, 2004), the Netherlands (into Dutch; de Beurs, Van Dyck, Marquénig, Lange, & Blonk, 2001), Italy (into Italian; Severino and Haynes, 2010), China (into Chinese; Zuo & Chang, 2008), Korea/Australia (into Korean; Jun, Johnston, Jun-Mo, & O'Leary, 2018), Malaysia (into Bahasa Malaysian; Shamsuddin et al., 2013), and Brazil (into Brazilian Portuguese; Vignola & Tucci, 2013).

Previous studies report a three-factor model for the DASS-21 (for example, Antony et al., 1998; Bados, Solanas, & Andrés, 2005; Bottesi, Ghisi, Altoè, Conforti, Melli, & Sica, 2015; Brown, Chorpita, Korotitsch, & Barlow, 1997; Chan et al., 2012; Henry & Crawford, 2005; Lovibond & Lovibond, 1995; Mahmoud, Hall, & Staten, 2010; Norton, 2007; Vignola & Tucci, 2014) and with some strong cross-loadings (see Chan et al. 2012). Tran and colleagues (2013) found a one-factor structure in a Vietnamese translation, while Severino and Haynes (2010) reported a four-factor solution. There is a need for further studies to clarify the structure of the DASS-21.

Discriminant and convergent validity

There is mixed evidence for the convergent validity of the DASS-21 (for example, Bados et al., 2005; Bottesi et al., 2015; Chan et al. 2012; Coker, Coker & Sanni, 2018; Henry & Crawford, 2005; Tran et al., 2013; Vignola & Tucci, 2014). Chan and colleagues (2012) confirmed convergent validity for the Depression subscale only. Similarly, evidence for the DASS-21 discriminant validity is mixed (for example, Bottesi et al., 2015; Coker et al., 2018; Crawford & Henry 2003; Lovibond & Lovibond, 1995). Thus, more evidence is needed on the DASS-21 in terms of discriminant and convergent validity.

Goals of the study

We aimed to validate the DASS-21 in a South Africa sample of workers. In doing so, we tested the following hypotheses:

- H1: The DASS-21 shows acceptable construct validity in a non-clinical sample of working adults in South Africa;
- H2: The DASS-21 shows acceptable discriminant validity in a non-clinical sample of working adults in South Africa;
- H3: The DASS-21 shows acceptable convergent validity in a non-clinical sample of working adults in South Africa; and

- H4: The DASS-21 is a reliable measuring instrument in a non-clinical sample of working adults in South Africa.

Method

Participants and setting

Non-probability, convenience sampling was used to access working adults in various organisations and industries within South Africa who were willing to complete a self-report questionnaire ($n = 269$). The majority of participants were female (62%), and were mostly between 18 and 37 years (70%) of age. In terms of race, the sample consisted predominantly of white Afrikaans speaking individuals (62%). The majority of participants were either single (41%) or in a committed relationship (48%). Most of the participants had either a Grade 12 (35%), an undergraduate qualification (or equivalent, 42%), or a post-graduate qualification (15%). The participants were employed in a wide range of industries with the Administrative and support services (7%), Finances and Insurance (8%), Attorneys/Law (9%), Sport (9%), Education (9%), and Healthcare (16%) industries being mainly represented. In terms of years of experience, most participants indicated that they had been employed in their current sector between one to five years (63%).

Muthén and Muthén (2002) conducted a Monte Carlo study to decide on sample size and determine power for, amongst others, a confirmatory factor analyses (CFA) model. This is very similar to the model that this study tested. They found that if a CFA model has "...normally distributed continuous factor indicators and no missing data, a sample size of 150 is needed for power of 0.81" (p. 606-607). For a CFA model with non-normal distribution without missing data, a sample size of 265 is needed for a power of 0.80. Therefore, the current sample size is within the minimum parameters for adequate sample size.

Instruments

Criterion measure

The shortened version of the DASS-21 (Henry & Crawford, 2005) was used to measure depression (sample item: "I do not have anything to look forward to"), anxiety (sample item: "I am feeling close to panicking"), and stress (sample item: "I am feeling agitated"). Each subscale consists of seven items measured on a four-point scale ranging from 0 = Did not apply to me at all, to 3 = Applied to me very much, or most of the time. Reported reliabilities (alpha coefficients) of the DASS-21 range between 0.70 and 0.97 (Bottesi et al., 2015; Coker et al., 2018; Daza et al., 2002; de Beurs et al. 2001; Tran et al., 2013; Henry & Crawford, 2011; Sahebi et al., 2004; Vignola & Tucci, 2014).

Concurrent validation measures

The Center for Epidemiologic Studies Depression Scale-Revised (CESD-R; Radloff, 1977) is a 20-item measure of major depression (e.g., feeling depressed, lost interest in usual activities, having a poor appetite). Participants choose the response option that most closely matched their feelings or behaviour over the past week rated on a five-point frequency scale ranging from 0 = Not at all or

less than one day, to 4 = Nearly every day for two weeks (Eaton et al., 2004). Studies of the reliability of scores from the CESD-R yielded reliability coefficients ranging between 0.92 and 0.93 (Van Dam & Earlywine, 2011; Walsh, 2014). The reliability coefficient of scores from the CESD-R in the present sample was 0.95.

The Generalized Anxiety Disorder Scale-7 (GAD-7: Spitzer, Kroenke, Williams, and Lowe, 2006) comprises of seven items to measure symptoms of generalised anxiety disorder. Participants are asked to indicate how often over the past week the statements in the questionnaire applied to them on a 4-point frequency scale ranging from 0 ("did not apply to me at all), to 4 ("applied to me very much or most of the time"). Cross-cultural research has produced validity coefficients for the GAD-7 ranging between 0.91 and 0.94 (Homans, 2012; Mills et al., 2014). The reliability of scores from the GAD-7 in the present sample was 0.87.

Procedure

The research project obtained ethical approval from the Department of Industrial Psychology and People Management's proposal committee at the University of Johannesburg. Participants were informed of (i) the purpose and nature of the study; (ii) that participation was voluntary; and (iii) their right to refuse to partake in the study and to withdraw at any time during the study, without any penalty. No identifying information was asked. Participants had to provide signed informed consent. As the questionnaire may potentially present sensitive information regarding depression, anxiety, and stress, participants were given the option to contact a counselling psychologist if the research in general or particular items in the questionnaire elicited any concern. Questionnaires are stored in a secure location and the dataset on a password-protected computer.

English questionnaires were distributed in both paper-and-pencil and electronic format. A total of 330 questionnaires were dispersed to participants who were representative of various industries within the working sector and who were willing to participate in the study; 323 questionnaires were received back (98% response rate).

Data analyses

The Statistical Package for the Social Sciences Version 24 (SPSS24) and AMOS were used to analyse the data, focussing on descriptive statistics and CFA to address the hypotheses.

CFA was used to investigate the construct validity by looking at the factor structure of the DASS-21. CFA is a maximum likelihood estimation (MLE) that tests hypotheses that resulted from theory by determining how many factors exist as well as the number of variables matching specific factors (Kahn, 2006). MLE is a frequently used method of estimation that assumes that observed variables are continuous and normally distributed (Bollen, 1989). The psychometric properties of MLE are consistency and asymptotic normality (Panchenko, 2005). However, a potential constraint of MLE is that it is sensitive to divergence from normality (DeCoster, 1998; Olckers, Buys, & Grobler, 2010). The first step in this study was to define the theoretical model. The theoretical

model incorporated three factors (anxiety, depression, and stress) with seven items in each factor. The coefficients were estimated using MLE.

Next, the model-fit was evaluated using the following goodness-of-fit indices: Chi-square (χ^2) statistics, the statistics, the Root Mean Square Error of Approximation (RMSEA), the Goodness-of-fit index (GFI), the Tucker-Lewis index (TLI), and the Comparative fit index (CFI). If the need arose to improve model-fit, the Squared Multiple Correlations (SMC) and the Modification Indices (MI) were examined, and the necessary model modifications were performed. The SMC, also known as "the coefficient of determination" (Jöreskog, 1999, para. 2, p. 1), refers to the variance considered in the dependent variable by a mixture of independent variables (Munro, 2005). The general cut-off value for the SMC is > 0.30 (Choi, 2007). MI evaluates the statistical significance of an undetermined model relationship and is representative of the estimated reduction in χ^2 that would be controlled through the estimation of the parameters of particular interest (Netemeyer et al., 2003). A value of 3.84 or larger is statistically significant and significantly improves model-fit (Netemeyer et al., 2003).

CFA was used to investigate the discriminant validity of the DASS-21. The Chi-square χ^2 difference test was used to determine discriminant validity. The unconstrained model found to be valid in the construct validity phase, was used as the baseline model (M1). The estimated correlation parameters were constrained to 1.00 between (i) the Anxiety and Depression scales (M2); (ii) the Anxiety and Stress scales (M3); and (iii) the Stress and Depression scales (M4). A χ^2 difference test was performed on the values acquired for the constrained and unconstrained models (see Koekemoer & Mostert, 2010). According to a literature review conducted by Koekemoer and Mostert (2010), discriminant validity is achieved if the unconstrained model produces a significantly lower χ^2 value than the constrained models.

Convergent validity was tested by inspecting the correlation matrix. The general rule of thumb pertaining to convergent validity is that items with an item loading of 0.50 or above shows evidence of convergent validity albeit modest, although 0.70 or above is most desirable (Carlson & Herdman, 2012).

Lastly, to investigate reliability a coefficient alpha was calculated for the DASS-21. An alpha coefficient of at least 0.70 was viewed as indicative of acceptable internal consistency, 0.80 or higher was viewed as indicative of good internal consistency (Netemeyer et al., 2003).

Results

The descriptive statistics of the DASS-21 are reported in Table 1. The data was relatively normally distributed, with only one item displaying slight skewness and kurtosis. However, a decision was taken to not delete the item yet and determine whether it influences the instrument's reliability. Therefore, it was included for further analysis as it made the results comparable with those of other studies.

Construct validity

The theoretical model (M1) for measuring anxiety, depression, and stress was tested using CFA. The goodness-of-fit statistics for the DASS-21 were estimated by means of MLE and showed moderate fit for the theoretical model (M1) ($\chi^2 = 579.77$ ($n = 269$), $\chi^2/\text{df} = 3.12$ GFI = 0.83, RMSEA = 0.09, TLI = 0.86, CFI = 0.88). The SCM and MI were examined to improve model-fit. One item (DASS2) had a value of < 0.30 and after examination of the item content; the item was removed from further analyses. The MI revealed that three pairs of indicators could be freely estimated to cross-load and yield possible better model-fit. These pairs of indicators included the error co-variances of DASS4 and DASS19, DASS17 and DASS21, as well as DASS1 and DASS12. Examination of the item content of these pairs showed that the items were very similar in meaning and it was therefore justifiable to allow these error co-variances to cross-load. As indicated in Figure 1, the results for the modified model (M2) indicated acceptable fit ($\chi^2 = 454.29$ ($n = 269$), $\chi^2/\text{df} = 2.77$ GFI = 0.86, RMSEA = 0.08, TLI = 0.89, CFI = 0.91).

Discriminant validity

The results for the χ^2 difference test are displayed in Table 2 and indicated that in each instance where a correlation was fixed, the comparison models had worse fit than the unconstrained model, thereby providing proof of discriminant validity.

Convergent validity

The results for the assessment of convergent validity for the DASS21 are presented in Table 3. Although one of the items in the DASS21 produced slight skewness and kurtosis, convergent validity was still assessed through the Pearson's Product-Moment correlation matrix as opposed to Spearman's correlation. Bishara and Hittner (2012)

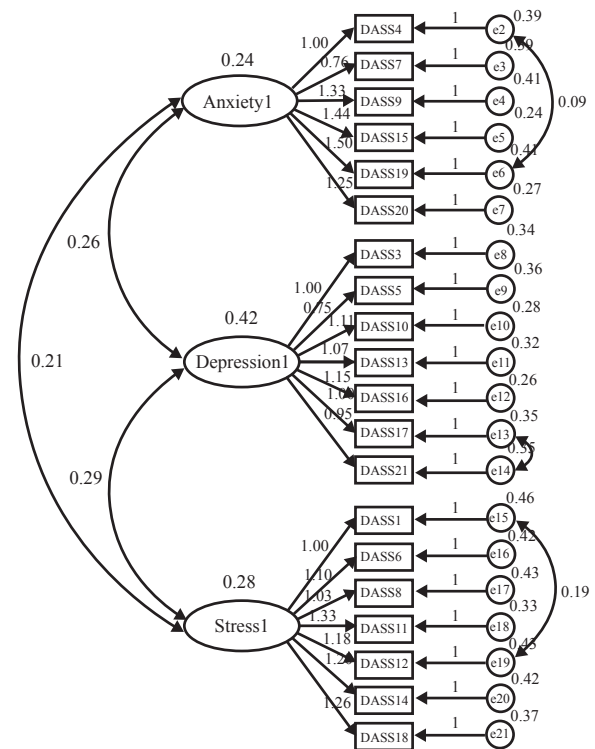


Figure 1. Graphic representation of the DASS-21 model

tested the significance of a correlation with non-normal data and compared various correlational approaches. They found that when data were marginally non-normal, the significance of the Pearson correlation coefficient was able to tolerate slight departures from normality. All correlations were statistically and practically significant at $p \leq 0.001$ with large correlations $r > 0.50$. Items with a loading of 0.50 or higher were considered evidence of convergent validity with loadings 0.70 or higher being ideal (Carlson & Herdman, 2012).

Table 1. Descriptive statistics of the Depression Anxiety Stress Scale – 21 ($N = 269$)

Item	Mean	Std. Deviation	Skewness	Kurtosis
DASS1	0.93	0.86	0.75	-0.01
DASS2	0.67	0.85	1.15	0.55
DASS3	0.60	0.87	1.35	0.87
DASS4	0.45	0.80	1.81	2.50
DASS5	0.69	0.77	0.80	-0.24
DASS6	0.94	0.87	0.67	-0.25
DASS7	0.33	0.68	2.20	4.50
DASS8	0.66	0.85	1.16	0.52
DASS9	0.68	0.92	1.12	0.11
DASS10	0.57	0.89	1.47	1.09
DASS11	0.93	0.91	0.77	-0.18
DASS12	0.86	0.90	0.78	-0.31
DASS13	0.77	0.90	0.91	-0.15
DASS14	0.80	0.91	0.91	-0.11
DASS15	0.58	0.86	1.36	0.83
DASS16	0.58	0.90	1.47	1.11
DASS17	0.49	0.89	1.77	1.98
DASS18	0.81	0.90	0.87	-0.17
DASS19	0.58	0.84	1.35	0.92
DASS20	0.52	0.80	1.49	1.39
DASS21	0.42	0.84	2.00	2.92

Table 2. Fit statistics for unconstrained and constrained models of the DASS-21 ($N = 269$)

Model	χ^2	Df	χ^2/df	RMSEA	GFI	TLI	CFI	$\Delta \chi^2$	Δdf
M1: Unconstrained model	454.29	164	2.77	0.08	0.86	0.89	0.91	–	–
M2: Constrained model: Anxiety.Depression = 1.00	549.42	165	3.33	0.09	0.84	0.86	0.88	95.13	1
M3: Constrained model: Anxiety.Stress = 1.00	536.37	165	3.25	0.09	0.84	0.86	0.88	82.08	1
M4: Constrained model: Stress.Depression = 1.00	567.42	165	3.44	0.10	0.83	0.85	0.87	113.13	1

Note. RMSEA = Root-Mean-Square Error of Approximation. GFI = Goodness-of-fit Index; TLI = Tucker–Lewis Index. CFI = Comparative Fit Index.

Table 3. Pearson Product-Moment Correlations for the DASS-21, GAD-7 and CESD-R

Instrument	DASS-21			GAD-7	CESD-R
	Anxiety	Depression	Stress		
DASS-21					
Anxiety	1.00	–	–	–	–
Depression	0.71**	1.00	–	–	–
Stress	0.72**	0.75**	1.00	–	–
GAD-7	0.65**	0.64**	0.76**	1.00	–

Note. *denotes $p < 0.001$; † denotes large effect size

There was a significant positive relationship between depression and anxiety (large effect; $r = 0.71$; $p < 0.000$) and depression and stress (large effect; $r = 0.75$; $p < 0.000$). Depression further had a significant positive relationship with the CESD-R (large effect, $r = 0.80$; $p < 0.000$). There was a significant positive relationship between anxiety and stress (large effect; $r = 0.72$; $p < 0.000$), and between anxiety and the CESD-R (large effect, $r = 0.70$; $p < 0.000$), and the GAD-7 (large effect; $r = 0.65$; $p < 0.000$).

Discussion

The construct validity of the DASS-21 was done via CFA. Results verified the three-factor DASS-21 structure originally proposed by Lovibond and Lovibond (Lovibond & Lovibond, 1998). The factors are labelled depression, anxiety, and stress. Therefore, construct validity was established. Previous studies report a similar finding (Antony et al., 1998; Bados, Solanas, & Andres, 2005; Bottesi, Ghisi, Altoè, Conforti, Melli, & Sica, 2015; Brown, Chorpita, Korotitsch, & Barlow, 1997; Chan et al., 2012; Henry & Crawford, 2005; Lovibond & Lovibond, 1995; Mahmoud et al., 2010; Norton, 2007; Vignola & Tucci, 2014).

Additionally, discriminant validity was confirmed for the DASS-21. In this regard, the findings are in keeping with the results of previous research that were conducted in non-clinical samples (Bados et al., 2005; Bottesi et al., 2015; Coker et al., 2018; Crawford & Henry 2003; Lovibond & Lovibond, 1995). As indicated by Crawford and Henry (2003), weaker discriminant validity is not uncommon in self-report questionnaires of anxiety and depression; this is probably owing to the overlap in the two constructs.

It is worth noting that previous studies used correlations to determine discriminant validity, while this study examined the Chi-square difference between the constrained and unconstrained models. Although some studies (see for example Imam, 2008) suggest that

the DASS-21 has lower discriminant validity than the DASS-42, the balance of the evidence suggests that the DASS-21 shows acceptable discriminant validity in a non-clinical sample of working adults in South Africa. That discriminant validity is not as strong as convergent validity is universal in self-report questionnaires measuring anxiety and depression due to overlap in constructs. Despite this, results confirm that depression, anxiety, and stress are distinct constructs.

Results showed acceptable convergent validity, which supports previous findings (Bados et al., 2005; Bottesi et al., 2015; Coker et al., 2018; Henry & Crawford, 2005; Tran et al., 2013; Vignola & Tucci, 2014). Overall, results clearly show that the DASS-21 has sound psychometric properties and is suitable for use in South Africa in non-clinical populations.

Implications for workplace mental health assessment

Theoretically, this study contributes to the literature on workplace mental health in South Africa by providing a validated questionnaire that can be utilised in future research. Organisations should take cognisance of the presence of mental illness among their employees. The DASS-21 was found to be a valid and reliable instrument with which to measure common mental illnesses at work; namely depression, anxiety, and stress. Proper measures enable accurate findings and therefore enhance intervention effectiveness. The DASS-21 can be used successfully by researchers and practitioners alike (cf. Akin & Çetin, 2007).

Limitations of the study and suggestions for further research

The sample was not representative of the South African population with mostly white persons who participated. The DASS-21 is a self-reporting measure that asks for potentially sensitive information and therefore, participants may have responded in a socially desirable manner. Future

studies should aim for a more representative sample of South Africans and should examine bias and equivalence in different non-clinical samples.

Conclusion

The study examined the psychometric properties of the DASS-21 in a non-clinical sample. Results indicated that the DASS-21 has good construct validity, discriminant validity, and convergent validity. A three-factor structure was confirmed, and reliabilities for each of the scales were also good; rendering the DASS-21 a valid and reliable instrument for research purposes in South African work settings.

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Gratitude, well-being and psychological distress among South African university students

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This study investigated the associations between gratitude, measures of well-being, and indicators of psychological distress (depression and negative emotion) among South African university students. Data were collected from 198 first-year university students (female = 69.70%; mean age = 20.55 years, SD = 1.70 years) using measures of gratitude, flourishing, well-being, depression, and negative emotion. The results showed that gratitude is positively associated with measures of well-being, and inversely related to indicators of psychological distress. University-based support programmes should consider gratitude interventions to support student success.

Keywords: depression, eudaimonic well-being, flourishing, gratitude, negative emotions, student counselling

Introduction

Traditionally, the concept of student success referred to academic performance and successful completion of university studies (Lewin & Mawoyo, 2014; Scott, 2018). However, some researchers have called for a more holistic conception of student success that encompasses not only academic achievement but also engagement in educational activities and the cultivation of non-cognitive factors such as grit and social intelligence, and the promotion of flourishing behaviour (Anderson, 2016; Nelson & Low, 2011; Sinclair, 2019).

Flourishing refers to high levels of emotional well-being, psychological well-being, and social well-being (Keyes, 2016). Persons who report high levels of flourishing behaviour also tend to self-report with high scores on measures of gratitude (Emmons & Mishra, 2011). Gratitude refers to a cognitive-affective state that is related to the perception that a person has received a particular benefit that was not intentionally sought after, deserved, or earned; but due to the benevolent intentions of another person (Emmons & Stern, 2013).

The promotion and development of flourishing and gratitude are essential for students to develop the graduate skills required to enter the world of work and positively contribute to national and international challenges (Makola, 2014; Mason, 2017a; Sinclair, 2019). However, research suggests that many university students are not flourishing, but experiencing high levels of psychological distress (Anderson, 2016; Mason, 2017b; Van Zyl & Rothman, 2012).

Psychological distress among university students

There is consensus in the literature that students experience a wide range of mental health problems, including depression, anxiety disorders, and suicidal ideation (Eisenberg, Hunt, & Speer, 2013). A South African study established that not only is psychological distress pervasive among young people, but suicidal ideation is higher among university students than among the general South African populace and student populations in international contexts (Bantjes, Kagee, McGowan, & Steel, 2016).

Furthermore, studies have indicated that students tend to interpret stress, which is pervasive in the university context, as a negative experience, are prone to adopt ineffective coping strategies, and struggle to access resources that could enhance well-being (Mason, 2017b; Mudhovozi, 2011; Nelson & Low, 2011). Subsequently, markers of psychological distress, for example depression and negative emotions, could manifest among university students (Cilliers, 2014; Nelson & Low, 2011).

Student counselling services

Student counsellors play essential roles in supporting students to deal with stressors (Cilliers, 2014; Lewin & Mawoyo, 2014). To date, counselling efforts for university students have predominantly adopted a pathogenic focus through the identification of risk factors for academic failure and psychological distress, accompanied by curative interventions (Dockrat, 2016; Van Zyl & Dhurup, 2018). Consequently, students are not assisted in developing protective psychological resources to proactively address challenges (Kotzé & Kleynhans, 2013; Sinclair, 2019). Moreover, curative student counselling interventions, such as individual therapy, are time-consuming and resource-intensive (Cilliers, 2014). This is problematic as student counselling services are generally over-prescribed and under-resourced within an environment where funding efforts are more focussed on enhancing physical access to higher education than on promoting student well-being (Cilliers, 2014).

Whereas curative approaches remain essential in addressing psychopathology, they ought to be augmented by an emphasis on students' inner strengths or psychological resources (Kotzé & Kleynhans, 2013; Van Zyl & Dhurup, 2018; Van Zyl & Rothman, 2012). A positive psychology approach aims to assist students in developing strength-based psychological resources that could enhance flourishing in the face of stressors (Anderson, 2016; Mason, 2017b). Studies have suggested that gratitude could serve as a positive psychological resource against various forms of psychological distress,

such as depression and negative emotions (Emmons & Stern, 2013; Stoeckel, Weissbrod, & Ahrens, 2015).

Gratitude and well-being

Gratitude is a social emotion directed towards other persons and includes a proactive acknowledgement that others may have made certain sacrifices for the well-being of a person (Emmons & Mishra, 2011). It is positively associated with a host of psychological benefits, such as positive youth development, quality in life, well-being, and optimism (Kashdan, Mishra, Breen, & Froh, 2009; Ma, Kibler, & Sly, 2013; Stoeckel et al., 2015). Similarly, gratitude is inversely related to markers of psychological distress, such as depression and negative emotions (Emmons & Stern, 2013). In addition to positive associations with indicators of well-being, gratitude is considered to be a crucial social skill that can broaden and build young people's skills repertoires and empower them to navigate through developmental challenges and promote thriving behaviour in education contexts (Fredrickson & Branigan, 2005; Froh, Bono, & Emmons, 2010; Wilson, 2016).

Empirical findings have indicated that participants' experience and expression of gratitude can be developed using positive psychology interventions (Emmons & McCullough, 2003). Wilson (2016) found that students who were supported to reflect on gratitude toward learning by educators experienced more significant levels of gratitude. Moreover, their focussed behaviour increased and resilience was strengthened. Consequently, research that investigates the value of gratitude within student counselling contexts appears vital.

Research on the association between gratitude, flourishing, well-being, and indicators of psychological distress (depression and negative emotions) among South African student populations (Guse, Vescovelli, & Croxford, 2019; Van Schalkwyk & Wissing, 2010) is scant. Additionally, more information is needed in assessing gender differences on gratitude (Emmons & Mishra, 2011; Emmons & Stern, 2013; Guse et al., 2019). Therefore, the study of the empirical linkages between gratitude and flourishing as well as depression and negative emotions seems timely and necessary within student counselling contexts. Findings could offer insight into the development of positive psychology-based student counselling interventions, with specific reference to gratitude interventions, within the South African university context.

Goal of the study

The goal of this study was to examine the associations between gratitude, flourishing, well-being, and psychological distress among a sample of South African university students. The study was guided by the following question and sub-questions:

- What are the relationships between gratitude, flourishing, well-being, depression and negative emotions in a student population?
 - Do male and female students report different scores on measures of gratitude, well-being, and psychological distress?

- Do students who report higher levels of gratitude also report higher levels of flourishing and well-being, and lower scores in depression and negative emotions, when compared to students who report a low sense of gratitude?

Method

Research approach and strategy

A descriptive and correlational research design was used to investigate the relationship between gratitude, flourishing, well-being, and psychological distress. Flourishing, well-being, depression, and negative emotions were the dependent variables and gratitude served as the independent variable.

Participants and setting

A purposive sample of 198 first-year university students (mean age = 20.04, SD = 1.33; female = 69.69%) participated in the study. The majority of participants reported Sepedi (24.75%), Setswana (20.71%), and isiZulu (20.20%) as their mother tongue.

Data collection and procedure

Data were collected during the first semester that students were enrolled for university studies in 2016. The students completed measures on gratitude, flourishing, depression, and negative emotions. Additionally, they self-reported on demographic variables. Data were collected in class. The Research Ethics Committee of the university where the sample was drawn granted permission to conduct the study (Ref#: REC2014/03/013) and all participants provided individual, written informed consent. The data collection instruments are described next.

Gratitude Questionnaire

Gratitude was assessed by means of the Gratitude Questionnaire (GQ-6), which is a 6-item measure that assesses a person's general grateful affect (McCullough, Emmons, & Tsang, 2002). An example item includes: "I am grateful to a wide variety of people." Answers are rated on a 7-point Likert scale ranging from 1 = strongly disagree, to 7 = strongly agree. Higher scores represent higher levels of gratitude. In this study, Cronbach's alpha for scores from the GQ was 0.82.

Flourishing Scale

Data on flourishing was collected using the Flourishing Scale (FS). The FS is an 8-item measure of psychosocial flourishing, based on recent theories of psychological and social well-being (Diener, 2013). Example items include: "I lead a purposeful and meaningful life" and "People respect me". Participants indicate response on a 7-point Likert scale ranging from 1 = strongly disagree, to 7 = strongly agree. A high score indicates that a person embodies numerous psychological resources and strengths. In this study, the internal consistency reliability index for scores from the FS was 0.74.

Questionnaire for Eudaimonic Well-being

The Questionnaire for Eudaimonic Well-being (QEWB) is a 21-item measure. An example item includes: "I believe

I have discovered who I really am". Participants are requested to indicate their agreement with each statement on a scale ranging from 0 = strongly disagree, to 4 = strongly agree (Waterman et al., 2010). Total scores range from 0 (low) to 84 (high), with mean scores varying from 54.63 (SD = 10.26) to 56.83 (SD = 10.78). In this study, the internal consistency reliability index for scores from the QEWB was 0.79.

Oxford Happiness Questionnaire

The Oxford Happiness Questionnaire (OHQ) is a measure of subjective well-being (SWB: Hills & Argyle, 2002). Participants are asked to respond to 29 items on a 6-point Likert scale ranging from 1 = strongly disagree, to 6 = strongly agree. Examples of items include "I am intensely interested in other people" and "I feel that I am not especially in control of my life" (reverse scored). Total scores are summed and divided by 29 to offer final scores ranging from 1 = not happy, to 6 = very happy. The Cronbach's alpha for scores from the OHQ in the present study was 0.71.

Short Depression and Happiness Scale

The Short Depression-Happiness Scale (SDHS) is a 6-item statistically bipolar self-report scale that offers measurement of depression and happiness (Joseph, Linley, Harwood, Lewis, & McCollam, 2004). Six items inquire about positive thoughts, feelings, and kinesthetic experiences. Additionally, three items ask about negative thoughts, feelings, and kinesthetic bodily experiences. Respondents are asked to think about how they have felt in the past seven days and to rate the frequency of each item on a 4-point scale: 0 = never, 1 = rarely, 2 = sometimes, and 3 = often. For the aim of this study, only items that assess depression (for example: "I felt dissatisfied with my life") were used. Previous studies report scores from the SDHS to be highly reliable and valid for measuring depression and happiness (Joseph et al., 2004). In this study, the Cronbach's alpha score for the SDHS was 0.78.

The Scales of Positive and Negative Experience

The Scales of Positive and Negative Experience (SPANE) is a 12-item questionnaire that includes six items to assess positive (e.g., joyful), and six items to assess negative (e.g., unpleasant) feelings (Diener et al., 2009). Participants evaluate how often they experienced the listed feelings, over the past four weeks, on a scale ranging from 1 = very rarely or never, to 5 = very often or always. For this study, only the six items that evaluate negative feelings (e.g., sad

and unpleasant) were used. The Cronbach's alpha score for the SPANE in the present study was 0.80.

Data analysis

The data analysis was conducted using SPSS version 25. Descriptive statistics were calculated for the GQ-6, FS, QEWB, OHQ, SDHS, and SPANE. The strength and direction of the relationships were assessed using the Pearson product-moment correlations (Pearson's r). Linear regression analyses were used to investigate whether GQ-6 (independent variable) predicted FS, well-being, and psychological distress (Cohen, 1992; Field, 2013). The independent samples t -test was conducted to compare the differences in gratitude, flourishing, and psychological distress; and to compare male and female scores on the constructs.

Results and discussion

Descriptive statistics

Table 1 presents the descriptive and correlational statistics of the variables investigated in this study. The mean scores on the GQ-6 (mean = 30.77, SD = 6.53), FS (mean = 43.42, SD = 7.82), QEWB (mean = 56.85, SD = 8.82), and OHQ (mean = 4.47, SD = 0.70) are consistent with findings reported elsewhere (Boshoff, 2012; Diener et al., 2009). Participants reported low mean scores on the SDHS (mean = 4.20, SD = 1.91) and SPANE (mean = 15.80, SD = 4.88), indicating that the majority of participants may not struggle with clinical levels of depression or negative affect. These findings are inconsistent with research depicting high levels of depression and distress among students (Bantjes et al., 2016). However, the relatively small, self-selected sample and use of self-report measures in this study could have skewed results towards the more positive end of the spectrum.

The GQ-6 scores were positively associated with scores on the FS ($r = 0.41$, $p < 0.01$), QEWB ($r = 0.44$, $p < 0.01$), and OHQ ($r = 0.54$, $p < 0.01$). In contrast, the GQ-6 was inversely related to students' reported data on the SDHS ($r = -0.38$, $p < 0.01$) and SPANE ($r = -0.37$, $p < 0.001$). Thus, the higher the students' reported levels of gratitude, the greater the probability that they reported high scores related to flourishing and well-being, and the less the chance of reporting depressive symptoms and negative emotions. In earlier research, VanOyen Witvliet, Richie, Luna and Van Tongeren (2018) found that gratitude was strongly associated with well-being measures. Similarly, Emmons and Mishra (2011) found that gratitude is fundamental to well-being as it enables persons to focus on that which is positive and meaningful amidst a context

Table 1. Descriptive statistics, alpha coefficients and correlations

Variables	Mean	SD	1	2	3	4	5
1. Gratitude	30.77	6.53	—	—	—	—	—
2. FS	43.42	7.82	0.41**	—	—	—	—
3. QEWB	56.85	8.82	0.44**	0.41**	—	—	—
4. OHQ	4.47	0.70	0.54**	0.55**	0.56**	—	—
5. SDHS	4.20	1.91	-0.38**	-0.30**	-0.32**	-0.57**	—
6. SPANE Negative emotions	15.80	4.88	-0.37**	-0.43**	-0.49**	-0.59**	-0.65**

Note. PGIS = Personal Growth Initiative Scale; SHS = Satisfaction with Happiness Scale; QEWB = Questionnaire for Eudaimonic Well-being; OHQ = Oxford Happiness Questionnaire; SDHS = Short Depression Happiness Scale; SPANE = Scale of Positive and Negative Emotions; ** $p < 0.01$

where stress is omnipresent. Thus, it would appear that gratitude could predict well-being and serve as a buffer against negative outcomes.

In summary, gratitude was inversely related to the SDHS and SPANE. Students in the highest cohort of gratitude statuses also reported significantly higher levels on the well-being measures and lower scores on the SDHS and SPANE. These findings support previous studies that reported gratitude to be strongly predictive of well-being (Emmons & Stern, 2013; Guse et al., 2019).

Predicting flourishing, well-being and psychological distress from gratitude

Table 2 presents the results for EWB and HWB the GQ-6.

A simple linear regression was calculated to predict flourishing, EWB, and SWB based on gratitude. A significant regression equation was observed between the measures of GQ-6 and the FS, with $F(1,196) = 40.15$, $p < 0.01$; R^2 of 0.58. Thus, the GQ-6 explained 17% ($R^2 = 0.17$) of the variance in FS. Noteworthy regression equations were also observed in predicting eudaimonic well-being (QEWB), with $F(1,196) = 40.11$, $p < 0.01$; and SWB (OHQ), with $F(1,196) = 78.69$, $p < 0.01$ from the GQ-6. Specifically, GQ-6 explained 17% ($R^2 = 0.17$) of the variance in the QEWB, and 29% ($R^2 = 0.29$) of the variance in OHQ.

The study found that 14% of the variance ($R^2 = 0.14$, $F(1,196) = 31.10$, $p < 0.01$) in participants' SDHS scores

were explained by GQ-6. Negative affect, as assessed using the SPANE, was found to be significantly explained by gratitude, with $R^2 = 0.13$, $F(1,196) = 84.28$, $p < 0.01$

Whereas female participants reported higher levels of gratitude (mean = 31.44, SD = 6.42) compared to males (mean = 30.44, SD = 4.58) the difference was not significant (see Table 3). This finding is in contrast to earlier research that indicated female participants tend to report higher levels of gratitude (Kashdan et al., 2009). However, other studies have also reported higher scores on gratitude among male participants (Khan & Singh, 2013). The difference between male and female scores on the SDHS (t -value = 11.09, $p < 0.01$) and SPANE (t -value = 2.00, $p < 0.05$) were significant, with female participants reporting higher levels of psychological distress. This result is consistent with previous research (Addis, 2008).

Table 4 represents the variance in well-being scores and indicators of psychological distress between the subsections of the sample that reported high gratitude and low gratitude scores.

The difference between the two groups' reported gratitude scores ($t_{(19)} = 16.72$, $p < 0.01$) scores was statistically significant. Participants in the highest cohort of reported gratitude scores also reported meaningfully higher scores on the FS ($t_{(19)} = 8.89$, $p < 0.01$), OHQ ($t_{(19)} = 10.59$, $p < 0.01$), and QEWB ($t_{(19)} = 6.04$, $p < 0.01$). Correspondingly, participants who reported higher

Table 2. Regression analyses between scales

Model 1. DV: FS IV: GQ-6	Sum of squares	df	Mean	F square	p
Regression	1 522.59	1	1 522.59	40.15	0.00**
Residual	5 090.04	196	37.92		
Total	8 955.86	197			
$R^2 = 0.17$; Adjusted $R^2 = 0.17$; **Significant at $p < 0.01$					
Model 2. DV: QEWB IV: GQ-6	Sum of squares	df	Mean	F square	p
Regression	1 521.46	1	1521.46	40.11	0.00**
Residual	7 434.41	196	37.93		
Total	8 955.86	197			
$R^2 = 0.17$; Adjusted $R^2 = 0.16$; Significant at $p < 0.01$					
Model 1. DV: OHQ IV: GQ-6	Sum of squares	df	Mean	F square	p
Regression	2 565.64	1	2565.64	78.69	0.00**
Residual	6 390.22	196	32.60		
Total	8 955.86	197			
$R^2 = 0.29$; Adjusted $R^2 = 0.28$; **Significant at $p < 0.01$					
Model 2. DV: SDHS IV: GQ-6	Sum of squares	df	Mean	F square	p
Regression	1 297.38	1	1297.38	33.20	0.00**
Residual	7 658.48	196			
Total	2 151.39	197			
$R^2 = 0.14$; Adjusted $R^2 = 0.14$; Significant at $p < 0.01$					
Model 1. DV: SPANE IV: GQ-6	Sum of squares	df	Mean	F square	p
Regression	1 223.55	1	1233.55	31.01	0.00**
Residual	7 732.32	196	39.45		
Total	8 599.86	197			
$R^2 = 0.13$; Adjusted $R^2 = 0.13$; **Significant at $p < 0.01$					

Note. PGIS = Personal Growth Initiative Scale; SHS = Satisfaction with Happiness Scale; QEWB = Questionnaire for Eudaimonic Well-being; OHQ = Oxford Happiness Questionnaire; SDHS = Short Depression Happiness Scale; SPANE = Scale

Table 3. Independent samples *t*-test

Variables	<i>N</i>	Mean	SD	<i>t</i> -value
<i>Male</i>	60			
GQ-6	60	30.44	4.58	
FS	60	43.17	6.92	
OHQ	60	4.51	0.60	
QEWB	60	56.29	8.22	
SDHS	60	2.61	1.92	
SPANE	60	14.77	4.20	
<i>Female</i>	138			
GQ-6	138	31.44	6.42	1.03
FS	138	43.53	7.98	0.30
OHQ	138	4.43	0.81	0.72
QEWB	138	57.23	8.69	0.70
SDHS	138	10.82	1.93	11.09**
SPANE	138	16.27	5.29	2.00*

Note. PGIS = Personal Growth Initiative Scale; SHS = Satisfaction with Happiness Scale; QEWB = Questionnaire for Eudaimonic Well-being; OHQ = Oxford Happiness Questionnaire; SDHS = Short Depression Happiness Scale; SPANE = Scale of Positive and Negative Emotions; * $p < 0.05$; ** $p < 0.01$

Table 4. Independent samples *t*-test

Variables	<i>N</i>	Mean	SD	<i>t</i> -value
<i>Low gratitude group</i>	20			
GQ-6	20	20.45	4.70	
FS	20	31.10	6.38	
OHQ	20	3.23	0.62	
QEWB	20	43.80	17.38	
SDHS	20	5.65	3.03	
SPANE	20	21.70		
<i>High gratitude group</i>	20			
GQ-6	20	40.90	1.02	16.72**
FS	20	51.35	3.96	8.89**
OHQ	20	5.05	0.34	10.59**
QEWB	20	69.00	7.39	6.04**
SDHS	20	-2.85	2.12	9.58**
SPANE	20	12.75	12.52	4.51**

Note. PGIS = Personal Growth Initiative Scale; SHS = Satisfaction with Happiness Scale; QEWB = Questionnaire for Eudaimonic Well-being; OHQ = Oxford Happiness Questionnaire; SDHS = Short Depression Happiness Scale; SPANE = Scale of Positive and Negative Emotions; * $p < 0.05$; ** $p < 0.01$

gratitude scores indicated lower scores on the SDHS ($t_{(19)} = 9.58, p < 0.01$) and SPANE ($t_{(19)} = 4.51, p < 0.01$). These findings indicate that students in the higher cohort of gratitude statuses are more likely to experience heightened levels of well-being and may be less prone to the negative sequelae associated with depression and negative emotions. This finding can be interpreted through Fredrickson's broaden and build theory, which stipulates that positivity, such as a grateful mindset, enables people to broaden and build resources that enhance well-being and serves as a protective factor against unwellness (Fredrickson & Branigan, 2005). Hence, gratitude could serve as a protective factor against psychological distress and potentially enhance holistic student success.

Implications for student counselling and development

The findings have implications for student counselling. First, it can be hypothesised that gratitude could serve as a buffer for students against the stressors that they experience in higher education. Second, efforts aimed at enhancing a

sense of gratitude among students could positively affect levels of well-being, which may strengthen holistic student success. Consequently, the cultivation of gratitude among university students could prove beneficial in efforts aimed at supporting university students. Student counsellors should take note of the findings and take purposeful steps towards cultivating gratitude among university students. Amongst other things, the results could serve as a springboard for the development of student support programmes aimed at nurturing gratitude as an avenue to enhanced well-being among student populations.

Limitations of the study and further research

The findings of this study should be viewed against a backdrop of certain limitations. Firstly, a cross-sectional design was adopted. Hence, the dynamic and changing nature of gratitude and the dependent variables were not considered. Furthermore, since the self-report data were collected shortly after students were enrolled for university studies, participants' levels of motivation could have

skewed the results in a positive direction. Additionally, the use of self-report data on the independent and dependent variables could further have elicited potential response bias distortion on each of the measures, and the associations between the variables.

To address these limitations, future research could use longitudinal designs to assess changes in participants' reported data over time. Measures to control for social desirability could also be incorporated to control for response bias.

Conclusion

This study found students who self-reported with higher levels of gratitude to also self-perceive with higher well-being. Male and female students self-reported with similar levels of gratitude and well-being. Incorporating gratitude as a variable in the development of student support programmes may be of incremental benefit to promoting holistic student success.

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Correlates of physical activity among adults with anxiety symptoms in South Africa

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The present study aimed to assess the correlates of low physical activity in adults with anxiety in South Africa. Data from the South African National Health and Nutrition Examination Survey (a cross-sectional survey in 2012) were utilised. The sample included 1 811 persons 15 years and older (median age 40 years, interquartile range = 28) with anxiety. Overall, 42.2% of the sample engaged in low physical activity. In the final logistic regression model, socio-demographic factors (older age, being female, and urban residence), health status factors (functional disability and stroke), and health risk behaviours (no current tobacco use and no problem drinking) were associated with low physical activity. Findings suggest that physical activity behaviour interventions in South African adults with anxiety could target at risk groups identified in this study.

Keywords: adults, anxiety, health indicators, physical activity, socio-demographic factors, South Africa

Introduction

According to the World Health Organization (WHO, 2019): “Sedentary lifestyles increase all causes of mortality, double the risk of cardiovascular diseases, diabetes, and obesity, and increase the risks of colon cancer, high blood pressure, osteoporosis, lipid disorders, depression and anxiety” (p.1). Furthermore, as per the WHO (2019), 60 to 85% of people in the world – from both developed and developing countries – lead sedentary lifestyles, making it one of the more serious yet insufficiently addressed public health problems of our time. Therefore, it is of paramount importance to understand the full range of risk factors for low physical activity (Vancampfort, Stubbs, & Koyangi, 2017).

Having a mood disorder such as anxiety or depression is a known risk factor for low physical activity (WHO, 2019). In a large multi-country study, the prevalence of low physical activity was significantly higher in those with anxiety symptoms (22.9%) than without anxiety symptoms (16.6%: Stubbs et al., 2017). Furthermore, a recent systematic review found that higher sedentary behaviour increases the odds for anxiety (Allen, Walter, & Swann, 2019). In another systematic review, potential beneficial effects of regular physical activity in reducing anxiety symptoms in older adults have been shown (Mochcovitch, Deslandes, Freire, Garcia & Nardi, 2016).

Less is known about the correlates of low physical activity in persons with anxiety symptoms in Africa, including South Africa. Vancampfort and colleagues (2017) analysed data on correlates of low physical activity in people with anxiety symptoms from the World Health Survey in 46 low- and middle-income countries. Some of the socio-demographic correlates included older age and being unemployed, health variables (poor sleep/energy, worse cognition, pain/discomfort, and mobility difficulties), and health risk behaviour (inadequate vegetable consumption). In a community-dwelling sample of older adults (≥ 65 years) with anxiety symptoms in six middle-income countries, including Ghana and South

Africa (Vancampfort et al. 2018), correlates of low physical activity included older age, male gender, less consumption of alcohol, mild cognitive impairment, pain, and a wide range of somatic co-morbidities.

Goal of the study

Identifying correlates of low physical activity in adults with anxiety symptoms, can help in developing promising intervention strategies to reduce low physical activity in this population. The present study utilised a large sample and aimed to assess correlates of low physical activity in adults with anxiety symptoms in South Africa.

Methods

Sample and procedure

The data for this study are from the cross-sectional South African National Health and Nutrition Examination Survey (SANHANES-1; 2012). The study included 1 811 persons 15 years and older (median age 40 years, interquartile range = 28) with self-identified anxiety symptoms and provided their self-reported physical activity measurements. Details of the sampling and data collection methods have been previously described (Shisana et al., 2013). The individual response rate in the survey was 92.6%. Written informed consent was obtained from study participants. The study protocol was approved by the Research Ethics Committee (REC) of the Human Sciences Research Council (REC 6/16/11/11).

Measures

Anxiety was assessed with the question: “Overall, in the past 30 days, how much of a problem did you have with worry or anxiety?” Responses were grouped as: none or mild = 0; and moderate, severe or extreme = 1 (Shisana et al., 2013).

Physical activity was assessed with the General Physical Activity Questionnaire (GPAQ: Armstrong & Bull 2006; WHO, 2009). It measures the number of days and time duration of physical activity in a usual week in three

domains: work, transport, and leisure time. Results were grouped into high, moderate, and low physical activity according to GPAQ guidelines (WHO, 2009).

Socio-demographic data included sex, age, population group, employment, and residential status.

Functional disability was assessed with the 12-item WHO Disability Assessment Schedule, version 2.0 (WHODAS-II: Üstün, Kostanjsek, Chatterji & Rehm, 2010). The summed WHODAS-II score was transformed into scores of 0–100; with ≥ 25 representing moderate to extreme functional disability (Üstün et al., 2010).

Cognitive impairment was assessed with two questions: “How much difficulty did you have with concentrating or remembering things? How much difficulty did you have in learning a new task (e.g., learning how to get to a new place, learning a new game, learning a new recipe)?” Response options ranged from 1 = none, to 5 = extreme (Shisana et al., 2013). From the summed scores, scores ranging between 6 and 10 were defined as cognitive impairment.

Visual difficulties were assessed with two questions on difficulties of near and distant vision.

Hearing difficulties were measured with two items: “Hearing someone talking on the other side of the room in a normal voice” and “Hearing what is said in a conversation with one other person in a quiet room.” Responses ranged from 1 = none, to 5 = extreme or cannot do (Shisana et al., 2013). Total scores of 6 to 10 indicated visual and hearing difficulties, respectively.

Psychological distress was assessed with the Kessler Psychological Distress Scale (K10: Kessler et al., 2002). From a total score of 10 to 50, 20 or more were classified as having psychological distress (Kessler et al., 2002; Mthembu et al., 2017). The scale yielded a Cronbach’s alpha of 0.76 in the present study.

Sleeping problems were assessed with two items. An example item includes: “Overall, in the last 30 days, how much of a problem did you have with sleeping, such as falling asleep, waking up frequently during the night, or waking up too early in the morning?” Total scores ranged between 0 and 8. A score of 4 to 8 indicates sleeping problems (Peltzer & Pengpid, 2018a).

Partial Posttraumatic Stress Disorder (PTSD) was measured with the 17-item Davidson Trauma Scale (DTS: Davidson et al., 1997), and defined as “having at least one PTSD symptom from each of the three PTSD symptom clusters” (Breslau, Lucia, & Davis, 2004, p. 1205). The Cronbach’s alpha for the DTS was 0.97 in this study.

Bodily pains were measured with the question: “How much bodily aches or pains did you have?” Responses were grouped into having bodily pains (severe, extreme/can’t do) = 1 and not having bodily pains (none or mild or moderate) = 0 (Shisana et al., 2013).

A health care provider diagnosed chronic conditions. These included: High blood pressure, stroke, heart disease, a heart attack or angina (chest pains), high blood cholesterol, high blood sugar, or sugar diabetes (Shisana et al., 2013).

Tobacco use was assessed with items regarding the history of tobacco smoking and use of other tobacco

products, duration and frequency of use (Shisana et al., 2013).

Problem drinking was assessed with the Alcohol Use Disorders Identification Test–Consumption (AUDIT-C: Bush, Kivlahan, McDonell, Fihn & Bradley, 1998). The AUDIT-C yielded a Cronbach alpha score of 0.89 in the present study.

Fruit consumption was measured with the question: “How many fruits do you usually eat per day?” Similarly, vegetable consumption was measured with the question: “How many portions of vegetables, excluding potatoes, do you usually eat per day?” Response options were 1 = 4 or more per day, 2 = 1–3 per day, 3 = not every day, but 4 or more a week, 4 = not every day, but less than 4 per week, and 5 = none (Shisana et al., 2013).

Data analysis

Data analysis was conducted with STATA software version 14.0 (Stata Corporation, College Station, TX, USA), considering the complex sampling design. Parametric tests were used to calculate differences in proportions. Multivariable logistic regression was used to calculate odds ratios and confidence intervals of the independent variables with low physical activity. Independent variables that had at a significance level of $p < 0.1$ in bivariate analysis were subsequently included in the multivariable model. A $p < 0.05$ was considered significant.

Results

Sample characteristics

Overall, 42.2% of the study population with anxiety engaged in low physical activity. Based on bivariate analysis, physical activity was significantly lower among older adults, women, those who were unemployed, with functional disability, cognitive impairment, visual difficulty, hearing difficulty, psychological distress, sleep problems, bodily pain, and hypertension. As indicated in Table 1, stroke experience was significantly higher among those with low physical activity, and problem drinking was significantly lower among those with low physical activity.

Associations with low physical activity

In the final logistic regression model, older age, being female, urban residence, functional disability, and stroke were significantly positively correlated with low physical activity. Additionally, as indicated in Table 2, current tobacco use and binge drinking were significantly negatively associated with low physical activity.

Discussion

The present study is one of the first to examine correlates of low physical activity among adults with anxiety in Africa. In all, 42.4% of adults with anxiety engaged in low physical activity, which is lower than in the general adult population in South Africa (48.2%: Pengpid, Peltzer & Phaswana-Mafuya, 2018) and higher in people with anxiety in the 46 country study (33.1%: Vancampfort et al., 2017).

In terms of socio-demographics, the correlates of low physical activity among the adults with anxiety, older age, female sex, and urban residence were associated with low

Table 1. Sample characteristics in individuals with anxiety by physical activity

Variable	Sample	Low physical activity		
		No	Yes	<i>p</i> -value
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
<i>Socio-demographics</i>				
All	1 811	57.6	42.4	
Age in years				
15–24	330 (19.1)	21.5	15.8	< 0.001
25–44	591 (40.4)	42.8	37.2	
45–64	572 (26.7)	27.7	25.4	
65 or more	317 (13.8)	8.1	21.6	
Gender				
Female	1 163 (61.0)	57.2	42.8	0.006
Male	635 (39.0)	66.2	33.8	
Population group				
Black African	1 405 (85.5)	85.0	86.3	0.498
White	62 (6.8)	7.9	5.3	
Coloured	202 (3.9)	3.7	4.3	
Indian or Asian	120 (3.7)	3.4	4.1	
Employment status				
No	1 276 (72.5)	69.5	76.6	0.048
Yes	423 (27.5)	30.5	23.4	
Residence				
Rural	717 (42.7)	45.5	38.8	0.092
Urban	1 094 (57.3)	54.5	61.2	
<i>Health status</i>				
Functional disability (25 or more)	589 (33.4)	25.9	44.8	< 0.001
Cognitive impairment (scores 6–10)	572 (29.3)	21.7	39.8	< 0.001
Visual difficulty (scores 6–10)	375 (19.0)	13.2	27.1	< 0.001
Hearing difficulty (scores 6–10)	190 (10.5)	5.5	17.4	< 0.001
Psychological distress	958 (52.1)	49.4	56.0	0.042
Sleep problems	671 (36.3)	30.5	44.3	< 0.001
Partial PTSD	186 (12.2)	13.1	10.9	0.307
Bodily pain (severe/extreme)	316 (17.0)	13.0	22.5	< 0.001
Hypertension	568 (27.2)	22.8	33.2	< 0.001
High cholesterol	132 (8.4)	8.8	7.8	0.621
Diabetes	202 (10.9)	9.7	12.5	0.198
Stroke	84 (4.3)	3.2	5.8	0.048
Heart disease	102 (5.1)	5.3	4.7	0.593
Angina	196 (11.2)	10.7	11.8	0.543
<i>Health risk behaviour</i>				
Current tobacco use	392 (21.5)	23.7	18.5	0.070
Problem drinking	367 (20.6)	24.6	15.2	< 0.001
Fruits (less once/day)	920 (48.5)	48.8	48.1	0.836
Vegetables (less once/day)	866 (48.7)	51.1	45.5	0.146

physical activity. Previous studies reported older age as a correlate of low physical activity in persons with anxiety (Vancampfort et al., 2017, 2018). The higher risk of low physical activity in older age may be related to the greater chance of developing chronic conditions with ageing (Vancampfort et al., 2018; Watson et al., 2016). Previous studies in the general adult population, including in South Africa, also confirm the association between female sex, urban residence, and low physical activity (Pengpid et al., 2018). Persons residing in urban areas are more likely to work in offices, with more sedentary lifestyles; and individual living in rural areas are more likely to work agriculture, which is more labour intensive. This may explain the urban-rural differences in the prevalence of low physical activity. Males generally work in more labour

intensive activities than females, which may explain sex differences.

Regarding health status variables, functional disability and stroke were significantly positively associated with low physical activity. In addition, in the bivariate analysis, cognitive impairment, visual difficulty, hearing difficulty, hypertension, bodily pain, and poor mental health (psychological distress and sleep problems) were associated with low physical activity. Similar results were found in previous studies in persons with anxiety (Pengpid & Peltzer, 2019; Vancampfort et al. 2017, 2018). Functional disability may prevent persons to engage in physical activity. It is also possible that persons with anxiety have a heightened perception about their disability and, consequently, decrease physical activity.

Table 2. Associations with low physical activity in adults with anxiety

Variable	Adjusted Odds Ratio (95% CI)	p-value
<i>Socio-demographics</i>		
Age in years		
15–24	1.56 (1.36, 1.78)	< 0.001
25–44	1.53 (1.27, 1.83)	< 0.001
45–64	2.34 (1.76, 3.12)	< 0.001
65 or more		
Gender		
Female	0.81 (0.72, 0.91)	< 0.001
Male		
Employment status		
No	1.14 (0.98, 1.31)	0.079
Yes		
Residence		
Rural	1.57 (1.23, 2.01)	< 0.001
Urban		
<i>Health status</i>		
Functional disability (25 or more)	1.43 (1.06, 1.96)	0.021
Cognitive impairment (scores 6–10)	1.06 (0.79, 1.43)	0.692
Visual difficulty (scores 6–10)	0.98 (0.92, 1.03)	0.383
Hearing difficulty (scores 6–10)	1.12 (0.73, 1.71)	0.605
Psychological distress	0.88 (0.70, 1.09)	0.254
Sleep problems	0.88 (0.64, 1.20)	0.419
Bodily pain (severe/extreme)	1.02 (0.75, 1.36)	0.917
Hypertension	0.98 (0.84, 1.14)	0.777
Stroke	1.65 (1.19, 2.27)	0.003
<i>Health risk behaviour</i>		
Current tobacco use	0.71 (0.59, 0.89)	< 0.001
Problem drinking	0.76 (0.65, 0.88)	< 0.001

In a community survey among stroke survivors in Cape Town, South Africa: “low volumes of physical activity and high amount of sedentary time” were found (Joseph, Conradsson, Hagströmer, Lawal, & Rhoda, 2018, p. 2 509). Anxiety disorders are common after stroke (Mitchell et al., 2017) and are significantly higher than in the general population (Cumming, Blomstrand, Skoog, & Linden, 2017). These results emphasise the need to provide rehabilitation strategies that increase physical activity and reduce anxiety, especially in stroke survivors. In addition, pain symptoms seem to be comorbid with anxiety (Means-Christensen, Roy-Byrne, Sherbourne, Craske, & Stein, 2008). Treatments, such as cognitive behavioural therapy, that address both physical pain and anxiety may improve management results (Vancampfort et al., 2018).

The health risk behaviours of current tobacco use and problem drinking were both significantly negatively associated with low physical activity. In a previous study, less alcohol consumption among older adults with anxiety was associated with low physical activity (Vancampfort et al. 2018); while in a study among adults in the general population in Kenya, no associations were found between tobacco use, weekly alcohol consumption, and physical inactivity (Gichu et al., 2018). This study did not find an association between inadequate fruit and vegetable consumption and low physical activity, while in some previous studies inadequate vegetable consumption was correlated with low physical activity (Peltzer & Pengpid, 2018b; Vancampfort et al., 2017).

Study limitations

The investigation was cross-sectional in nature and no causal conclusions can be drawn. Further, the exposure variable of physical activity was assessed by self-report and future studies should include objective measures. The assessment of anxiety was based on a one item screening questions and future studies may include diagnostic interviews.

Conclusion

Our findings demonstrate that socio-demographic factors (older age, being female, and urban residence), health status factors (functional disability and stroke), and health risk behaviours (no current tobacco use and no problem drinking) are associated with low physical activity among adults with anxiety in South Africa. These results may help in guiding strategies to reduce low physical activity behaviour in this adult population.

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Profiling work-related signature strengths of “Born Free” South Africans: A gender perspective

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This study investigated the importance of signature strengths of South African trainees in the hospitality industry who are the “Born Free” generation, who have only lived in a democracy, and were given equal opportunities. Utilising a cross-sectional research design, we sampled hospitality industry trainees ($n = 290$) attending a large South African university (females = 70.3%; black = 91%; mean age = 20.59 years, $SD = 3.86$ years). For the data analysis we rank order scored the hospitality trainees’ key strengths, and differentiating these by gender. Results indicated the participants to rank Honesty, Love, and Fairness as most important; while Love of learning and Self-regulation were ranked least important of the strengths. Both males and females ranked Fairness highly, while the males ranked Hope as most important, and the females viewed Honesty as an important strength. Moreover, the males scored Leadership significantly higher than the females, while the females scored Forgiveness and Kindness significantly higher than the males. Recognising the signature strengths valued by the South African “Born Free” generation may be important for their self-awareness to provide superior service to guests by using their positive skills.

Keywords: Born Free, gender, hospitality, positive psychology, signature strengths, tourism

Introduction

Knowing one’s signature strengths requires the person to understand what they are good at, and assists them in applying these strengths for optimal functioning across life domains, including work participation (Harzer & Ruch, 2013). Signature strengths refer to the character strengths which are the psychological mechanisms that enables individuals to reveal their virtues (Park, 2004). The Values in Action (VIA) recognises a set of 24 character strengths that can be identified in an individual’s thought, behaviour, and emotional processes (Peterson and Seligman, 2004). The VIA Signature Strengths is unlike moral competence research as the focus is on moral virtues as well as the propensity to conduct oneself ethically rather than following social convention (Park & Peterson, 2006). Harzer and Ruch (2013) suggest that people will choose work situations that fit their signature strengths, and that these strengths matter within vocational environments, such as the hospitality industry. Different generations may be characterised by unique signature strengths.

A generation can be described as individuals who are clustered within a range of ages, places where these individuals live, as well as important life events they experienced at critical age-linked life periods (Kupperschmidt, 2000). Three generation types are commonly identified in the literature: X, Y, Z. Generation X is also known as the Lost Generation and were born between 1966 and 1976 (Tay, 2011; Schroer, 2008). This generation tends to focus on maintaining a work-life balance and are continuously pursuing a balance between family and work (Gursoy, Maier, & Chi, 2008; Kaylene, Robert, Alfred, & Edward, 2010). Furthermore, Generation X selects work organisations that grant them a flexible work program, self-rule, stimulating yet challenging work, as well as constant prospects for professional growth

(Santos & Cox, 2000). They prefer to work on their own, are reliant on their own skills, and trust their own decisions to execute their tasks independently (Murphy, Gibson, & Greenwood 2010; Sayers, 2007).

The Y generation includes people born between 1980 and 1995. Generation Y is also known as the millennium generation (Schäffer, 2012). Generation Y was the first of the digital generations born into technological advancements and as such, they tend to be highly competent with regards to digital knowledge. Members of this generation seem to effortlessly adapt to change, they live for the moment, and they want to enjoy themselves in their various virtual networks. Additionally, Generation Y is more accepting of cultural differences (Krishnan Bopaiah, Bajaj, & Prasad, 2013) and prefer alternative work roles to traditional ones. For instance, they are adept at “multitasking” on various devices (Schäffer, 2015) and to have a consumerist culture (Bencsik, Horváth-Csikós, & Juhász, 2016; Tari, 2010).

Generation Z includes people who were born between 1995 and 2010. People from Generation Z are considered to be the “net generation,” the “Facebook-generation,” or the “Inet generation” as they were born into a highly developed digital era (Bencsik, Horváth-Csikós, & Juhász, 2016; Tari, 2011). Generation Z’s norms are unlike that of the generation before them as they are a focused, professionally motivated generation. Moreover, they are technically savvy as well as languages proficient, which makes them sought-after employees (Elmore, 2014). The Z generation prefer to work in groups rather than in isolation and like to be mentored by older workers (Iorgulescu, 2016). Many Generation Z individuals transitioned to young adulthood during the worldwide recession, and appears to be more hands-on than the Y and X generations (Bencsik, Horváth-Csikós, & Juhász, 2016; Tari, 2011).

In the South African setting, members of the Born Free generation, who were born around 1994 have only lived in a democratic South Africa and with some currently attending higher education institutions in South Africa (Jansen & Christie, 1999). They are predominantly Generation Z and are entering the workplace now. Their signature strengths have not been explored, although these would be important for their vocational preferences and counselling. We sought to ascertain the signature strengths of Born Free South Africans, which could be used to create their vocational profiles.

Signature strengths

Peterson and Seligman's (2005) Values in Action (VIA) Inventory of Signature Strengths with regard to positive personality traits reveals what is good, moral, and practical about an individual. The 24 signature strengths are divided into six broad virtues:

- Wisdom (strength of head), which includes the following strengths: Creativity, Curiosity, Judgment, Love of learning, and Perspective;
- Courage (strength of heart), which includes Bravery, Perseverance, Honesty, and Zest;
- Humanity (strength of others), which includes Love, Kindness, and Social intelligence;
- Citizenship (strength of community), which includes Teamwork, Leadership, and Fairness;
- Temperance (strength of self), which includes Forgiveness, Humility, Prudence, and Self-regulation; and
- Transcendence (strength of spirit), which includes Appreciation of beauty and excellence, Gratitude, Hope, Humour, and Spirituality.

A strength contributes to various accomplishments in order to establish a good life for oneself and others. Even though strengths and virtues determine how an individual cope with adversity, the focus of a signature strength is on how to fulfil an individual (Govindji & Linley 2007; Peterson & Seligman, 2004; Proctor, Maltby, & Linley, 2011). People use their most important strengths to flourish and lead fulfilling lives (Seligman, Steen, Park, & Peterson, 2005).

Linley, Nielsen, Gillett, and Biswas-Diener (2010) suggest that using signature strengths could be associated with setting and pursuing goals for oneself, needs satisfaction, and ultimately life satisfaction. Therefore, identifying valued signature strengths could be used to enable students to recognise, comprehend, and influence their passion, as well as to develop their own strengths, which will allow their distinctive brilliance to develop. The awareness and the use of personal strengths could enrich a student's learning process at university and subsequently enhance his/her future professional performance (Saldanaa et al., 2013). Subsequently, students could capitalise and build on their signature strengths. Allan and Duffy (2014) reported the use of signature strengths to enhance academic and life pursuits of students. However, people may not be aware of their strengths and how best to tap into them to flourish in their work lives (Govindji & Linley, 2007; Harzer & Ruch, 2013).

The South African context and the Born Free generation

Born Free South African students, who have only lived in a democratic South Africa, are currently attending higher education institutions (Jansen & Christie, 1999). Conradie and Brokensha (2014) refer to the Born Free South African generation with an extensive set of shared characteristics; namely that they have no personal recollection of apartheid, and have observed several peaceful, democratic elections and a myriad of ventures aimed at redressing inequalities as a result of apartheid. Nevertheless, the Born Free generation's everyday life continues to be marked by prevalent and systemic racialized advantages and disadvantages; with the latter including lower rates of school completion than those of the previous generation, and higher levels of unemployment (Conradie & Brokensha, 2014).

Members of the Born Free generation have experienced consecutive democratic elections, with fading relations to a long-gone era (Roberts, 2014). Members of the Born Free generation were expected to reveal different values and citizenship norms when compared to older citizens; including a more profound obligation to support transformation and redress the inequalities of the past. This generation has the news delivered by a transformed public broadcaster, and they have access to privately owned radio and television news sources, as well as access to private and international news on subscription satellite television stations (Hadenius, 2001). A significant minority of them enrol into universities that were once barred from admitting black students without a permit (Jansen & Christie, 1999). A diverse range of growth-oriented economic government interventions and reforms resulted in higher living standards for the general population as well as an emerging middle class (Mattes, 2012). South Africa's implementation of post-apartheid affirmative action policies and legislation, also termed "employment equity" and "black economic empowerment," has benefited members of the Born Free generation who are living in homes with parents who have profited from these policies (Mattes, 2012). Nonetheless, the Born Free generation is attuned to historic legacies (Durrheim & Dixon, 2010; Mattes, 2012) and sensitive to attitudinal fault lines which have been transferred by previous generations to this new generation in South Africa, regardless of gender.

Gender differences

Gender is an important prism by which people experience their social worlds. In patriarchal societies, men and women are predestined to perform different social roles. (Wood & Eagly, 2002). Gender stereotypes develop because people observe the actions performed by men and women in societal roles and interpret these gender-typical outlooks (Eagly & Wood 2012). For instance, women are more likely to assume the role of caring for their offspring. Therefore, women are assumed to be more communal than men. As a result, role-based interpretations then inform gender stereotypes in the same manner as they inform other group stereotypes (Koenig & Eagly 2014). For that reason, in traditionalist patriarchal society men and women may be believed to have gender-based signature strengths

(Peterson & Seligman, 2004). Previous research (Brdar & Kashdan, 2010; Linley, Maltby, Wood, Harrington, Peterson, & Seligman, 2007; Littman-Ovadia & Lavy, 2012; Miljković & Rijavec, 2008) suggested that men scored higher than women on creativity; while men scored lower than women on interpersonal strengths such as love, kindness, and social intelligence (see also Heintz, Kramm, & Ruch, 2017; Ovejero & Cardenal, 2011).

Goals of the study

The objective of this study was to identify the most important signature strengths of Born Free hospitality and tourism students and to identify possible differences based on gender. Our specific aims were to:

- Determine the character strength profile of prospective employees in the hospitality industry;
- Classify Born Free South African hospitality trainees according to the signature strengths they value; and
- Determine if gender differences exist with regard to the signature strengths they value.

Method

Participants and setting

Participants were 290 hospitality management, culinary management, and tourism management students from a tertiary institution in Gauteng, South Africa. The sample consisted of 204 female trainees (70.3%) and 84 male trainees (29%). The sample consisted mostly by black students (264; 91%), followed by white (14; 4.8%), coloured (10; 3.4%), and Indian students (2; 0.7%). The sample had a mean age of 20.59 with 267 trainees between 18 and 23 years old. The trainees were in their first, second, and third year of training.

Measuring instruments

The participants completed a free listing of signature strengths they self-perceived and completed The VIA-120 Character Strength Survey (McGrath, 2017). In addition, they completed a demographic questionnaire on their age, race, gender, and educational level.

Listing of top five signature strengths

We asked a separate subsample of 106 hospitality trainees (females = 81.1%) to list their choice of the top five character strengths for individual development purposes which served as a pilot study. This was followed by the data collection for this study in which we asked another 290 (females = 70.3%) to also list their top five character strengths to allow for a consensus assessment of the signature strengths in this population.

VIA Strength Survey

The VIA-120 Character Strength Survey measures 24 character strengths (Peterson & Seligman, 2004). Scores from the VIA-120 Character Strength Survey achieved an average internal consistency for reliability of 0.79 in a previous study (Peterson & Seligman, 2005). In the current study, the reliability of scores from the VIA-120 Character Strength Survey, ranged between 0.70 and 0.84 for the respective strengths with a mean reliability of 0.78 for the measure overall.

Procedure

The Ethics Committee of the University of Johannesburg, South Africa approved of the study (FAREC2017STH02). Participants provided informed consent to take part in the study. We informed the participants that the study was on a voluntary basis and that they had the right to withdraw from the study at any time. The participants took the surveys online in a computer laboratory at the university. The participants immediately received feedback on their responses upon completion of the survey. The VIA website contains detailed explanations of each of the 24 strengths, which the respondents could access after they had completed the survey. Additionally, the respondents could download their Signature Strengths Report if they elected to.

Data analysis

We analysed the data utilising the SPSS program 25 (IBM, 2018). Descriptive statistics, including mean, standard deviations, skewness (scores between 2 and -2), kurtosis (scores between 4 and -4), and frequencies statistics, were used to determine the scores on each signature strength. The top five signature strengths were ranked per gender using the Wilcoxon signed rankings test. *T*-test significance tests were conducted to determine whether there were any differences based on gender (Pallant, 2009). Cohen's *d* (1992) was calculated to determine the effect sizes of the differences based on gender.

Results

Table 1 indicates the descriptive statistics for the signature strengths. The results show that Honesty, Love, Humour and fairness, Gratitude, and Kindness were scored the highest. Overall, the sample rated most signature strengths scores high, with scores above 4, while a slightly above average score was found for Self-regulation.

Table 2 reports the signature strengths rated as most important by the Born Free hospitality trainees. It is evident that Honesty, Gratitude, Fairness, Love, Hope, and Kindness, were rated the most important for Sample 2. Further, the results indicated that, for women, Honesty, Gratitude, Fairness, Love, and Kindness were most important; while men rated Fairness, Hope, Honesty, Love, and Gratitude as most important.

Table 3 indicates that Love of learning, Self-regulation, Curiosity, Social intelligence, and Judgement were amongst the lowest rated signature strengths with regard to what Sample 2 deemed important. Table 4 shows that men scored Leadership higher than women did, while women scored Forgiveness and Kindness higher than men did. No other signature strengths were rated differently according to gender.

Discussion

Overall, the participants nominated Honesty, Gratitude, Fairness, Love, and Hope as the top five strengths (see Seligman et al., 2005). Honesty was found to be one of the most revered character strengths and a pre-requisite for a rewarding life, as it enriches relationships with others; especially when combined with Gratitude as a strength. When the Honesty strength is combined with the Fairness

Table 1. Descriptive Statistics of Signature Strengths ($N = 290$)

	Full sample		Men			Women		
	Mean	Std.	Mean	Std.	Rank	Mean	Std.	Rank
Appreciation of beauty	4.30	0.73	4.38	0.744	6	4.29	0.731	7
Bravery	3.92	0.67	3.80	0.70	16	4.00	0.66	15
Love	4.41	0.69	4.53	0.51	4	4.38	0.75	4
Prudence	3.92	0.54	3.73	0.46	14	3.98	0.55	17
Teamwork	4.32	0.60	4.27	0.59	8	4.33	0.60	6
Creativity	3.98	0.75	4.24	0.75	9	3.87	0.73	16
Curiosity	4.00	0.65	4.00	0.56	18	4.00	0.69	20
Fairness	4.52	0.69	4.56	0.71	1	4.51	0.69	3
Forgiveness	3.83	0.68	3.60	0.50	22	3.93	0.72	14
Gratitude	4.50	0.70	4.44	0.62	5	4.60	0.67	2
Honesty	4.63	0.51	4.50	0.51	2	4.69	0.50	1
Hope	4.47	0.62	4.44	0.65	3	4.49	0.61	11
Humour	4.33	0.72	4.26	0.69	7	4.36	0.74	8
Perseverance	4.31	0.70	4.32	0.67	12	4.31	0.72	10
Judgement	4.16	0.52	4.20	0.52	19	4.14	0.52	19
Kindness	4.48	0.53	4.26	0.56	11	4.57	0.50	5
Leadership	4.34	0.48	4.44	0.51	13	4.29	0.46	12
Love of learning	3.46	0.84	3.08	0.90	24	3.59	0.78	21
Humility	4.05	0.59	3.92	0.64	17	4.10	0.59	18
Perspective	4.23	0.60	4.14	0.73	15	4.28	0.51	13
Self-regulation	3.37	0.59	3.59	0.62	21	3.27	0.56	23
Social intelligence	3.95	0.66	3.91	0.60	23	3.96	0.70	24
Spirituality	4.48	0.80	4.61	0.61	10	4.43	0.86	9
Zest	4.21	0.53	4.14	0.66	20	4.25	0.44	22

Note. Ranked from 1 (most important) to 24 (least important)

Table 2. Top signature strengths ($N = 290$)

Variable	Full sample	Male	Female
	Frequency (%)	Frequency (%)	Frequency (%)
Honesty ¹	154 (53.2%)	43 (51%)	111 (54%)
Gratitude ²	121 (41.7%)	33 (39%)	89 (43%)
Fairness ³	130 (44.8%)	50 (60%)	80 (39%)
Love ⁴	112 (38.6%)	36 (43%)	76 (37%)
*Hope ⁵	94 (32.4%)	40 (48%)	45 (22%)
**Kindness	86 (29.6%)	16 (19%)	68 (33%)

Note.

¹Honesty ranked higher than gratitude, fairness love and kindness for both women and men while it ranked lower than hope for men.

²Gratitude ranked higher than fairness, love and hope for women and lower than fairness and love for men.

³Fairness ranked higher than love and kindness for men and lower than hope and kindness for women.

⁴Love ranked higher than kindness and kindness for women and lower than hope for men.

⁵Hope ranked lower than kindness for women and higher for men.

Table 3. Lowest scoring signature strengths ($N = 290$)

Variable	Full sample	Male	Female
	Frequency (%)	Frequency (%)	Frequency (%)
Love of learning ¹	10 (3.4%)	0 (0%)	10 (5%)
Self-regulation ²	10 (3.4%)	5 (5.9%)	5 (2%)
Curiosity ³	21 (7.2%)	8 (10%)	11 (5%)
Social intelligence ⁴	21 (7.2%)	4 (4.7%)	5 (2%)
Judgement	29 (10.1%)	8 (10%)	19 (9%)

Note.

¹Love of learning ranked lower than self-regulation, curiosity, social intelligence and judgement for both genders.

²Self-regulation ranked lower than curiosity, social intelligence and judgement for both genders.

³Curiosity was higher than social intelligence and lower than judgment for both genders.

⁴Social intelligence ranked higher than judgment for women and lower than judgment for men.

Table 4. *T*-test significance test based according to gender

Variable	Gender		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	Men	Women			
Leadership	4.44	4.29	-1.26	0.04*	0.31
Forgiveness	3.60	3.93	2.15	0.03#	0.54
Kindness	4.26	4.57	2.13	0.03#	0.58

Note. *Equal variance assumed; #Equal variance not assumed

strength, these individuals contribute to shaping a better society or country, as they have the ability to make reasonable choices and are stable with regard to their personal morals as well as their behaviour (Castro Solano & Cosentino, 2016). This strength is valuable when dealing with tourists and guests in making them feel welcome and comfortable and giving them an authentic experience while traveling, which builds positive relationships and perceptions about South Africa.

Gratitude had the second highest score in the present study. Gratitude studies have revealed that higher levels of gratitude are connected to an array of positive indicators of well-being (Emmons & McCullough, 2003; Wood, Maltby, Gillett, Linley, & Joseph, 2008). The concept of gratitude speaks to individual differences with regard to the regularity and intensity of being grateful (McCullough, Emmons, & Tsang, 2002). Furthermore, gratitude is described as a strength that offers a vast sense of being connected to a higher meaning and purpose than one's self (Peterson & Seligman, 2004). This strength could lead to the person experiencing flow. Seligman and Csikszentmihalyi (2000) describe flow as the state in which individuals are so intensely involved in an activity that nothing else seems to matter. The activity is therefore so enjoyable that individuals will perform it for the sheer sake of doing it, even at great personal cost. Flow has also been described as a fleeting, intrinsic experience (Bakker, 2005), and a strength in the tourism sector for working with local and international guests seeking flow experiences. The students' use of their Gratitude strength will thus aid in enhancing tourists' experiences.

Fairness was rated third in terms of the highest scoring signature strengths. The respondents valued fairness as a means of caring, which includes empathy and compassion for others, in other words, the ability to put oneself in somebody else's shoes (Peterson & Seligman, 2004). Jauhari (2017) suggests that fairness is a worthy attribute for employees in the hospitality and tourism sector, as these employees are able to elevate guest experiences from simple interactions to unforgettable experiences by showing empathy and compassion towards their colleagues, staff, and guests. Castro Solano and Cosentino (2016) suggest that fairness is a key character strength in working well with others. This includes the ability to be a respectable colleague with a strong sense of responsibility, especially to fellow colleagues, and being fair and impartial during social interactions.

The fourth highest scoring strength was Love. This suggests that the respondents value close relationships with their fellow humans, and, in particular, with those individuals who reciprocate care. The signature strength Love is interpersonal, and is typically noteworthy in

one-on-one relationships (Peterson & Seligman, 2004). This is a valuable attribute to have when working with guests in a service sector such as hospitality or tourism. The Marketing Science Institute (MSI) (2010) increasingly perceives non-transactional actions (for example word-of-mouth endorsements, customer exchanges amongst one another, blogging, and written assessments) as means to create, build, and improve customer and organisational relationships. Possessing the strength of Love will likely also enhance engagement. Keller (2003) explains the significance of engagement in brand management by indicating that consumer engagement incorporates psychological and behavioural customer brand connections outside of the purchase. These consumer behaviours meaningfully foretell consumers' behavioural loyalty towards tourism brands and hospitality brands (So, King, Sparks, & Wang, 2016).

Hope was scored fifth highest. Thus, strength signifies an expectation of the best future possible and working towards achieving that future (Peterson & Seligman, 2004). This strength is a valuable asset, as tourism and hospitality employees ensure repeat business from guests in hotels and tourists visiting South Africa. This strength allows employees to be engaged in their work and enables them to dedicate their energy to enthusiastically pursuing their objectives. Employees with the character strength of hope have the ability to execute service delivery and complaint-handling processes in a superior manner (Bakker & Demerouti, 2008; Ouwenel, Le Blanc, Schaufeli, & Van Wijhe, 2012). Kahn (1990) suggests that employees who display high levels of hope use their physical, cognitive, and emotional drive to follow approaches to their work that enhance their work engagement. Front-of-house employees who are frequently in contact with customers and who display high levels of hope often have positive moods, as well as a positive outlook with regard to goal achievement (Karatepe, 2014; Yavas, Karatepe, & Babakus, 2013).

Lowest scoring strengths

The lowest scoring strengths amongst the Born Frees were Love of learning, Self-regulation, and Curiosity. Love of learning describes the manner in which an individual engages with new information and skills. It is a strength that educators appreciate as a trait in their students, parents encourage this trait, and employers endeavour to nurture this trait in their employees (Peterson & Seligman, 2004, p. 163). Love of learning has substantial motivational significance, as it supports individuals in persevering when faced with stumbling blocks, and gives them the ability to cope when they receive adverse feedback (Peterson & Seligman, 2004). Lashley and Barron (2006) suggest that hospitality students have learning style preferences

that are thought provoking to educators when developing learning outcomes for higher education. The hospitality students in their study had a preference for learning styles that were concrete rather than abstract, and active rather than reflective. Similarly, the respondents in the present study were hands-on, and preferred to learn by doing and applying, mostly with concrete objects, rather than focusing on theory. Tourism and hospitality courses could include more vocational subjects to accommodate Born Free students and to increase their love of learning.

The Self-regulation strength is the ability of an individual to regulate and manage his/her emotions and stay motivated, even in the absence of external support. Self-regulation is, however, a resource that can be exhausted (Peterson & Seligman, 2004). Haver, Akerjordet, and Furunes (2014) suggest that an individual who displays judicious emotional regulation applies a variety of strategies, depending on the situation. Therefore, these strategies could be applied to improve hospitality management training and to prepare hospitality students to display appropriate behaviour in their future jobs.

The Curiosity strength describes individuals who explore new ideas, undertakings, and experiences. Furthermore, they have a robust desire to increase their own knowledge (Peterson & Seligman, 2004). Reio and Callahan's (2004) study in service organisations suggests that there is a complex relationship between curiosity and learning, which occurs during positive employee socialisation, and which aids individuals' best job performance. Their findings show the significance of creating workplace conditions that favour curiosity and active information-seeking in the workplace. The Born Free respondents in the present study are very partial to social media, and this tool could be used to stimulate their curiosity.

Gender and signature strengths

In terms of the top-rated strengths, males viewed Fairness, Hope, and Honesty as most important, while females ranked Honesty, Gratitude, and Fairness as the most important of the 24 VIA signature strengths. Many studies have found that men and women have different experiences relating to their personal and work lives (cf. Biswas-Diener, 2006; Brdar & Kashdan, 2010; Ovejero & Cardenal, 2011). Castro Solano and Cosentino (2016) reported that women place more prominence on their character strengths than men do.

In the present study, Honesty and Fairness were rated as the most important VIA signature strengths by both genders. The Honesty strength's focus is on a rewarding life, which both genders value, as it enriches relationships with others, especially when combined with the Gratitude strength (Castro Solano & Cosentino, 2016), which is very important to Born Free women. The Fairness strength emerged as a key character strength rated by the sample of trainees which indicates that both genders value the ability to work well with others within the tourism sector. Furthermore, the Fairness strength points to the ability to be a decent person, one with a strong sense of duty, especially towards colleagues, staff members, and guests.

Both genders indicated the importance of fairness and impartiality in social interactions, which would facilitate dealing with demanding guests (Castro Solano & Cosentino, 2016). The Honesty and Fairness strengths were the two top strengths for both the Born Free men and women. The Born Frees will contribute to forming a better society or country, as they make reasonable choices and are stable with regard to their personal morals and behaviour (Castro Solano & Cosentino, 2016). Moreover, these future employees have the ability to execute service delivery and complaint-handling processes in a superior manner (Bakker & Demerouti, 2008), ensuring the best possible service for their guests and tourists, who can be very demanding.

Love of learning showed the lowest ranking by men, while it was third lowest for women. The rest of the lowest ranking strengths shared similar places among the genders. As previously suggested, a love of learning can be cultivated by making learning more hands-on, as tourism and hospitality Born Free students prefer to learn practically and in concrete and active ways, from peers, and through the use of social media. Background, upbringing, and the environment of the Born Free generation might influence the ranking of strengths. Mattes (2012) reported that the Born Free generation in South Africa experiences persistent levels of poverty and high levels of unemployment, inequality, and hopelessness.

The results further revealed that gender may affect their position on signature strengths, as well as how these are experienced. For example, in another study, men scored Leadership higher, while women scored Forgiveness and Kindness higher (cf. Miljković & Rijavec, 2008). Based on patriarchal social and cultural expectations placed on men, they are often viewed in a position of power and place importance on work- and life roles where they are leaders (Messner, 1998). Therefore, women may place less importance on leadership. Kindness is important in the hospitality environment as it enhances the guests' experience by making guests feel welcome and nurtured. Within a patriarchal society, of which there are many in South Africa, women are associated with feminine roles such as caring, kindness, and forgiveness (Gilligan, 1982; McGrath, 2015).

Limitations of the study

This study had the following limitations: a cross-sectional design was used, which measured the perceptions of tourism and hospitality Born Free students at a specific time and place. A longitudinal study would give deeper insights into this population's signature strengths. Only one school of tourism and hospitality was measured at one university in South Africa; similar studies could be expanded to measure various schools or colleges that specialise in this industry. In this study, the only construct measured was signature strengths. More constructs could be added and measured together with the signature strengths, such as resilience and flow. Interventions to improve signature strengths in tourism and hospitality training could be developed, as well as industry interventions.

Conclusion

Understanding the signature strengths of hospitality and culinary management trainees who enter the service industry will encourage team work, self-awareness, and enable them to use their strengths to create favourable guest experiences within their establishments; thereby ensuring repeat business, growing the tourism sector, and encouraging tourists and guests to visit South Africa again. Often, Born Free students have not been exposed to the glamorous tourism and hospitality industry. These environments are new to them, and they bring a different perspective to this industry, one which is based on their world view and reality. This research contributes to recognising the valued signature strengths of tourism and hospitality Born Free students, in hopes that academia and the industry will equip them with self-awareness that they may provide a superior service to tourists and guests by using skills that come naturally to them.

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The psychosocial needs of parents of adolescents who attempt suicide

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This qualitative study explored and described the psychosocial needs of parents of adolescents who had recently attempted suicide. Ten purposively selected parents (females = 10; age range 29 to 59) participated in semi-structured individual interviews on their lived experiences after their child attempted suicide. Thematic analysis of the data revealed the parents' psychological needs after the attempted suicide by their minor child to be characterised by emotional turmoil including feelings of regret, self-blame, guilt, fear, and anxiety. The parents' social needs included resources for rebuilding their disturbed family relationships and coping mechanisms. Mental healthcare providers to parents of adolescents who survive suicide attempts should aim to help parents manage the complex feelings they experience and improve their self-awareness and parenting skills to prevent future adolescent suicide attempts.

Keywords: adolescent, family, parent, parenting, South Africa, suicide attempt

Introduction

The attempted suicide of an adolescent child is a disruptive event that evokes complex feelings in parents (Greene-Palmer et al., 2015). Adolescents who have attempted suicide before or who have a tendency to self-harm are at risk of future suicide attempts and completed suicide (Asarnow, Berk, Zhang, Wang, & Tang 2017). Around a third of adolescents with suicidal ideation proceed to develop a suicide plan. Sixty per cent of those may attempt suicide within the first year of ideation (Nock et al., 2013; McLoughlin, Gould, & Malone, 2015). Healthcare providers and parents should be aware of how suicidality may progress in adolescents (Holland, Vivolo-Kantor, Logan, & Leemis 2017).

Risk for self-harm among adolescents calls for psychosocial interventions for families affected by suicidal attempts to help them prevent repeat attempts, which could result in fatality (Hawton, Saunders, & O'Connor, 2012). With appropriate and timely help, family members of adolescents with attempted suicide may be better able to prevent future attempts through closer engagement with the child who has attempted suicide (Grant, Ballard, & Olson-Madden, 2015). We sought to explore the lived experiences of South African parents of children with attempted suicide.

Prevalence of suicide among adolescents and young people

Suicide and accidental death from self-harm was the third leading cause of adolescent mortality in 2015, resulting in an estimated 67 000 deaths (World Health Organization [WHO], 2016; 2017). Death by suicide accounts for an estimated 6% of all deaths among young people, and is the second leading cause of death among 15–29 year olds, globally. For each suicide, there are more than 20 suicide attempts (WHO, 2016).

In South Africa, about 7.2% of 3 000 adolescents reported suicide ideation, while 5.8% reporting suicidal plans, and 3.2% reporting suicidal attempts in the month before the survey (Cluver, Orkin, Boyes, & Sherr, 2015).

While death by suicide is difficult to predict, symptoms common to these disorders, such as affective and behavioural dysregulation were stronger predictors of recurrent suicide events than the actual diagnosed disorder (Yen et al., 2013). Apart from psychopathology, other factors that increase the risk of suicide in adolescents include impulsivity, delinquency, alcohol problems, and family and friend suicide history (Thompson & Swartout, 2018).

Parent involvement in suicide risk among adolescents

Multiple studies have highlighted the association between disturbed parent adolescent relationships and suicide risk. The risk of suicide is intensified by authoritarian parenting styles, low parental warmth, low support, lower attachment, and lower familial adaptability and cohesion (Miller, Esposito-Smythers, & Leichtweis, 2015; Sheftall, Mathias, Furr, & Dougherty, 2013; Singh & Behmani, 2018). Adolescents with lower parental care are more likely to progress from suicide ideation to attempted suicide (Saffer, Glenn, & Klonsky, 2015). Authoritative parenting and a positive family climate are protective against suicide ideation (Consoli et al., 2013). In sub-Saharan Africa, risk of suicide planning and attempts in adolescents is higher among those with adversities such as parental death, abuse, and violence (Cluver et al., 2015).

The emotions parents experience after a child's suicide attempt are described in multiple studies to be characterised by sadness, anxiety, guilt, fear (Greene-Palmer et al., 2015), shock, surprise, and anger (Asare-Doku, Osafo, & Akotia, 2017). Parents may experience a sense of failure, rejection, isolation, incomprehension, and feelings of helplessness and powerlessness, as if they were losing control (Lachal, Orri, Sibeoni, Moro, & Revah-Levy, 2015). Similar feelings of frustration, anxiety, and helplessness were reported by parents of adolescents with a diagnosis of depression, who blamed themselves for the child's condition (Stapley, Midgley, & Target, 2016). Helplessness might be associated with hopelessness. Parents in a study by Brown (2018) who responded with

low-hope to their adolescents' mental illness, put their lives on hold and remained focused on the child's problems without making changes to their parenting interactions. Parents who view the problem as biological in nature and expect professionals to find a solution, might be reluctant to do self-discovery (Brown, 2018).

Morgan and colleagues (2013) linked the psychological distress of the parents with the magnitude of difficulties encountered by the child. There is a clear relation between successful suicide and feelings of shame and guilt in surviving family members (Hastings, Northman, & Tangney, 2002; Van Der Pol & Pehrsson, 2016). What requires more exposition though, is the role of shame and guilt in attempted suicide. Little is known about the needs of parents after a child's attempted suicide. A study conducted in the United States showed that parents have unmet needs with regards to ensuring the safety of the child (Hickey, Rosetti, & Musker, 2019). The psychosocial needs of South African parents of adolescents who attempted suicide have not been addressed by research studies.

Barriers in the mental healthcare system that hinder family involvement in the care of a relative who is at risk for suicide exacerbate parents' feelings of caregiver burden and powerlessness (Grant et al., 2015). When parents perceive the healthcare system as useless, futile, or rejecting, feelings of helplessness are reinforced (Lachal et al., 2015). On the other hand, when parents were treated with empathy, concern, and positive regard by healthcare professionals, they responded with more empathy and understanding towards their children with depression (Moran & Diamond, 2008). The mental health treatment gap and shortage of public mental health resources that exist in South Africa, may make it even more difficult for parents to obtain psychosocial support after a child's suicidal attempt (Bantjes, 2017).

Goal of the study

We sought to explore the psychosocial support needs of South African parents of children who attempted suicide. Increased awareness of the effects of suicidal attempts on families and the support required by the affected parents, may strengthen collaboration between family members and mental healthcare providers (Grant et al., 2015; Hickey, Rosetti, Strom, & Bryant, 2015; Morgan et al., 2013). This study was guided by the research question: What are the psychosocial support needs of parents of adolescents who attempted suicide and were admitted to a district hospital in South Africa?

Method

Research design

We employed a descriptive phenomenological approach for this study. Phenomenological research involves a rich description of lived experiences, where the researcher adopts an open phenomenological attitude and refrains from importing external frameworks and sets aside judgements about the research phenomenon (Finlay, 2009). We aimed to understand the psychosocial support required by parents through exploring their lived experiences

of how they made sense of their adolescents' attempted suicide.

Participants and setting

We purposively selected a sample of 10 female parents of children who attempted suicide and received services from a public district hospital in a rural area in South Africa. This area housed 21 345 people, of whom 38.8% lived in informal settlements due to the high unemployment rate of 33% (City of Tshwane, 2015, Statistics South Africa, 2016). Potential participants were identified by nurses working in the psychiatric unit of the hospital. The nurses introduced the parents to the researcher, who explained the aim of the research. The participants were all females aged between 29 to 59 years. Three were from the Tsonga culture group and seven from the Tswana group. Their educational levels ranged from Grade 7 to one participant with tertiary education. Only two were employed at the time of the study.

Data collection

The participating parents completed semi-structured individual interviews on experiences with regard to their adolescent who has attempted suicide. We asked follow up questions on the parents' thoughts and feelings about their adolescents' suicide attempt, as well as the support parents would like to receive following their adolescents' suicide attempt. For credibility and trustworthiness of the data collection, we kept field notes and worked to achieve data saturation, which we reached after the tenth interview. The first author conducted the interviews in a private office at the hospital. The interviews were conducted in English and audio-recorded. The recorded interviews were transcribed verbatim.

Procedure

The Ethical Committee of the Faculty of Health Sciences, University of Pretoria approved the study (ethical clearance number: 249/2013). Participants consented for study. We informed them that they may experience emotional discomfort while they were sharing sensitive information and also that we had a counsellor to debrief them should they require assistance with any psychological needs from the study participation.

Data analysis

We employed Braun and Clarke's (2006) method of thematic analysis to analyse the transcribed interviews. In doing so, we read through the data to obtain a general sense of the information, reflected on the overall meaning, and checked for general ideas verbalised by participants. We then generated initial codes and coded all transcripts followed by labelling the emerging themes and sub-themes.

To ensure trustworthiness of interpretations, we had an independent researcher experienced in qualitative data analysis to go through the data applying the same thematic analysis we engaged. To ensure the accuracy of the findings, we discussed any discrepancies in interpretation with the independent researcher to reach consensus on the themes.

Results

Under the theme, psychological needs, three sub-themes emerged; namely, (i) post-traumatic experiences, (ii) regret, self-blame and guilt, and (iii) fear and anxiety. The social needs were reflected in two sub-themes; namely, (i) disturbed family relationships and (ii) coping mechanisms. The findings are substantiated with verbatim quotations, indicating the participant's number and age in brackets.

Theme 1: Psychological needs

Participants expressed their psychological needs in terms of the emotional turmoil from the post-traumatic experiences following attempted suicide by their child. They also reported experiencing feelings of regret, self-blame, guilt, fear, and anxiety for which they needed mental health services.

Post-traumatic experiences

Parents experienced the suicide attempt as a traumatic event. Some participants experienced symptoms of post-traumatic stress disorder such as re-experiencing the event, avoidance, numbing and arousal (American Psychiatric Association, 2013). One participant said she vicariously re-experienced the suicide attempt as if she were present, although she was not:

After the incident I could not stay alone in the house, I had a feeling as if what happened I was present...I could not sleep with the lights off... At times I could experience this big fear as if I was on the scene... (Participant 9, 54 years)

Another parent re-experienced disturbing emotions when she visualised the suicide attempt: *"The method that she used, hanging herself, marked the most hurtful and I cry every time I imagined it"* (Participant 10, 59 years).

Similar to a traumatic event, Participant 4 (39 years) stated that she will never forget the image of her daughter in the intensive care unit:

I heard the doctor saying if she doesn't respond she will be taken to ICU [intensive care unit]. I became crazy, I thought she won't survive because my mom died in ICU. I had flashbacks...if something have happened to you it leaves a mark. I will still have her picture whilst in ICU and that day will always be remembered.

Another participant avoided talking about the incident and did not want to be reminded of it: *"It was difficult; she was on drips until she was discharged. I felt very hurt inside, I did not want to talk about it...I felt very hurt [Tears filling in her eyes]"*. Numbing is illustrated in the next quotation. The participant felt as if her life was on hold with no reason to plan for the future:

And then everything came to a standstill, there was nothing I was thinking about except him. I had plans for life and family. I am a traditional person, I was supposed to perform some rituals [cultural rituals] but I stopped...This has affected me so much in my life. Everything stopped; I did not have a plan anymore... (Participant 2, 29 years)

Participant 8 (50 years) experienced arousal symptoms and was so watchful and alert that she left her work at times and rushed home to check on the adolescent:

I'm working and he is attending school. He comes back earlier than me because I knock off late ... sometimes when I look at the time I would say he is already home and what if he thinks of killing himself again. I would leave what I was doing, pack my stuff and go home...I have to go and see what is happening.

Although all participants did not display symptoms of post-traumatic stress, they all experienced the event as traumatic and required support to overcome the disturbing experiences and emotions.

Regret, self-blame and guilt

The parents experienced regret, self-blame, and guilt related to the adolescent's suicide attempt. Participant 1 (30 years) wished she could have reversed the experience: *"I felt as if I could reverse that day, it was very painful to me and I was thinking something that is not possible: reversing it and not seeing what has happened now."*

Parents tried to find a reason for the suicide attempt and Participant 4 (39 years) blamed herself for what happened. She could not think of anything she did wrong, but reasoned that because she was with her daughter most of the time, she must be to blame:

I blamed myself that as a parent maybe I didn't do enough for her. I asked myself that maybe she had long standing problems and not knowing with whom to share with. I keep asking myself who made her sad, is it me or what, I kept asking myself questions. Initially if I failed somewhere, she could tell me that I have disappointed her or send me an SMS. Her boyfriend is in military training and I said she is with me most of the time so it's me who had bothered her.

Later during the interview, Participant 4 (39 years) revealed that her divorce might have contributed to the suicide attempt:

At some stage everybody has her own problems, I have just divorced...so I thought that she thinks that I no more have space for her and her brother and I also thought that maybe she didn't tell me her problems because she thought I also have my own burdens.

The guilt feelings were exacerbated by a remark one of the nurses made in hospital after the suicide attempt: *"When the sister asked me: 'What did you do to the child?' then I told myself that it means there is a negative role that I have played."* One of the parents was of the opinion that disciplining the child prior to the incident could have caused the suicide attempt:

I don't feel good at all...sometimes I blamed myself for shouting at her and punishing her. But I had no choice because she could sometimes stay in the bedroom the whole day without washing the dishes or cooking.... (Participant 9, 54 years)

Another participant experienced frustration and responded with verbal aggression towards the adolescent. She and her husband felt guilty about their angry responses, which might have worsened already tense relationships: "...his behaviour made us to be short tempered and shout at him when we are not supposed to..." (Participant 8, 50 years).

Some parents blamed each other for the suicide attempt. Participant 6 (40 years) felt that "my husband is partly to be blamed...", while Participant 8 related the incident to the way they disciplined the child prior to the attempt: "...we are blaming each other. His father is blaming me for shouting at him; I'm also blaming him for using strong words." Participant 5 (49 years) explained that growing up without a father figure contributed to her daughter's wish to take her own life: "I thought that maybe the fact that they grew up without their father contributed to this."

Participants did soul searching into their own behaviour and social circumstances, attempting to understand their adolescents' self-destructive behaviour. This led to guilt feelings and self-blame which affected marital and parent-child relationships.

Fear and anxiety

Participants felt tense and anxious and some anticipated another suicide attempt. Participant 4 (39 years) explained that she still did not know what caused the attempt and feared that it might happen again: "I have fear that something might happen again because it is still early and the fact that I don't know what pushed her to do that." Participant 7 (42 years) was scared by her child's disturbing profile image that might have indicated that she had planned another attempt: "Her profile picture on her phone shows her hanging and I don't know if she took it before or after the incident, that scared me and that was the reason I asked my neighbours to check on her."

Parents felt a need to constantly check on their children, even at night, to the extent of one parent following the adolescent to the bathroom for fear that he might retry suicide by using a more lethal method:

I started wondering why he was taking long inside the bathroom. I thought that maybe he has thought of doing something else. I went to check on him and I found him standing...I'm thinking that maybe I'm disturbing him psychologically and he would kill himself with something very powerful because the tablets failed. (Participant 8, 50 years)

...we think that he might attempt again, even at night I feel as if I could go into his room to enquire if he was okay or whether he had killed himself or what... (Participant 9, 54 years)

Parents became alert and overprotective to the extent of watching and accompanying the child everywhere:

...so what happened was a shock and was going to change my life completely.... I also have a fear of putting cough mixtures anywhere, so as of now I am traveling with them inside the car...she is going to live like a prisoner because I have to take her to school and fetch her. (Participant 4, 39 years)

Participant 2 (29 years) so much feared another attempt that she anticipated and experienced the pain of the loss she could have been exposed to:

Death is not a child's play, there is you won't see him anymore, I'll miss him and his deeds. Every time I would say if he was here he could be doing this and that. He is a clever boy, able to fix household stuff, people from the tavern broke my gate, so remember if he was not there, who was going to fix the gate... when I remember all these that is what hurt me, it would leave a scar for the rest of my life and I don't think that I would forget... It was painful because every child is important to his mother especially if you have seen his doing... that's why I felt pain when I think that he wanted to commit suicide, who would replace him?

It is clear from the quotations that parents need help to deal with the constant fear and anticipatory grief. Some of them realised that their intrusive behaviour might affect the adolescent in a negative way, but they fell short of more effective ways to deal with the situation.

Theme 2: Social needs

Participants' social needs revolved around the disturbed family relationships, more effective coping mechanisms, and a need for professional support.

Disturbed family relationships

In this theme parents described changes in the parent-adolescent relationship and other family relationships, after the suicide attempt. These included changes in parenting and disciplining the adolescent and the ways in which they tried to support the adolescent.

In some cases the disturbed family relationships were already present before the suicide attempt, for example, Participant 5 could not even reach out to her daughter immediately after the suicide attempt:

I felt hurt that I even cried when I looked at her inside the car to hospital, I cried that even the words that I said will not help her because she doesn't listen to me. I was heartbroken as any parent in my situation... (Participant 5, 49 years)

Participant 4 explained that "there is tension between the two of us...it frustrates me and I have million questions for her..." Participant 7 (42 years) also experienced communication difficulties because her daughter avoided discussions about the incident: "She is always busy with school work and keeping distant..."

Parents described how their adolescents' suicide attempts affected other family members who were filled with fear by what happened: "My other two kids are also affected in so much that we had to sleep at a friend's place because they were fearful" (Participant 10, 59 years). The families experienced tension and the incident affected their daily living and communication patterns: "...there is this tension in the family after the incident, we don't talk as we used to, she just say hello and went to sit in her bedroom" (Participant 4, 39 years).

Parents reported feeling ambivalent about discipline, they knew they were responsible for guiding their children, but following the suicide attempt, they were unsure about how to discipline their adolescents, or even afraid to do so. Some parents even felt that they should not discipline the child at all:

I now don't know how am I going to try and guide because I can't leave her to do as she wishes, as a parent I might not know how is she going to take it... (Participant 1, 30 years)

I think it is my responsibility to show her the correct way, but if she does this, what am I supposed to do? (Participant 3, 32 years)

In the next quotation the parents tried to avoid serious discussions with their son, feeling afraid that the confrontation would upset him:

...last night he came home late and I was very worried about that. I then told his father that when he comes back, we must call him and talk to him about his behaviour because he promised us to change. His father is also scared and he said we must not make serious meetings with him as they will make him feel scared. He said we must just tell him in passing and not seriously. That is the life that we are living now (tears flowing down her cheeks)...even if he has made mistakes we cannot reprimand him... (Participant 8, 50 years)

This theme illustrated the strained family relationships after the suicide attempt. Although the families experienced tension and fear, they did not feel comfortable enough to reach out and comfort each other.

Coping mechanisms

Coping mechanisms are discussed as a sub-theme under social needs as most participants regarded effective coping as coping that occurs within the context of the relationship with the adolescent who attempted suicide. Although parents realised that they had to support their children in one or the other way, many were unsure how to go about showing their support. Some participants did not realise the extent to which their children required support until after the suicide attempt. Participant 7 (42 years) described her willingness and commitment to support the adolescent (and other children in the family) after the suicide attempt: *"I'm going to allocate my time to be with them. I should also start to listen to them the same time they want to see me..."* Participant 2 (29 years) explained that the whole family was willing to support the adolescent. The intrusive methods that she intended using to get to know her child better might have been less effective though:

We are there to support him, if he can't talk to me, his brother is there or any other family member or even his father, he could explain to him his challenges and he could help and guide him... every parent should know his child...I should try being next to him every time. This means I must try to do secret investigations where I see any deviations, I must force to know what it is that is

troubling him, and so that when he needs help I can help to reassure him...

Some parents wanted to help their children, but were unsure about what to do and felt powerless to manage the situation: *"I am trying to satisfy him but I really don't know what to do. He was discharged on Wednesday and Thursday I started assisting him with his homework so that he can go back to school..."* (Participant 8, 50 years).

Another participant tried to accept the situation that precipitated the suicide attempt, and attempted to get her child to do the same:

As a parent I accepted because in life no situation is permanent, and then I was looking for success, but if he loses the job he should just accept it, God will help him to find another job in order to pursue his dreams. I sat him down and told him how life is and its ups and downs (Participant 2, 29 years)

Participant 4 (39 years) also tried to accept the suicide attempt, but through using self-talk and viewing it as something that can happen to any person: *"But sometimes if things like this happen you tell yourself that if it doesn't happen to me, who else was it to happen to?"* Some of the parents were unable to seek support from their social networks as a way of coping. This is related to the stigma attached to suicide, as illustrated in the next two quotations:

...it is important for you to keep your family sensitive issues confidential so as to avoid frustrations to your family, because they will end up talking many things that you don't even know as a family. (Participant 7, 42 years)

When we arrived at the clinic it was 9h30 and the clinic was full with people from our area and also our neighbours and everybody was looking at us. It was not nice at all... This incident had hurt me a lot. Even at work I did not tell anyone but it has hurt me... (Participant 8, 50 years)

The participants attempted to cope with the trauma of the suicide attempt, but the quotations highlight their needs for some form of assistance to facilitate effective coping. Some participants felt relief simply by talking to the researcher as Participant 1 acknowledged: *"... as I'm talking to you I feel relieved so I need it..."* Participants expressed a need for individual and family counselling, support groups, and a desperate need for advice on how to manage the situation:

...I need help to reassure me and advise me on living with an adolescent who has attempted suicide, what am I supposed to do? (Participant 2, 29 years)

...I need counselling, if it can be done individually and again as a family by a professional, I think it can be very helpful for all of us... (Participant 8, 50 years)

...a support group or something to empower us and this can make me feel better because other parents, their children didn't make it... (Participant 4, 39 years)

Parents realised that coping needs to happen within the troubled relationship with the adolescent who attempted suicide. They felt a supportive relationship with a helping professional or others in the same situation will enable them to develop coping mechanisms.

Discussion

Symptoms of post-traumatic stress experienced by parents after a child's suicide attempt are mentioned in some studies, for example, parents described the attempt as traumatic and displayed hypervigilance to the extent of invading their children's privacy (Buus, Caspersen, Hansen, Stenager, & Fleischer, 2014; McDonald, O'Brien & Jackson, 2007). Though, the possibility of these parents developing post-traumatic stress, is not fully explored in research.

Similar to the findings of this study, Buus and colleagues (2014) indicated that parents struggled with the unpredictable character of suicide attempts and subsequent fear of another attempt. Parents' sense of responsibility to safeguard the adolescent manifested in behavioural and relational changes such as hypervigilance and being attentive of the suicidal child. They wanted to understand why the suicide attempt happened in the first place, engage in suicide prevention activities, and establish communication and trust (Hickey et al., 2015). During a suicide crisis of a loved one, family members strongly desire the needed knowledge (and perhaps power) to prevent suicide from happening (Grant et al., 2015).

However, parents doubted their ability to protect their adolescents, recognise suicide warning signs, and obtain their adolescent's commitment to refrain from suicide. Professionals have to address these concerns before continuing with other therapeutic interventions. Parents need support to implement suicide prevention strategies, as their low confidence in their capacity to influence their adolescents' behaviour may undermine their efforts (Czyz, Horwitz, Yeguez, Foster, & King, 2017).

The trauma of the suicide attempt negatively affected family relationships and communication. Parents' efforts to support their children following the suicide attempt were sometimes futile and left them with feelings of powerlessness. Adolescents with suicidal tendencies tend to feel alienated from others and a burden to others. Parents should be assisted with interventions that will lessen these perceptions and promote close and supportive family relationships (Czyz, Berona, & King 2015). Relationship problems, particularly with parents, are a common suicide antecedent (Consoli et al., 2013; Sheftall et al., 2013) and parents who respond in angry, hostile, or argumentative ways, may increase the risk of recurrent suicide attempts (Greene-Palmer et al., 2015). Pre-existing family problems and stressors associated with the child's behaviour combine with the stress of the suicide attempt and affect the family's well-being and ability to function (Morgan et al., 2013).

In this study parents responded with guilt to their children's emotional pain. Shame, guilt, and embarrassment may withhold parents from seeking much needed support to cope after an adolescent's suicide attempt (McDonald et al., 2007). Shame invokes a desire to withdraw and escape

from others (Hastings et al., 2002). Social withdrawal is evident in cultural contexts where suicide is stigmatised and considered a taboo, as illustrated in a study conducted in Ghana (Asare-Doku et al., 2017). Parents in the current study did not feel comfortable to reveal the suicide attempt to community members. Goldstone (2017) found that people who attempted suicide in South Africa endure considerable rejection and stigmatisation attributed to conservative beliefs about suicide.

Healthcare professionals should address potential barriers towards family centred care and, when clinically appropriate, involve the family in the care of the adolescent at risk for suicide (Grant et al., 2015). Programs to support families after a suicide attempt are proposed in the literature. The COPE Program facilitates parents' sense of self-efficacy by training them to deal with suicide threats and the distress surrounding the threat-interaction (Grant et al., 2015). The SAFETY Program is a cognitive-behavioural family intervention designed for integration with emergency services to increase safety and reduce suicide attempts (Asarnow, Berk, Hughes, & Anderson, 2015). The Resourceful Adolescent Parent Program reduces suicidal behaviour and associated psychiatric symptoms, through interventions aimed at family functioning (Pineda & Dadds, 2013).

Support programs for parents of children with suicide attempt history should be tailored to address the needs of the individual, family, and community. Individual psychotherapy (specifically cognitive behavioural therapy) may help parents to manage the complex feelings they experience. Family members should be involved in the adolescent's mental healthcare programme through family interventions and psycho-education to prevent future attempts. Community programs need to address the stigma attached to suicide and inculcate life skills such as coping and problem-solving to prevent suicide ideation and behaviour. Mental health professionals should establish and facilitate support groups to help parents enhance their coping mechanisms, parenting skills, and self-awareness when faced with problematic and suicidal behaviour in adolescents. The researchers identified a need for implementation research to adapt and implement one of the mentioned support programmes for parents in the research context.

Limitations of the study and suggestions for further research

A limitation of the study was that the participants came from a specific rural area and represent only two of the many cultural groups in South Africa. Parents who come from other areas or belong to different cultural groups may experience attempted suicide differently. Moreover, parents who elected not to participate in our study might report differently on their experiences.

Conclusion

Parents of adolescents who attempted suicide experienced symptoms of post-traumatic stress and feelings of regret, self-blame, fear, and anxiety. Their social needs manifested wanting support to mend their disturbed family relationships and to work through their feelings of fear,

guilt, and helplessness. The parents reported a sense of guilt that motivated them to make amends while they still had the opportunity to do so, while some parents allowed their adolescent special privileges or could not confront the child. What stood out was that some of the parents felt guilty despite knowing what they did wrong, and others felt powerless and unequipped to repair the strained relationships.

To meet the psychosocial needs of parents after adolescents' suicide attempts, mental healthcare professionals need to consider two aspects. Firstly, symptoms of post-traumatic stress and underlying guilt and shame might be unexpressed and masked; and secondly, fear of stigma might prevent parents from using their usual social support networks.

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Personality profiling of South African rugby union players

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This study aimed to investigate whether differences exist in the personality profiles of professional and semi-professional rugby union players. Participants were 73 male rugby players, 52 professional players and 21 semi-professional players. All participants completed the NEO Five-Factor Personality Inventory (NEO-FFI) as part of the WebNeuro Sport online assessment. An independent sample *t*-test showed a statistically significant difference in neuroticism between the professional and semi-professional players. The magnitude-based inference method confirmed the results of the independent sample *t*-test with a moderate effect. The potential practical value of these findings is that the Neuroticism scale of the Big Five personality dimensions can be used as a screening tool for indicating which players a team would want to recruit and invest time and money in since these players will most likely be capable of progressing to the top level in their sport.

Keywords: expertise, performance, personality, professional rugby union players, semi-professional, sport

Introduction

Rugby has become a multi-billion-pound business which competes for limited resources (Robinson, 2003). While performance analysis in rugby has focused on numerous variables in explaining physical performance, limited research is available about the comparison of personality characteristics between professional and semi-professional rugby players. For instance, previous research regarding performance analysis in rugby has investigated anthropometrical (Duthie, Pyne, & Hooper, 2003; Olds, 2001; Quarrie, Handcock, Toomey, & Waller, 1996; Quarrie & Wilson, 2000), physical (Cunningham et al., 2013; Gabbett, Kelly, & Pezet, 2007), physiological, and biomechanical (Trewartha, Munro, & Steele, 2007) factors of successful sport performance. However, what distinguishes “the good from the great” is not only dependent on a robust genetic make-up, innate talent, and physical abilities. It also depends on mental aspects, including certain personality traits (Twist & Hutton, 2007).

Personality refers to the “psychological qualities that contribute to an individual’s enduring and distinctive patterns of feeling, thinking, and behaving” Cervone & Pervin (2010, p. 8). It is defined by a set of behavioural traits an individual tends to display in a consistent manner (Digman, 1990). However, individuals may behave in different ways depending on the contexts (or situations) which they find themselves in (Vorster, 2011). In this regard, in particular situations, some individuals will exhibit extraverted behaviour while at other times, the same individuals will behave in an introverted manner. Therefore, introversion and extraversion is measured on a continuum with ambivert people falling in the middle of the extravert-introvert scale (Psychologist World, 2019).

Studies on personality profiles among athletes are on the rise (Bäckmand, Kaprio, Kujala, & Sarna, 2001; Dobosz & Beaty, 1999; Fletcher & Dowell, 1971; Frederick, 2000; Saint-Phard, Van Dorsten, Marx, & York, 1999; Stephens, 2001; Stoner & Bandy, 1977; Valliant,

Bennie, & Valiant, 1981; Yeung & Hemsley, 1996). To be considered an athlete, Araujo and Scharhag (2016) proposed four criteria that should be fulfilled: a) training in sport with the aim to improve performance; b) actively participates in sport competitions; c) formally registered as competitor in a local, regional or national sport federation; and d) to have sport as the major activity or focus of personal interest, devoting several hours of most days to these activities, exceeding the allocated time for other types of professional or leisure activities (“Athlete”, n.d.). There is evidence to suggest the existence of a personality profile for athletes which differentiate competitive athletes from other populations. For instance, athletes generally present with higher levels of emotional stability, extroversion, self-confidence, and higher mental resistance than non-athletes (Butt, 1987; Cox, 1994; Saint-Phard et al., 1999). Moreover, team sport participants were more extroverted, less dependent, held higher levels of abstract reasoning abilities, and a higher sense of self as opposed to non-athletes (Steca, Baretta, Greco, D’Addario, & Monzani, 2018). Furthermore, individual sport participants displayed greater objectivity, more dependency, less anxiety, and more abstract thinking than non-athletes (Schurr, Ashley, & Joy, 1977).

However, other studies reported athletes to differ from non-athletes as in the case of runners who were generally more withdrawn, more thoughtful, and presented with lower anger levels than non-athletes (Dineen, 2003). Conversely, other studies concluded that personality differences between athletes and non-athletes do not exist (Auweele et al., 1993; Guillén & Castro, 1994; Vealey, 1992). However, few studies have assessed personality profiles among athletes differentiating by their professional standing (e.g. provincial, transnational. and national levels versus lower club and amateur levels).

Results of studies on personality profiles of athletes competing on national or international level suggest that professional athletes display higher levels of

conscientiousness and agreeableness with associated lower levels of neuroticism than athletes competing on lower levels (Allen, Greenlees, & Jones, 2013). Moreover, studies on successful track and field athletes, soccer players, and basketball players found them to display higher levels of conscientiousness as well as more emotional stability as compared to the less successful athletes (Gee et al., 2007). Among successful athletes, the trait of conscientiousness showed the most significant effect size, suggesting that characteristics such as diligence and responsibility are skills typical of high-level athletes (see also Gee et al., 2007). Furthermore, athletes with higher extraversion, conscientiousness, emotional stability, and openness to experience with lesser agreeableness yielded better performance (Khan, Ahmed, & Abid, 2016).

Professional rugby league players had higher levels of hardiness than their sub-elite counterparts (Golby, Sheard, & Lavalley, 2003) or players competing at lower levels (Golby & Sheard, 2004). Similarly, Sheard and Golby (2010) reported that international rugby union players scored significantly higher than national, county, and club players in total hardiness. In turn, national and county level players scored significantly higher in total hardiness than club level players. Conflicting findings on the association between professional athletes and peers at lower levels of play suggest a need for further studies to clarify these relationships which may be of importance to talent identification and retention in this professional sport.

Goal of the study

The present study explored personality characteristics that differentiated professional and semi-professional South African rugby union players. Our specific research question was: Is there a significant difference in the personality characteristics between professional and semi-professional South African rugby union players? The evidence from this study might be of assistance to sports psychologists and coaches to understand personality traits that make for thriving athletes across careers.

Method

Participants and setting

We accessed a convenience sample of 73 male South African rugby union players, aged 19 to 37 years. Of these, 52 were professional players (mean age = 26.12, SD = 3.83 years) and 21 were semi-professional players (mean age = 22.43, SD = 1.17 years). The professional group formed part of elite competitive teams (which participated in national and trans-national competitions) where players were paid a salary for their participation. The semi-professional group consisted of players who were registered students at a university and therefore not remunerated for being part of their team, although some had received bursaries to play rugby (Voss, Kramer, Basak, Prakash, & Roberts, 2010).

Measures

The participants self-reported their demographic information (name, surname, age, and gender) and completed the NEO Five-Factor Personality Inventory (NEO-FFI) (Costa & McCrae, 1992). The NEO-FFI is

a 60-item self-report measure to assess five personality dimensions; namely extraversion, neuroticism, openness, agreeableness, and conscientiousness. The extraversion dimension distinguishes between individuals who are unsociable, quiet, and passive (also referred to as introverted); and those who are sociable, outgoing and active (also referred to as extraverted). The neuroticism dimension distinguishes between people who are calm, controlled, and even-tempered (emotionally stable); from people who are anxious, aggressive, and ill-tempered (emotionally unstable). Openness differentiates curious, inventive, and imaginative individuals (also referred to as open to new experiences); from conventional, uncreative, and unimaginative individuals or individuals who prefer the familiar. The agreeableness dimension distinguishes between people who are good-natured, generous, and forgiving; and those who tend to be pessimistic, discourteous, and uncooperative. The conscientiousness dimension differentiates between individuals who are organised, prompt, and hardworking; and those who are untrustworthy, lazy, and careless (Allen, Greenlees, & Jones, 2011). The participants were required to respond to each statement, on a 5-point Likert scale anchored by 0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, and 4 = strongly agree. Twelve items load on each of the five domains with some negative statements to which reverse scoring applies. Scores from the NEO-FFI have acceptable levels of reliability (0.68 to 0.89) across a range of diverse populations (McCrae & Costa, 2007). The reliability of scores from the NEO-FFI in the present sample varied between 0.66 to 0.79. Openness yielded a reliability score of 0.66 which is below the acceptable score of 0.70 which can be seen as a limitation in the present study.

Procedure

The Health Research Ethics Committee (HREC) of North-West University granted permission for the study (NWU-00026-18-S1). All participants granted informed consent for participation in the study. We collected data by means of an online survey at the venues where the respective teams were based. Completion of the full online assessment took approximately 90 minutes.

Data analysis

The Statistical Package for the Social Sciences (SPSS) software programme (Version 25) was used for the statistical analysis of the research data. For the reader to secure an overview of the personality scores of both groups, we present descriptive statistics (mean $\pm$ SD; 90% confidence interval [CI]). An independent sample *t*-test determined the statistically significant differences between the two groups. Furthermore, effect sizes (ES; *d*) were calculated for the between-group comparison, where the difference between the groups' means was divided by the pooled standard deviation (SD) (Cohen, 1988). In an attempt to confirm or disconfirm the results of the independent sample *t*-test, irrespective of the *p*-value, the magnitude-based inference method (MBI) was included in this study.

Results and discussion

Table 1 provides descriptive statistics (mean $\pm$ SD), between-group comparison, 90% confidence interval, effect size, and interpretation of Cohen's d -value of the data and reliability coefficients of the NEO-FFI. It also reports the results of the between-group comparison regarding personality characteristics.

Only neuroticism showed a statistically significant difference between the professional and semi-professional rugby players. The magnitude-based inference (MBI) method was included in this study to confirm or disconfirm the results, irrespective of the p -value. Based on the MBI method, neuroticism differed with a moderate effect between the two groups with the semi-professional players scoring higher on this trait than their professional counterparts.

Our finding of a significantly lower neuroticism score by professional rugby players directly mirrors the findings of Allen and colleagues (2011) in which high-level performers scored lower on neuroticism than the lower-level athletes. This finding might be explained by a self-selection factor in that those who achieve professional player status are more emotionally stable and with follow-through of the coaches' instructions (coach-ability). Additionally, they may be good team players (Coyne & Wright, 2014; Piedmont, Hill, & Blanco, 1999). Lower neuroticism also makes for greater self-control (Baniassadi, Javanmard, Zivarirahman, Shokouhmoqhammad, & Adhami, 2015; Baumeister, Vohs, & Tice, 2007; Coyne & Wright, 2014; Tianxin et al., 2018) or the ability to overcome their natural and automatic tendencies, desires and behaviours, and to their resistance of the short-term temptations to achieve their long-term goals (Baumeister, Vohs, & Tice, 2007).

Contrary to our expectation, we found no significant difference in extraversion between the players of the different groups. These findings differed somewhat from previous research in sports literature that had demonstrated a link between extraversion and level of participation (Egloff & Gruhn, 1996; Kirkcaldy, 1982). Allen and colleagues (2011) found that athletes participating in team sports were more extraverted than those competing in an individual sport. It is not apparent as to why our findings turned out differently. Similarly, we observed no differences in conscientiousness, agreeableness, and openness scores between professional rugby players and semi-professional rugby players. A possible explanation

for our contradictory results might be that our semi-professional group was one of the best teams in their league and therefore already at the very top end of the spectrum in their category and much closer to their professional counterparts than an average sample of club and university rugby players perhaps would have been. Thus, they were already at the very top end of the spectrum in their category and much closer to their professional counterparts so that any differences are less pronounced.

Limitations of the study and suggestions for further research

The present study also had some limitations that need to be noted, and which could be addressed in future research. First, the generalisation of the results to the greater rugby community is limited and should be done with caution, given the relatively small sample size that was included in the present study from South Africa. The authors would, therefore, suggest using more elite rugby players from different countries in similar future studies. Additionally, because participants of only one team sport were considered, the results might have been affected by sport specificity – in other words, the notion that participation in rugby might have led to the development of individual personality characteristics. These issues might limit the generalisability of the current results to other sports contexts.

Furthermore, as we included only male participants in our study, the possibility that different findings could arise about female rugby players cannot be excluded. In order to determine whether rugby players exhibit a specific personality profile, we would further suggest that professional participants of different sports be compared with the results presented in this study. Having used a cross-sectional self-report design, it is not possible to determine causality, and it is also possible that other confounding variables, some of which have already been alluded to, might account for the results. We suggest that for future studies researchers also consider other important outcomes such as multiple key performance indicators, the amount of time spent on-field playing as well as years of experience in rugby. Furthermore, we suggest that future research investigate the relationship between the success of the team and the level of variation in the team members' personality traits. Lastly, because South Africa is a multicultural and multilingual country, we suggest that future similar research make use of

Table 1. Descriptive statistics, between-group comparison, 90% confidence interval, effect size, qualitative interpretation of Cohen's d -value and reliability coefficients of the NEO-FFI

Personality trait	Professional group ($n = 52$)	Semi-professional group ($n = 21$)	90% CI	p value	d	d Strength	Cronbach alpha
Age	26.12 $\pm$ 3.83	22.43 $\pm$ 1.17					
Neuroticism	16.31 $\pm$ 5.94	19.86 $\pm$ 6.63	-1.09–0.06	0.03*	-0.58	Moderate	0.76
Extraversion	32.12 $\pm$ 5.68	31.24 $\pm$ 4.88	-0.35–0.67	0.54	0.16	Trivial	0.76
Openness	22.27 $\pm$ 5.49	22.86 $\pm$ 5.49	-0.61–4.40	0.69	-0.11	Trivial	0.66
Agreeableness	29.73 $\pm$ 5.39	28.29 $\pm$ 4.46	-0.23–0.79	0.25	0.28	Small	0.72
Conscientiousness	35.23 $\pm$ 5.92	33.33 $\pm$ 4.79	-0.18–0.84	0.16	0.34	Small	0.79

Note. CI = confidence interval; d = effect size; * $p < 0.05$

personality assessments that account for differences in culture, education, employment status, and the distribution of socioeconomic resources of the participants.

Conclusion

Neuroticism was the only personality trait that significantly distinguishes professional from semi-professional rugby union players. Other factors not included in the study may explain personality presentation by the rugby players. On a practical level, it would seem that the NEO-FFI is in need of further study as an assessment tool for use with professional athletes, especially in the South African context. Findings for its use may be of incremental value in professional athlete development in combination with physical, tactical, and technical variables.

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Psychological contract influence on organisational identification among call centre employees

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The study investigated whether the psychological contract predicts organisational identification in a call centre setting. Participants included 198 employees (females = 66%; permanent employees = 74%, temporary employees = 26%). Participants completed measures on psychological contract and organisational identification. Using a logistic regression analysis, the study revealed that various components of the psychological contract (employer obligations, employee obligations, employer violation, and employee violation) had varying degrees of influence on the relationship between the psychological contract and organisational identification. All dimensions of the psychological contract (excluding employer obligations) significantly predicted organisational identification. By paying increased attention to the management of employee and employer beliefs regarding mutual obligations in the employment relationship, psychological contract bonds may be sustained over time, thereby increasing organisational identification.

Keywords: call centre, expectations, organisational identification, psychological contract

Introduction

In today's rapidly evolving work environment, the employee-employer psychological contract has become particularly important in the employment relationship and has received increasing attention from researchers (Guest, 2016; Sverdrup, 2012; Van Den Heuvel, Schalk, Freese, & Timmerman, 2016). The psychological contract may influence employee organisational identification through an appreciation of mutual obligations with the employer. Employees in work environments with high employee turnover may have a lower sense of organisational identification than those in more stable work environments (Cole & Bruch, 2006; de Moura, Abrams, Retter, Gunnarsdottir, & Ando, 2008). Call centres providing customer care services have high turnover rates (Janse van Rensburg, Boonzaier, & Boonzaier, 2013) and erratic working hours (Dhanpat, Nemarumane, Ngobeni, Nkabinde, & Noko, 2019). This raises questions regarding employee psychological contract perceptions and organisational identification among call centre employees. We aimed to establish the way in which call centre employees perceived the terms and conditions of the psychological contract and how this influenced their organisational identification.

Psychological contract

A psychological contract is defined as “the individual beliefs, shaped by the organisation, regarding terms of an exchange agreement between individuals and their organisation” (Rousseau, 1995, p. 9). Psychological contracts are reciprocal because of beliefs regarding the mutual obligations of both parties in the relationship (Conway & Coyle-Shapiro, 2012). Psychological contract expectations may evolve over time as employees accumulate experience, as conditions of employment change and as expectations of employees are re-evaluated (Armstrong, 2006).

Employees expect to receive fair treatment, opportunities for career development, equitable compensation, as well as work that allows them to apply their skills and abilities. These expectations are encapsulated in employees' psychological contract (Dhanpat et al., 2019). According to Dhanpat (2017), employers can provide call centre employees certain benefits associated with retention, which may lead to a higher level of organisational commitment. Loyalty, commitment, enhancing the organisational image in all interactions with external stakeholders, and investing greater efforts on behalf of the organisation are some of the expectations that employers may have of their employees (Armstrong, 2006).

Terms and conditions of the psychological contract include both employee obligations and employer obligations. It is important to note that the psychological contract involves a degree of subjectivity, particularly in relation to employees' perceptions of their obligations, as these perceptions influence their behaviour and attitudes (Zhao, Wayne, Glibkowski, & Bravo, 2007). In the mind of the employee, these obligations are the foundation of an employment relationship (Burch, Batchelor, Burch, & Heller, 2015).

Taking these elements into account, psychological contract research also looks at breach and violation. The breach of a contract occurs when an employee believes the employer has failed to fulfil their obligations such as pay based on performance, high salary, job security, and career development (Conway, Kiefer, Hartley, & Briner, 2014). A contract breach is the failure to meet reciprocal obligations that are not legally binding and is referred to as a psychological violation (Cassar, Briner, & Buttigieg, 2016). The difference between a breach and a violation is that the former refers to the employee's perceptions on unmet employer obligations, whereas the latter refers to the negative response that it evokes. Most literature uses these

terms interchangeably (Cassar et al., 2016). In the study the concepts of breach and violation are used separately.

Organisational identification

Organisational identification refers to an employee seeing the organisation as part of their own personhood (Ashforth, Harrison, & Corley, 2008). It entails a sense of belonging and the bond that an individual has with the organisation (Modaff, DeWine, & Butler, 2008). Organisational identification occurs when an employee partly or fully defines themselves by integrating the organisation's identity into their own (Albert, Ashforth, & Dutton, 2000; Pratt, 1998).

Psychological contract and organisational identification are transactional due to the fact that both employers and employees have expectations of receiving something in return for what has been invested in the other (Guest, 2004). These mutual expectations act as a cognitive compass for employer-employee behaviours in the employment relationship (Albert et al., 2000). Yet there is little consensus on why some individuals may identify strongly with an organisation more than others (Fuchs, 2012). For instance, some individuals may identify strongly with organisations which are of high status or prestige (Knapp, Smith & Sprinkle, 2014; Mael & Ashforth, 1992) or which would boost their sense of self-worth (Dutton, Dukerich, & Harquail, 1994). In instances where the conditions stated above are not met, organisational dis-identification may occur (Pratt, 2001).

Relevance of organisational identification and psychological contract

As noted previously, psychological contract and organisational identification are premised on the notion of social exchange in which both parties are obligated, either in the form of debt or pledge, to meet certain expectations towards the other (Robinson, Kraatz, & Rousseau, 1994). Literature suggests that employees with transactional contracts often follow through with the expectations and terms of the contract (Rousseau, 2004). Call centres, in particular, where employees have limited autonomy over the scope and content of their work, are typical of the transactional contract (Rousseau, 2004). Employees who have clearly defined expectations from the transactional contract identify more strongly with their employer (Rousseau, 2004). However, the relationship between psychological contract and organisational identification in call centres is unclear.

Goal of the study

This study explores the relationship between the psychological contract and organisational identification within a call centre department in the financial services industry. The study was guided by the following question: How does the psychological contract predict organisational identification?

Method

Participants and setting

Participants were a convenience sample of 195 employees from a financial services call centre. The call centre was

located in Gauteng province, South Africa. The sample comprised mostly of female (66.20%) employees. In terms of race, 62.60% were black, 26.20% were white, 5.60% were Indian, and 5.10% were coloured.

Measuring instruments

Participants completed the Psychological Contract Scale (PCS: Robinson et al., 1994) and the Organisational Identification Scale (OIS: Mael & Ashforth, 1992). The PCS is a 30-item measure including various subscales: the employer obligations scale, the employee obligations scale, the employer violation scale, and the employee violation scale. Items are scored on a five-point Likert scale. Conway and Briner (2005) report a Cronbach's alpha of 0.86 for scores from the PCS. The OIS comprises six statements to measure psychological attachment to an organisation. Edwards (2005) reports an average Cronbach's alpha of 0.85 for scores from the OIS.

Procedure

The study met the ethical requirements from the department's research committee. Permission was also granted by the employer organisation. Participation was voluntary. Employees were requested to sign informed consent forms; the objectives of the study were clearly explained to them. Participant anonymity was ensured. Questionnaires were personally administered to participants.

Data analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS version 22). Multiple regression analysis was used to establish the predictive capability of the psychological contract on organisational identification.

Results

Descriptive statistics and internal consistency

Table 1 indicates the descriptive statistics (means, standard deviations, and internal consistency). Employees rated the following dimensions high: employee violation ($M = 3.99$), organisational identification ($M = 3.78$), employee obligations ($M = 3.70$), employer obligations ($M = 3.40$), and employer violation ($M = 2.88$). The bivariate intercorrelations between the four constructs revealed positive and significant results ($r \geq 0.162$ to $r \leq 0.453$; $p \leq 0.01-0.05$) for all variables except employer obligations with employee violation and organisational identification. The study used as a rule of thumb that a correlation of 1.0 suggests that there is a perfect relationship irrespective of the direction. The r values suggest that a moderate relationship exists between the variables.

Predicting organisational identification from psychological contract

The model contained four independent variables (employer obligations, employee obligations, employer violation, and employee violation). The full model containing all predictors was statistically significant, with $X^2(4, N = 195) = 49.26\%$, $p < 0.001$, indicating that it was able to distinguish between participants who identified

Table 1. Mean (*M*), standard deviations (*SD*), internal consistencies, correlations among all the variables in the study (*n* = 195)

Dimensions	Mean	SD	α	1	2	3	4	5
1 Employer obligations	3.41	0.98	0.87	1.00				
2 Employee obligations	3.70	0.67	0.71	0.215**	1.00			
3 Employer violation	2.88	0.85	0.84	0.172*	0.187**	1.00		
4 Employee violation	3.99	0.69	0.71	-0.006	0.453**	0.162*	1.00	
5 Organisational identification	3.78	0.87	0.82	0.140	0.385**	0.274**	0.437**	1.00

Note. **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed)

Table 2. Logistic regression – Psychological contract and organisational identification

	B	SE	Wald	df	Sig.	Exp (B)	95% CI for EXP(B)	
							Lower	Upper
Employer obligation	0.049	0.184	0.070	1	0.791	1.050	0.733	1.505
Employee obligation	0.799	0.290	7.585	1	0.006	2.222	1.259	3.923
Employer violation	0.523	0.216	5.828	1	0.016	1.686	1.103	2.578
Employee violation	1.036	0.287	13.045	1	< 0.000	2.818	1.606	4.943
Constant	-8.517	1.557	29.943	1	< 0.000	0.000		

strongly with their organisations and those who did not. The entire model revealed 22% (Cox and Snell *R* Square) and 30% (Nagelkerke *R* Squared) of the variance in the psychological contract and organisational identification. In addition, the model correctly classified 74.9% of the cases, an improvement over the 54.9% in the model without the predictors.

The results also revealed that of the four independent variables, three contributed significantly to the model; namely, employee obligations, employer violations, and employee violation as seen in Table 2. The strongest predictor of organisational identification was employee violation as this recorded an odds ratio of 2.81. This shows that employees who perceived to have not violated their obligations to their employer were almost three times more likely to identify with the employer than those who believed they had not fulfilled their obligations.

Furthermore, employee obligations were a strong predictor of organisational identification. The employee obligations analysis revealed an odds ratio of 2.22. This implied that employees who believed they had high obligations towards their employer were as twice likely to identify strongly with their employer. Respondents who perceived that their employer had violated their obligations towards them (employer violation) were 1.68 times less likely to identify with the organisation. Therefore, these three psychological contract variables were significant in predicting organisational identification.

Discussion

The results of the study revealed that employee obligations, employer violation, and employee violation predicted organisational identification. The strongest predictor of organisational identification was employee violation. This shows that employees who believed they had not violated their obligations were more likely to identify with their employer than those who believed they had not fulfilled their obligations. Similarly, employees who perceived they had not violated their obligations were more likely to identify with the organisation from their

subjective psychological contract. This may be attributed to self-serving bias, in which employees overestimate their contribution towards an organisation (Taylor & Brown, 1988), which may in turn increase their self-worth, which is known to positively influence organisational identification (Dutton et al., 1994).

Employee obligations were found to predict organisational identification. Employees who believed they had high obligations (such as working extra hours, protecting the employer's proprietary information and loyalty among other things) were more likely to strongly identify with their employer. This may be attributed to employees experiencing high self-esteem and self-enhancement as they meet their obligations, resulting in higher levels of organisational identification (Dutton et al., 1994; Edwards, 2005). Identifying with the organisation and incorporating the organisation's identity into one's own identity is the manner through which employees with relational psychological contracts can show their relational obligations (Lu, Capezio, Restubog, Garcia, & Wang, 2016; Zagenczyk, Gibney, Few, & Scott, 2011). This helps employees to sustain strong relationships and bonds with the organisation (Edwards, 2005; Lu et al., 2016). Conditions that foster relational psychological contracts are also more likely to give rise to organisational identification conditions that foster transactional psychological contracts (Lu et al., 2016).

Employer violation predicted organisational identification insofar as employees who perceived that their employer had violated their obligations towards them were less likely to identify with the organisation than those who perceived the opposite. Psychological contract violation or breach has detrimental effects on organisational identification (Epitropaki, 2013; Zagenczyk et al., 2011) as employees may distance their personal identity from that of the organisation (Epitropaki, 2013).

Another plausible explanation for the positive significant correlation between perceived employer violation and organisational identification may be in the essence of organisational identification itself. Identification fosters a sense of security and belonging (Ashforth,

Joshi, Anand, & O'Leary-Kelly, 2013). However, as the erosion of long-term job security continues, employees' self-definition may be more aligned with their profession rather than their employer (Ashforth et al., 2013). Employees' levels of organisational identification were negatively affected by their perceptions of employer contract breach or violation. Irrespective of the links that exist between psychological contract and organisational identification at a conceptual level, other factors may be at play in employees' sense of belonging to their employer (Epitropaki, 2013).

Limitations and suggestions for future research

Limitations of this study include that it was a cross-sectional research design so that causality among the research variables could not be established. The study may be considered one-sided as it was conducted from an employee perspective only. It is recommended that the employer's perspective also be examined to establish the influence on employee organisational identification. Future research should make use of a longitudinal research design by replicating the findings on the effects of psychological contract on organisational identification.

Conclusion

The understanding of the mutual employment relationship encapsulated in the terms and conditions of the psychological contract has become more important than ever. This study investigated the influence of the psychological contract on organisational identification. The results revealed the need for employers to manage the perception of mutual obligations, with particular focus on how the organisation maintains rather than violates or breaches the psychological contract between employee and employer. Hence, a thorough understanding of employee perceptions of the mutual obligations in an employment relationship is key in enhancing the way in which employees identify with the organisation.

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Employee engagement, organisational commitment, and job satisfaction in Namibia, South Africa, and Zimbabwe: An exploratory study

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The goal of this study was to measure employee engagement (EE), organisational commitment (OC), and job satisfaction (JS) in Namibia, South Africa, and Zimbabwe. We surveyed a convenience sample of 631 employees (South Africa: $n = 219$; Namibia: $n = 212$; and Zimbabwe: $n = 200$). The employees completed a selection of items from the Employee Engagement Scale, the Organisational Commitment Scale, and the Job Satisfaction Scale. Following analysis of variance and t -tests, results t -tests showed between-country differences in EE, OC, and JS in which South African employees reported higher scores than those from Namibia and Zimbabwe. Macro-level economic factors may explain the country differences in EE, OC, and JS.

Keywords: employee engagement, job satisfaction, organisational commitment, SADC

Introduction

The economic productivity of nations is partly explained by the extent to which employees are engaged in work and committed to their organisations (Griffin, Phillips, Gully, & Carrim, 2019). Engaged employees report higher job satisfaction (Nienaber & Martin, 2016), which also is associated with high talent retention (Bussin, 2018). There is evidence to suggest differences in employee engagement (EE), organisational commitment (OC), and job satisfaction (JS) amongst countries (David, Boniwell, & Ayers, 2014). The constructs of EE, OC, and JS are well known indicators of employee happiness and productivity (Fisher, 2010; Maleka, Mmako, & Swarts, 2018). In economics, these constructs might be classified as subjective well-being (SWB).

Employees from Group of 20 (G20) nations such as Finland, Switzerland, the United Kingdom, the United States of America, Australia, Japan, and New Zealand, were found to have higher SWB scores than those from Mozambique (David et al., 2014). This may also be true in comparison to other developing country settings. For instance, South Africa has been ranked 62nd in terms of global SWB scores, lower than countries such as Switzerland, Canada, the United Kingdom, Germany, and Japan (United States News and World Report, 2018). Furthermore, this might suggest lower work place happiness among South Africans compared to those from the developed countries. Macro-economic factors such as chronic poverty might explain worker sense of well-being (see also Carr, Maleka, Meyer, Barry, Haar, & Parker, 2018). Within the same economic regions, macro-level factors such as the competitiveness of country economies and work culture orientations also might explain the differences in EE, OC, and JS amongst countries (Griffin et al., 2019). For instance, strong economies with high employment rates and matured human resources

management and labour laws may have employees with higher EE, OC, and JS (Madrigal, Pagés, & Suaya, 2016; Meyer & Allen, 1991; Nienaber & Martin, 2016). It is unclear how employees from developing countries with transitional economies would compare in terms of EE, OC, and JS. We sought compare EE, OC, and JS amongst employees from three Southern African countries; namely Namibia, South Africa, and Zimbabwe.

Employee engagement, organisational commitment, and job satisfaction

EE (also called worker engagement) it is defined by vigour, dedication, and absorption (Schaufeli & Bakker, 2004). Vigour is about energised employees (Schaufeli, Salanova, González-Romá, & Bakker, 2002), while dedication refers to the allegiance and enthusiasm employees display towards the organisation (Shirin & Kleyn, 2017). Absorption is employees' concentration and assimilation toward the employer's tasks (Macey & Schneider, 2008). Engaged employees provide a competitive advantage to their organisations, generate more revenue and total shareholder return, enhance the reputation of their organisations, and have reduced turnover, sick leave, and industrial accidents (Harter, Schmidt, & Hayes, 2002; Ugwu, 2013).

OC consists of three components: affective (emotional tie between the person and the organisation), continuance (loyalty), and normative (moral obligation) commitment. Stephens, Dawley, and Stephens (2004) and Seibert, Wang, and Courtright (2011) found Meyer and Allen's (1991) OC model to be valid. The importance of OC within organisations is highlighted by Mitonga-Monga (2018), who argues that commitment and ethics are important to the growth and sustainability of workplaces.

JS comes from employees' happiness with their work experiences (Aziri, 2011; Malik, Nawab, Naeem,

& Danish, 2010; Sparrow, 2010), working conditions, supervisors (Abdullah, Djebarni, & Mellahi, 2011), and co-workers (De Sousa Sabbagha, Ledimo, & Martins, 2018). EE, OC, and JS are all psychological constructs associated with excellent performance or productivity.

Contextualising the study

Previous research in South Africa has shown that low-income workers have low JS, OC, and EE levels (Maleka, Schultz, Van Hoek, Dachapalli, & Ragadu, 2017). However, the picture may be different when South African employees' EE, OC, and JS levels are compared to those of others from neighbouring countries with economic interdependency with South Africa. Namibian research has measured JS and job involvement levels (Sony & Mekoth, 2017), coping, occupational well-being (in other words, burnout and work engagement), and job satisfaction levels; as well as the relationship amongst the psychological constructs (Buitendach & Moola, 2011). On the other hand, Zimbabwean studies have examined the relationship between EE and employees' performance levels (Chiboiwa, Samuel, & Chipunza, 2010; Sibanda, Muchena, & Ncube, 2014). However, these studies utilised different instruments measures, which would not allow for comparisons between countries.

South African is the leading economy in the Southern African region, and both the Namibian and Zimbabwean economies are heavily dependent on South Africa. Bonga (2018) states that Zimbabwe exported goods worth \$1.38 billion to and imported goods worth \$2.2 billion from South Africa in 2018; while the Namibia Statistics Agency (2018) reports that Namibia imported goods worth \$7.4 billion from and exported goods worth \$464 million to South Africa in 2018.

However, in recent years, both the Namibian and South Africa economies have been shrinking and the Zimbabwean economy much more so. For instance, the South African Development Community (2017) report shows that the Namibian gross domestic product (GDP) per capita has shrunk from \$5 766 in 2013 to \$5 596 in 2017. The Zimbabwean economy has been in a meltdown for the past two decades. The Zimbabwean GDP per capita moved from \$1 139 in 2013 to \$1 246 in 2017. In South Africa, the GDP per capita also showed a downward trend from 2013 to 2017, but in 2017 it was \$6 183, which was higher than the GDP per capita in Namibia and Zimbabwe. In South Africa, the unemployment rate was 27.1%, in Namibia it was 34%, and in Zimbabwe it was between 80% and 90% (Bulawayo24, 2018, Statistics South Africa, 2018; The Namibia Labour Force Survey, 2018). Unemployment rate is defined as "the number of unemployed persons as a proportion of the total labour force or the economically active person, which includes both the employed and unemployed" (Yu & Roos, 2018, pp. 199–200). The definition was similar in all countries. We used the labour quarterly surveys reports in three countries. These differences in macro-level economies make for different work climates, which may manifest in differences in EE, OC, and JS amongst countries. Due to a poor work climate, there is evidence to indicate that, despite their skills and education, Zimbabweans migrate

and take poorly-paying jobs with less job security at South African companies in the agricultural sector (Roodt & Retief, 2014).

Goal of the study

We hypothesised that EE, OC, and JS scores would be higher among South African employees compared to their Namibian and Zimbabwean counterparts. We aimed to address this question: What are the EE, OC, and JS levels of employees in the three Southern African countries?

Method

Participants and setting

In total, 631 employees participated in the study (see Table 1 for the sample distribution). Of these, 219 were from South Africa (females = 53.4%), 200 from Zimbabwe (females = 60.5%), and 212 from Namibia (females = 40.1%). In South Africa, 48.4% of the employees were aged 25 to 34 years. In Zimbabwe, 36.9% of the employees were aged 25 to 34 years, and in Namibia, 44.8% of participants were aged 25 to 34 years. In South Africa and Namibia, a significant minority of employees (34.7% and 39.2%, respectively) had two to three years' working experience; while in Zimbabwe, the majority of employees (34.6%) had six or more years' working experience.

Table 2 presents the economic employment sector distribution by country. On average, the monthly income of respondents was as follows: \$955.63 in South Africa, \$17.16 in Zimbabwe, and \$644.71 in Namibia.

Measuring instrument

The employees completed six items from the Employee Engagement Scale (EES: Schaufeli & Bakker, 2004; $\alpha = 0.84$), six items from the Organisational Commitment Scale (OC: Allen & Meyer, 1990; $\alpha = 0.60$), and six

Table 1. Sample characteristics

Biographical variable	South Africa	Zimbabwe	Namibia
<i>Gender</i>			
Male	102(46.6%)	79(39.5%)	85(40.1%)
Female	117(53.4%)	121(60.5%)	127(59.9%)
<i>Employment status</i>			
Employed full-time	111(50.9%)	88(49.4%)	152(71.7%)
Employed part-time	21(9.6%)	33(18.5%)	22(10.4%)
Casual work	80(36.7%)	13(7.3%)	30(14.2%)
Self-employed	6(2.8%)	44(24.7%)	8(3.8%)
<i>Age (years)</i>			
18 to 24	10(4.7%)	54(27.3%)	36(17.0%)
25 to 34	104(48.4%)	73(36.9%)	95(44.8%)
35 to 44	94(43.7%)	47(23.7%)	70(33.0%)
45 to 54	7(3.3%)	24(12.1%)	10(4.7%)
55 to 65	0(0)	0(0)	1(0.5%)
<i>Tenure</i>			
0 to 3 months	0(0)	15(8.4%)	17(8.0%)
4 months to 1 year	55(25.1%)	52(29.1%)	45(21.2%)
2 to 3 years	76(34.7%)	40(22.3%)	83(39.2%)
4 to 5 years	64(29.2%)	10(5.6%)	44(20.8%)
6 years and above	24(11.0%)	62(34.6%)	23(10.8%)

Note. We could not include education levels, since the countries have different education systems

Table 2. Economic distribution of respondents

Economic sectors	South Africa	Zimbabwe	Namibia
Agriculture, fishing, forestry	21 (9.6%)	8 (4.4%)	5 (2.4%)
Private household	5 (2.3%)	3 (1.7%)	5 (2.4%)
Mining and quarrying	2 (0.9%)	9 (5.0%)	6 (2.8%)
Manufacturing (e.g., clothing, food)	21 (9.6%)	11 (6.1%)	11 (5.2%)
Electricity, gas, water	15 (6.8%)	6 (3.3%)	14 (6.6%)
Construction	7 (3.2%)	2 (1.1%)	24 (11.3%)
Wholesale	35 (16.0%)	13 (7.2%)	13 (6.1%)
Transport, storage, and communication	39 (17.8%)	17 (9.4%)	16 (7.5%)
Finance, real estate, and business services	4 (1.8%)	26 (14.4%)	49 (23.1%)
Community, social, and personal services	17 (7.8%)	26 (14.4%)	12 (5.7%)
Catering and accommodation	13 (5.9%)	16 (8.9%)	9 (4.2%)
Other	25 (11.4%)	33 (18.3%)	40 (18.9%)
I do not know	10 (4.6%)	2 (1.1%)	6 (2.8%)
Prefer not answer	4 (1.8 %)	8 (4.4%)	2 (0.9%)

items from the Job Satisfaction Scale (JS: Spector, 1985; $\alpha = 0.70$). The 18 items were rated on a seven-point Likert scale, ranging between 1 = strongly disagree, to 7 = strongly agree. A previous South African study (Maleka et al., 2017) reported the following reliability indices for these measures: EE, $\alpha = 0.92$, OC, $\alpha = 0.71$, and JS, $\alpha = 0.82$. For the reliability indices for the present study, see Table 3.

Procedure

We received ethical clearance to conduct the study from the University of Cape Town (REC 2018/002/018). Participation in the study was voluntary. To enhance anonymity and confidentiality, we informed participants not to share their personal details, and that they could withdraw if they felt uneasy to participate further in the study. The participants completed paper and pencil instruments.

Data analysis

We analysed the data using Statistical Package for Social Sciences (SPSS) version 25. A *t*-test (two-sample, unequal variance) was utilised to test how macro-economic factors enhanced the levels of EE, OC, and JS; while an analysis of variance (ANOVA) was conducted to test for differences in EE, OC, and JS between countries. Prior to conducting statistical analysis, we tested the distribution of the data. The data met the criteria of -2 to 2 suggested by Tabachnick and Fidel (2014). This is also indicated in Table 3.

Results

Table 3 presents the descriptive statistics (including skewness and kurtosis), Cronbach's alphas, mean

scores, and Pearson correlation for the study variables. The Cronbach's alphas were above the 0.7 reliability criteria suggested by Field (2018). We observed that the relationships between EE and OC ($r = 0.42$, medium effect), EE and JS ($r = 0.63$, large effect), and OC and JS ($r = 0.50$, large effect) were significant at the 0.01 significance level.

We performed a *t*-test (two-sample, unequal variance) to compare how happiness with living conditions enhanced respondents' EE, OC, and JS levels. The results of this are indicated in Table 4.

We utilised a *t*-test (two-sample, unequal variance) to compare how living wage enhanced respondents' EE, OC, and JS levels. The results of this are shown in Table 5.

We performed a *t*-test (two-sample, unequal variance) to compare how job security in the country enhanced respondents' EE, OC, and JS levels. The results are indicated in Table 6.

We performed a *t*-test (two-sample, unequal variance) to compare how medical services in the country enhanced respondents' EE, OC, and JS levels. This is shown in Table 7.

An ANOVA was conducted to explore industrial psychological construct levels in the three countries. The data presented in Table 8 showed that employees in South Africa were more engaged ($M = 5.93$, $SD = 0.84$) than their counterparts in Zimbabwe and Namibia. Employees in South Africa were more committed ($M = 4.41$, $SD = 1.36$) than employees in Namibia ($M = 4.13$, $SD = 1.06$) and Zimbabwe ($M = 3.86$, $SD = 1.66$). Moreover, South African employees were more satisfied ($M = 4.76$, $SD = 1.45$) than employees in Namibia ($M = 3.93$, $SD = 1.24$) and Zimbabwe ($M = 2.83$, $SD = 1.20$).

Table 3. Skewness, kurtosis and Cronbach's alphas

Industrial psychology constructs	EE	OC	JS	Skewness	Kurtosis	Cronbach's alpha
EE	1			-0.60	-0.01	0.93
OC	0.42**	1		-0.02	0.70	0.88
JS	0.63**	0.50**	1	0.22	1.89	0.88

** significant at the 0.01 level

Table 4. EE, OC, and JS mean scores in relation to happiness with living condition

Country		Rating	N	Mean	SD	Significance level
South Africa	EE	Yes	209	5.90	0.84	0.33
		No	5	6.30	0.44	
Zimbabwe	EE	Yes	42	3.92	1.17	0.34
		No	129	3.50	1.09	
Namibia	EE	Yes	155	5.20	1.00	< 0.00
		No	56	4.68	1.82	
Country		Rating	N	Mean	SD	Significance level
South Africa	OC	Yes	210	4.35	1.30	0.32
		No	5	4.90	0.93	
Zimbabwe	OC	Yes	40	4.04	1.88	0.43
		No	127	3.08	1.59	
Namibia	OC	Yes	155	4.29	1.02	0.01
		No	56	3.71	1.09	
Country		Rating	N	Mean	SD	Significance level
South Africa	JS	Yes	210	4.76	1.46	0.77
		No	5	4.57	0.94	
Zimbabwe	JS	Yes	44	3.09	1.23	0.12
		No	130	2.75	1.80	
Namibia	JS	Yes	155	4.17	1.11	< 0.00
		No	56	3.24	1.30	

*Mean difference significant at the 0.05 level

Table 5. EE, OC and JS mean scores in relation to living wage

Country		Rating	N	Mean	SD	Significance level
South Africa	EE	Yes	95	5.64	1.55	< 0.00
		No	120	4.06	1.27	
Zimbabwe	EE	Yes	60	3.71	0.95	< 0.00
		No	111	2.33	1.00	
Namibia	EE	Yes	139	4.33	1.00	< 0.00
		No	72	3.16	1.29	
Country		Rating	N	Mean	SD	Significance level
South Africa	OC	Yes	95	4.89	1.11	< 0.00
		No	120	3.95	1.29	
Zimbabwe	OC	Yes	60	4.98	1.55	< 0.00
		No	104	3.21	1.37	
Namibia	OC	Yes	139	4.33	1.00	< 0.00
		No	72	3.76	1.13	
Country		Rating	N	Mean	SD	Significance level
South Africa	JS	Yes	139	4.33	1.00	< 0.00
		No	72	3.16	1.30	
Zimbabwe	JS	Yes	60	3.71	1.00	0.55
		No	111	2.33	1.00	
Namibia	JS	Yes	139	4.33	1.00	< 0.00
		No	72	3.16	1.30	

*Mean difference significant at the 0.05 level

Comparisons between countries: EE, OC, and JS

As indicated in Table 9, there was a statistically significant difference in the EE of participants in the three countries, with $F(2, 597) = 255.31, p < 0.00; \eta^2 = 0.46$. Difference in job satisfaction was significant amongst the three countries, with $F(2, 598) = 105.24, p < 0.00; \eta^2 = 0.26$. Similarly, difference in OC were significant amongst the three countries, with $F(2, 593) = 7.67, p < 0.00; \eta^2 = 0.02$.

Tukey's HSD post hoc test was used to ascertain the differences amongst groups. As indicated in Table 10, the data revealed that EE mean scores were significantly

different amongst the three countries. We found that OC mean scores were significantly different between South Africa and Zimbabwe, but did not differ significantly between Zimbabwe and Namibia. The JS means differed significantly amongst the three countries.

Discussion

The purpose of the study was to explore EE, OC, and JS in Namibia, South Africa, and Zimbabwe. South African employees reported higher EE, OC, and JS mean scores than their Namibian and Zimbabwean counterparts

Table 6. EE, OC, and JS mean scores in relation to job security

Country		Rating	N	Mean	SD	Significance level
South Africa	EE	Yes	107	6.25	0.68	< 0.00
		No	107	5.61	0.88	
Zimbabwe	EE	Yes	73	3.82	1.00	0.35
		No	94	3.45	1.20	
Namibia	EE	Yes	139	5.25	1.00	< 0.00
		No	72	4.81	1.45	
Country			N	Mean	SD	Significance level
South Africa	OC	Yes	107	4.76	1.18	< 0.00
		No	108	4.00	1.31	
Zimbabwe	OC	Yes	70	3.97	1.65	0.44
		No	96	3.77	1.69	
Namibia	OC	Yes	139	4.33	1.00	< 0.00
		No	72	3.76	1.11	
Country			N	Mean	SD	Significance level
South Africa	JS	Yes	107	5.32	1.00	< 0.00
		No	108	4.20	1.62	
Zimbabwe	JS	Yes	77	3.03	1.32	0.05
		No	97	2.67	1.07	
Namibia	JS	Yes	139	4.24	1.01	< 0.00
		No	72	3.31	1.40	

*Mean difference significant at the 0.05 level

Table 7. EE, OC and JS mean scores in relation to medical services

Country		Rating	N	Mean	SD	Significance level
South Africa	EE	Yes	194	5.95	0.83	0.49
		No	19	5.82	0.93	
Zimbabwe	EE	Yes	14	3.50	1.22	0.74
		No	157	3.61	1.10	
Namibia	EE	Yes	126	5.32	0.95	< 0.00
		No	85	4.80	1.13	
Country			N	Mean	SD	Significance level
South Africa	OC	Yes	195	4.37	1.31	0.87
		No	19	4.42	1.15	
Zimbabwe	OC	Yes	11	3.59	1.12	0.60
		No	156	3.87	1.69	
Namibia	OC	Yes	126	4.27	1.06	0.02
		No	85	3.93	1.05	
Country			N	Mean	SD	Significance level
South Africa	JS	Yes	195	4.81	1.46	0.18
		No	19	4.35	1.21	
Zimbabwe	JS	Yes	15	3.09	1.20	0.38
		No	159	2.80	1.20	
Namibia	JS	Yes	126	4.20	1.14	< 0.00
		No	85	3.52	1.26	

*Mean difference significant at the 0.05 level

(see also Buitendach & Moola, 2011; Sony & Mekoth, 2017) due to happiness with living conditions. Similarly, international research has revealed that employees with better macro-economic conditions are more committed, satisfied (Harter, 2018), and engaged (Oehler & Adair, 2018).

The data showed that job security in South African workplaces enhanced employees' engagement, commitment, and satisfaction levels as compared to their counterparts in Namibia and Zimbabwe. This finding is consistent with research by Madrigal and colleagues

(2016) and Smit, De Beer, and Pienaar (2016). The labour force reports in Zimbabwe and Namibia showed that the majority of employees were not permanent employees and not unionised (The Namibia Labour Force Survey, 2018; Namibia Zimbabwe Labour Force Survey, 2015). In the present study, 90 out of 178 respondents from Zimbabwe were not permanently employed. In Zimbabwe, the majority (18.3%) of the employees selected "other" as their employment economic sector, which could indicate that they worked non-formal jobs (for example, hawkers). In Namibia, the majority (23.1%) of employees worked in

Table 8. Means (M) and standard deviations (SD)

Industrial psychology constructs	M & SD	M & SD	M & SD
EE	South Africa (M = 5.93, SD = 0.84)	Zimbabwe (M = 3.61, SD = 1.13)	Namibia (M = 5.10, SD = 1.33)
OC	South Africa (M = 4.41, SD = 1.39)	Zimbabwe (M = 3.86, SD = 1.66)	Namibia (M = 4.13, SD = 1.06)
JS	South Africa (M = 4.76, SD = 1.45)	Zimbabwe (M = 2.83, SD = 1.20)	Namibia (M = 3.93, SD = 1.24)

Note. EE stands for employee engagement, OC stands for organisational commitment, and JS stands for job satisfaction

Table 9. ANOVA for industrial psychology constructs

		Sum of squares	df	Mean square	F	eta	Sig.
EE	Between groups	517.809	2	258.904	255.31	0.46	< 0.00
	Within groups	605.411	597	1.014			
	Total	1123.220	599				
OC	Between groups	28.805	2	14.403	7.67	0.02	< 0.00
	Within groups	1114.192	593	1.879			
	Total	1142.997	595				
JS	Between groups	359.283	2	179.642	105.24	0.26	< 0.00
	Within groups	1020.696	598	1.707			
	Total	1379.979	600				

*Mean difference significant at the 0.05 level

Table 10. Tukey's HSD

Industrial psychology constructs	(I) Country	(J) Country	Mean difference (I-J)	Std. error	Sig.
EE	South Africa	Zimbabwe	2.31174*	0.10285	< 0.000
		Namibia	0.83039*	0.09747	< 0.000
	Zimbabwe	South Africa	-2.31174*	0.10285	< 0.000
		Namibia	-1.48135*	0.10318	< 0.000
	Namibia	South Africa	-0.83039*	0.09747	< 0.000
		Zimbabwe	1.48135*	0.10318	< 0.000
OC	South Africa	Zimbabwe	0.55015*	0.14086	< 0.000
		Namibia	0.27281	0.13253	0.100
	Zimbabwe	South Africa	-0.55015*	0.14086	< 0.000
		Namibia	-0.27734	0.14173	0.124
	Namibia	South Africa	-0.27281	0.13253	0.100
		Zimbabwe	0.27734	0.14173	0.124
JS	South Africa	Zimbabwe	1.92939*	0.13301	< 0.000
		Namibia	0.83237*	0.12660	< 0.000
	Zimbabwe	South Africa	-1.92939*	0.13301	< 0.000
		Namibia	-1.09702*	0.13358	< 0.000
	Namibia	South Africa	-0.83237*	0.12660	< 0.000
		Zimbabwe	1.09702*	0.13358	< 0.000

*Mean difference significant at the 0.05 level

the finance, real estate, and business services employment economic sectors, and are classified as informal employees by the Namibian Labour Force Survey (2018). The International Labour Organisation (2016) states that non-permanent jobs are vulnerable employment. In South Africa, unions are synonymous with negotiating that employees have secure employment (Maleka, 2016). Improving job security and working conditions are the best strategies to enhance employees' morale and satisfaction levels (Chiboiwa et al., 2010). In addition, managers should implement motivational strategies like job rotation and enrichment (Robbins & Judge, 2017), teamwork (Kriek, 2019), and relationship-oriented supervision

(Spector, 2012). Despite the economic shrinkages in Namibia and Zimbabwe, employers should strive to offer equitable benefits.

The results showed that South African employees had high EE, OC, and JS levels because they perceived their wages to be living wages that enabled them to live a dignified life. Employees in Zimbabwe earned \$17.16 per month, suggesting that they earned poverty wages, leading to a lower sense of well-being (Carr et al., 2018). Employees in Zimbabwe earned less than the \$1.90 per day that has been established as a poverty wage by the World Bank (2016). Previous research has shown that skilled Zimbabwean employees go to South Africa and

take poorly-paid jobs in the agriculture sector (Roodt & Retief, 2014). For example, to mitigate the cost of high employee turnover, Ford paid employees \$5 per day in the 1980s (Raff & Summers, 1987). Parker and Baird (2018) and Bussin (2018) opine that paying employees a living or decent wage that enhances EE, OC, and JS should be part of the total remuneration package or strategy.

Previous research in South Africa has shown that employees who earn lower wages cannot buy nutritious food or afford transport, accommodation, and medical services (Maleka, 2016). In terms of the latter, the Zimbabwe Labour Force Survey (2015) showed that only nine percent of permanently employed employees had medical aid. The data showed that the majority of employees were not engaged ($n = 157$), committed ($n = 156$), or satisfied ($n = 159$) due to lack of medical services. In Zimbabwe, employers should acquire mobile health facilities that can be accessed by staff members, which would reduce high absenteeism rates and improve the well-being of staff members. The managerial implication is improved job performance due to getting medical treatment and psychological counselling to deal with stresses related to job insecurity (Smit et al., 2016). The unintended consequence of employees who do not have medical aid or cannot afford transport to go to work (Maleka, 2016) is that they end up abusing sick leave, which is a cost to the employer (Bussin, 2018).

Limitations of the study and suggestions for future research

Limitations of the study included the small sample size for comparisons amongst countries. Secondly, we utilised a cross-sectional design and findings may be different with a longitudinal study. We also did not analyse the employee demographics such gender and seniority to consider any differences in scores controlling for those variables. Another limitation was that the respondents were not evenly distributed in terms of industries. In future, a mixed method study should be conducted so that researchers could solicit rich data. Similar studies should be conducted in Southern African Development Community countries such Botswana, Zambia and Mozambique.

Conclusion

In conclusion, it might be argued that, due to better macro-economic conditions like job security and paying decent wages, employees in South Africa have higher EE, OC, and JS levels than employees in Namibia and Zimbabwe. As the Namibian and Zimbabwean economies rebound, the differences we observed are likely to diminish. The same effect could result if the South African economy contracted to bring it closer to those of Namibia and Zimbabwe in performance. Nonetheless, employers in Zimbabwe should endeavour to improve employment conditions, treat employees equitably, and invest in career opportunities to enhance employees' commitment and satisfaction levels.

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BRIEF REPORT

Sedentary behaviour and sleep problems among young, middle-aged, and older persons in South Africa: A brief report

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The study aimed to investigate the relationship between sedentary behaviour and sleep problems in a large national community sample in South Africa. We analysed an existing cross-sectional population data set, the “South African National Health and Nutrition Examination Survey”. The sample included 13 555 individuals (median age 34.0 years, interquartile range 25, range 15–98 years). Overall, the study population engaged < 4 hours (49.5%), 4 – < 8 hours (37.2%), 8 – < 11 hours (9.7%), and 11 or more hours (3.6%) in sedentary time a day. The prevalence of sleeping problems was 6.4% and 6.7% in the less than 4 and less than 8 hours sedentary time categories, respectively. The prevalence of sleeping problems was 9.8% and 9.4% in the less than 11 hours and 11 or more hours sedentary time categories, respectively. In the final adjusted logistic regression model, among 50 years and older, the highest sedentary time category was associated with sleep problems, while there was no association in the younger (15–49 years) age group and in the overall model. This could mean that persons at older age with sedentary behaviour are at an increased risk of sleep problems.

Keywords: adolescents, adults, sedentary behaviour, sleep problems, South Africa

Introduction

Sleep problems (including insomnia) is one of the most common health problems; globally affecting 10% to 20% of the population (Buysee, 2013). In the general South African population, the prevalence of insomnia symptoms was 7.1% (Peltzer & Pengpid, 2018). According to Buysee (2013), “the etiology and pathophysiology of insomnia involve genetic, environmental, behavioural, and physiological factors culminating in hyper arousal” (p.706). In a recent meta-analysis, sedentary behaviour increased the odds for insomnia and sleep disturbances (Yang, Shin, Li, & An, 2017). Most studies on sedentary behaviour and sleep problems have been conducted in high-income countries (see for example, Andersen & Garde, 2015; Levenson, Shensa, Sidani, Colditz, & Primack, 2016), and mostly focused on screen time such as computer use (Andersen & Garde, 2015) or social media use (Levenson et al., 2016). Only a few studies have examined the relationship between general sedentary behaviour and insomnia (see for example Pengpid & Peltzer, 2019).

Vallance, Buman, Stevinson, and Lynch (2015) were of the view that sleep outcomes were influenced by context-specific sedentary behaviours such as screen time, perhaps more than by overall sedentary time. One possible explanation for this could be additional “blue light exposure in the evening, which may suppress melatonin secretion and delay sleep onset” (Buman et al., 2015, p. 731). For example, in a study in the USA, in three age groups (<40 years, 40–65 years, and > 65 years), general sedentary behaviour was not associated with sleeping problems (Farnsworth, Kim, & Kang, 2015). However, in

a study in six middle-income countries in predominantly older adults, higher general sedentary time was overall associated with sleep problems (Vancampfort et al., 2018). The authors theorised that this was possibly attributed to increased blue light exposure. In a study among middle-aged and elderly adults in rural South Africa, 55.9% of participants engaged in < 4 hours, 34.1% in 4 to < 8 hours, and 9.9% in 8 or more hours in sedentary time a day (Pengpid & Peltzer, 2019). In this study, “high sedentary time was positively associated with snoring, gasping, breathing stops and restless sleep and negatively associated with insufficient sleep and sleep problems due to a traumatic event” (Pengpid & Peltzer, 2019, p. 1 422).

Goal of the study

The relationship between sedentary behaviour and sleep patterns may not apply to low- to middle-income countries in which activity levels of young people and adults may be different. There is a lack of data on general sedentary behaviour and sleep problems in young and middle-aged persons in low- and middle-income countries, which prompted this study.

Method

Participants and procedure

The study sample consisted of 13 555 persons, 15 years or older (median age 34.0 years, Interquartile Range 25, range 15–98 years) who completed the cross-sectional “South African National Health and Nutrition Survey” (for details, see Shisana et al., 2013). The proportion of women was 54.8% and 62.5% were residing in urban areas. The research ethics committee (REC) of the Human Sciences

Research Council of South Africa approved of the study (REC 6/16/11/11). The participants provided informed consent for the study.

Measures

Sedentary behaviour and sleep problems

Sedentary behaviour was assessed with two items “on the time spend sitting or reclining (lying) on a usual weekday or weekend day (excluding sleeping)” (Prince, LeBlanc, Colley, Saunders, 2017). Responses on sedentary behaviour were noted in hours and minutes. Sedentary times were truncated at 960 min/day (16 hours) or more. Sedentary time was categorized into < 4 hours, 4 ≤ 8 hours, 8 ≤ 11 hours, and 11 or more hours a day (Vancampfort et al., 2018).

Sleep problems were assessed with two items:

- On nocturnal sleep problems: “Overall, in the last 30 days, how much of a problem did you have with sleeping, such as falling asleep, waking up frequently during the night, or waking up too early in the morning?” and
- On difficulty with daytime functioning: “Overall, in the last 30 days, how much of a problem did you have due to not feeling rested and refreshed during the day (e.g., feeling tired or not having energy?”

Response options ranged from 0 = none, 1 = mild, 2 = moderate, 3 = severe, and 4 = extreme/cannot do (Stranges et al., 2012). Sleep problems were defined as having total scores of ≥ 4–8 (Peltzer & Pengpid, 2018). In the present study, the Cronbach’s alpha was for sleep problem scores was 0.82.

Lifestyle factors

Problem drinking was assessed with the Alcohol Use Disorders Identification Test–Consumption (AUDIT-C) (Bush, Kivlahan, McDonell, Fihn & Bradley, 1998). In the present study, the Cronbach’s alpha for scores from the AUDIT-C was 0.89.

Tobacco use was assessed with items in terms of the history of tobacco smoking and use of other tobacco products, duration and frequency of use (Shisana et al., 2013).

Physical activity was assessed with the General Physical Activity Questionnaire (GPAQ: Armstrong & Bull 2006; WHO, 2009). Using GPAQ guidelines (WHO, 2009), results were categorised into low, moderate, and high physical activity.

Other health factors

Self-reported chronic conditions included: High blood pressure, stroke, heart disease, a heart attack or angina (chest pains), high blood cholesterol, high blood sugar, or sugar diabetes (Shisana et al., 2013).

Experience of trauma events

Respondents were asked: “Have you ever experienced any of the following events?” This was asked of 14 events, for example “severe automobile accidents” and “learned about the sudden, unexpected death of a family member or a close friend?” Answers were coded as either Yes or No (Shisana et al., 2013).

Data analysis

Data were analysed with STATA software version 14.0 (Stata Corporation, College Station, Texas, USA) taking the complex study approach into account (Shisana et al., 2013). Multivariable logistic regression was used to estimate the associations between sedentary behaviour and sleep problems, for the overall sample, and two age groups (18–49 years and 50 years and older) separately. Model 1 was adjusted for age, sex, and residence. Model 2 was adjusted for Model 1 and life style factors (alcohol use, tobacco use, and physical activity); and Model 3 was adjusted for Model 2, chronic conditions, and traumatic life events.

Results

Overall, the study population engaged <4 hours (49.5%), 4 – ≤ 8 hours (37.2%), 8 – ≤ 11 hours (9.7%), and 11 or more hours a day (3.6%) sedentary time a day. As indicated in Table 1, the prevalence of sleeping problems was 6.4% and 6.7% in the less than 4 and less than 8 hours sedentary time categories, respectively; while the prevalence was 9.8% and 9.4% in the less than 11 hours and 11 or more hours sedentary time categories, respectively.

The prevalence of sleep problems increased from 3.7% in the youngest age group (15–24 years) to 25.2% in the oldest age groups (75 years and older). As indicated in Table 2, the highest prevalence of sleep problems was 19.9% in the less than 4 hours sedentary time oldest age group (75 or more years) and increased to 44.9% in the 11 hours or more sedentary time oldest group (75 years and older).

As indicated in Table 3, in the final adjusted logistic regression model, among 50 years and older, the highest sedentary time category was associated with sleep problems; while there was no association in the younger (18–48 years) age group and in the overall model.

Discussion and conclusion

The study focused on studying the relationship between sedentary behaviour and sleep problems in a large national community sample of individuals (15 years and older) in South Africa. The study found among persons 50 years and older that the highest sedentary time category was associated with sleep problems, while there was no association in the younger (15–49 years) age group and in the overall model. The link between sedentary behaviour and sleep problems may be explained by an elevated depression risk, increase in metabolic syndrome, and increased LED-backlit TV exposure (Vancampfort et al., 2018; Yang et al., 2017).

In a previous study in six middle-income countries, in a separate analysis among individuals 50 years and older, higher general sedentary time was associated with sleep problems, while no such association was found in persons 18 to 49 years old (Vancampfort et al., 2018). It is possible that the deleterious effects of sedentary behaviour, including increased risk of depression, metabolic syndrome, and blue light exposure (which all negatively affect sleep) increase with age and affect older persons to a larger extent than young persons. In a study among young adults in Canada, no association was found

Table 1. Sample characteristics

Variable	Sample	Prevalence of sleep problems by sedentary time			
	N (%)	< 4 hrs %	4 – < 8 %	8 – < 11 %	≥ 11 %
<i>Sociodemographic factors</i>					
All	13 555	6.4	6.7	9.8	9.4
Age (years)					
15–49	9 788 (77.7)	5.0	4.9	7.8	3.2
50 or more	3 757 (22.3)	11.6	12.7	16.4	24.3
Sex					
Female	7 941 (54.8)	7.8	8.1	11.9	11.2
Male	5 539 (45.2)	4.7	4.9	7.4	7.0
Residence					
Rural	4 643 (37.5)	6.8	5.4	10.3	10.6
Urban	8 912 (62.5)	6.1	7.5	9.6	8.8
<i>Lifestyle factors</i>					
Problem drinking					
No	10 819 (79.9)	2.9	4.6	14.2	0.0
Yes	2 496 (20.1)	6.4	6.6	10.1	9.6
Current tobacco use					
No	10 599 (81.7)	6.1	6.3	10.6	8.2
Yes	2 690 (18.3)	7.8	8.0	6.5	14.7
Physical activity					
Low	6 339 (46.3)	5.6	6.2	13.9	12.5
Moderate	1 588 (11.8)	5.1	6.2	5.3	6.1
High	5 241 (41.9)	7.3	7.3	5.1	4.0
<i>Other health factors</i>					
Chronic conditions					
None	9 636 (76.8)	4.4	4.3	5.9	4.4
One or more	3 290 (23.2)	13.6	14.4	18.5	22.9
Traumatic life events					
None	10 799 (79.5)	4.6	4.5	8.6	7.9
One or more	2 390 (20.5)	12.1	13.6	14.6	13.7

Table 2. Sleep problems by sedentary time and age groups

Sedentary (hours/day)	Prevalence of sleep problems					
	%	%	%	%	%	%
< 4	3.6	5.1	6.4	10.0	13.8	19.9
4 – < 8	3.4	5.1	6.5	9.1	17.3	23.2
8 – < 11	6.5	4.3	11.6	11.2	18.0	30.6
≥ 11	0.3	2.9	6.0	13.2	31.8	44.9
All	3.7	4.9	6.9	9.9	16.6	25.2
Age groups	15–24 <i>n</i> = 3 825	25–34 <i>n</i> = 2 678	35–49 <i>n</i> = 3 288	50–64 <i>n</i> = 2 520	65–74 <i>n</i> = 792	75 or more <i>n</i> = 445

Table 3. Associations between sedentary time and sleep problems by age groups

Age group	Sedentary time (hours/day)	Model 1	Model 2	Model 3
<i>Age 15 and above</i>		Sleep problems		
	< 4	1 (Reference)	1 (Reference)	1 (Reference)
	4 – < 8	1.01 (0.81, 1.25)	1.01 (0.79, 1.27)	0.99 (0.77, 1.27)
	8 – < 11	1.45 (0.98, 2.14)	1.50 (1.04, 2.16)*	1.37 (0.94, 2.00)
	≥ 11	1.28 (0.86, 1.91)	1.33 (0.88, 1.99)	1.32 (0.84, 2.07)
<i>Age 15–49</i>		Sleep problems		
	< 4	1 (Reference)	1 (Reference)	1 (Reference)
	4 – < 8	0.96 (0.74, 1.24)	1.02 (0.76, 1.38)	1.00 (0.73, 1.38)
	8 – < 11	1.48 (0.89, 2.47)	1.71 (1.06, 2.75)*	1.47 (0.87, 2.48)
	≥ 11	0.64 (0.34, 1.18)	0.68 (0.33, 1.39)	0.52 (0.22, 1.27)
<i>Age 50 or more</i>		Sleep problems		
	< 4	1 (Reference)	1 (Reference)	1 (Reference)
	4 – < 8	1.06 (0.79, 1.42)	0.97 (0.72, 1.32)	0.91 (0.66, 1.26)
	8 – < 11	1.31 (0.80, 2.15)	1.25 (0.75, 2.08)	1.22 (0.72, 2.09)
	≥ 11	2.23 (1.34, 3.71)**	1.99 (1.22, 3.26)**	2.06 (1.22, 3.49)**

Model 1: Adjusted for age, sex and residence; Model 2: adjusted for Model 1 and life style factors (alcohol use, tobacco use and physical activity); Model 3: adjusted for model 3 and chronic conditions and traumatic life events

between general sedentary behaviour and sleep problems (Kakinami et al., 2017). This could mean that persons at older age with sedentary behaviour are at increased risk of sleep problems, and interventions should be developed to address the problem.

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PROFESSIONAL ISSUES

Adult attachment theory and Rorschach Inkblot Method: A systematic literature review

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This critical appraisal and synthesis review explores the literature on the evidence of Rorschach Inkblot Method variables as measures of the attachment theory. We searched for publications making use of EBSCO Discovery Service (EDS) which included 41 databases of which Academic Search Premier, ScienceDirect, PsycARTICLES, and PsycINFO yielded the most results. Inclusion criteria were published studies concerning Rorschach and attachment theory where participants were older than 18 years. Non-academic literature and studies not published in English were excluded. We synthesised the evidence following the narrative approach of Petticrew and Roberts (2006). Findings suggest texture, oral responses, and Rorschach oral dependency strongly associated with attachment security, with other variables indicating weaker associations with attachment.

Keywords: attachment styles, attachment theory, projective techniques, representation, Rorschach

Introduction

Attachment theory provides a conceptual model to understand how an infant's early behaviours towards a caregiver adapt to the expectations of the caregiver. From these experiences, the child develops an internal working model which becomes a prototype for future relationships outside the family (Bartholomew & Horowitz, 1991). Internal working models of attachment become a vital part of the adult person's emotional regulation in intimate relationships and form part of what is referred to as the person's attachment style (Brennan, Clarke, & Shaver, 1998; Fraley & Shaver, 2000).

Components of attachment can be measured with projective measures, such as the Rorschach Inkblot Test. Bowlby developed attachment theory in 1969 (Bowlby, 1969) and John Exner published the Rorschach interpretive system and the Comprehensive System (CS) in 1974 (Weiner, 2003). The attachment components measured by the Rorschach Inkblot Test include experiences of disrupted care of attachment. The emotionally charged elements of the person's narratives are distorted in attempts to keep certain aspects of the distress related to the attachment carefully hidden. The experience, and the emotions attached to that experience, are transformed to be acceptable to consciousness or even kept out of consciousness by rather locking them away in the unconscious (George & West, 1999).

Important indicators of the Rorschach that relate to human attachment phenomena include:

- The texture determinant (Sum T) which relates to a person's interpersonal intimacy needs.
- The Sum H which indicates the level of attentiveness to people. This includes the subject's total number of human contents he/she provides in their responses. Some of these responses can be divided between good human responses (GHR) and poor human responses

(PHR); with GHR indicating an interpersonal history and experiences that are adaptive and effective.

Rorschach oral responses includes food and drink, oral activity (e.g. talking or licking), or mention of food organs such as the mouth or tongue. Some lesser studied indicators include the Hypervigilance Index (HVI) that relates to paranoid characteristics; Morbid Content (MOR); the Adjusted D (AdjD), which relates to a person's ability to maintain control under stress; the affective ratio (Afr) indicating an individual's interest in experiencing emotional stimulus; and Colour-shading blends (ColShdBld) that may indicate internal confusion related to feelings (Exner, 2005). For instance, as seen in the results section of this review paper, Rorschach Inkblot variables inconstantly predicted attachment relationships.

The Rorschach has not been studied in combination with attachment theory in an African context, but both topics have been individually covered. In South Africa, the Rorschach has been used in both clinical practice and research settings (Brink, 2013) and is regarded as a classified and certified psychological test by the Health Professions Council of South Africa (HPCSA, 2017). The culture-free stimuli of the assessment, facilitates its use in cross-cultural contexts. However, South African specific norms have not been developed and Western nomothetic interpretations are often used. Nonetheless, a number of researchers have suggested adjustments in the administration procedures to accommodate individuals unfamiliar with the standardised test procedures (Aronstam & Macklin, 2004; Moletsane & Eloff, 2006). These include methods of self-interpretation, giving the explanations twice, allowing the respondent to use multiple languages and drawings to express what they perceive, performing the inquiry phase directly after each card's response, and allowing for a variety of seating possibilities. Daws, Du Preez, and Aronstam (2004) also emphasised the need to

take traditional beliefs and values of cultural groups into consideration during the interpretation of the results.

Mary Ainsworth, one of attachment theory's most prominent figures, developed integral premises for the theory in Uganda (Ainsworth, 1967), and since then a relatively small number of studies have been performed on the African continent (Van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2006). As an evolutionary paradigm, attachment theory predicts that multiple caregivers may form attachment relationships with an infant. In various African studies, including those conducted in Nigeria, Mali, Botswana, Zambia, and South Africa the researchers found that the collectivistic nature of indigenous cultures implicated multiple caregivers in the form of especially female relatives, which stands in contrast with European and North-American norms where the mother and father will be the main attachment figures (Spies, Sterkenburg, Van Rensburg, & Schuengel, 2016; Van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2006). Kermorian and Liederman (1986) already observed in 1986 that Gusii children from Kenya displayed culture-specific behaviours to express their attachment related emotions.

Goal of the study

The goal of the critical appraisal and synthesis study was to review available literature on Rorschach Inkblot Method variables that related to constructs of adult attachment theory. A critical appraisal and synthesis review assesses the quality and relevance of selected literature in order to extract data that can be compared or combined in a synthesis (Petticrew & Roberts, 2006). It is appropriate for this study which aimed to explore the associations between the Rorschach and attachment by systematically reviewing the coding variables in the Rorschach and how they are associated with attachment relationships. Findings may inform psychological practice using the Rorschach Inkblot test as a measure of attachment.

Method

Search strategy

Making use of EBSCO Discovery Service (EDS), we searched 41 databases including Academic Search Premier, ScienceDirect, PsycARTICLES, and PsycINFO which provided the highest number of relevant articles. The following terms were used: adult attachment AND Rorschach, attachment theory AND Rorschach* + adult attachment AND Rorschach + Rorschach OR adult projective + r-pas, self-reported attachment styles + patterns + representations AND Rorschach responses + related scores, R-PAS AND attachment styles*, attachment classification AND r-pas, attachment AND inkblot, Exner comprehensive system, R-PAS, adult attachment picture measure AND projective measure.

Since Bowlby developed attachment theory in 1969 (Bowlby, 1969) and John Exner published the Rorschach interpretive system and the Comprehensive System (CS) in 1974 (Weiner, 2003), the researchers only included studies published between 1974 and 2017. The inclusion criteria consisted of published studies concerning Rorschach and attachment theory variables; in other

words, Rorschach responses indicating adult attachment variations, attachment styles, or attachment representations from 1974 to 2017 in which the participants were older than 18 years. Studies from all countries were included. The authors excluded non-academic literature from the search, duplicate reports, reports published independently, unpublished literature, letters, and commentaries. Studies were also excluded if they were published languages other than English.

Figure 1 presents our search tree chart applying our inclusion and exclusion criteria.

In this review, we include nine relevant full-text articles selected in line with the inclusion and exclusion criteria. An independent reviewer followed the same steps as indicated above and the lists of selections were compared to ensure consensus. Cohen's kappa coefficient was used to calculate the inter-rater reliability between the two reviewers. The inter-rater agreement on selected titles was $k = 0.88$ and for abstract and full text selections, $k = 1$. According to Pallant (2007), a kappa of above 0.8 is indicative of good inter-rater agreement.

We appraised the selected articles for quality utilising the guidelines set out by the Critical Appraisal Skills Program (CASP: 2006; Petticrew & Robberts, 2006) as well as reliability and validity indicators by Ravitz and colleagues (2010) (see Table 1). In addition the first author applied the guidelines provided by Brink, Van der Walt, and Van Rensburg (2006) and Grove, Gray and Burns (2015) to ensure honesty and to avoid fabrication, falsification, and plagiarism.

In accordance with to the appraisal instruments mentioned, one of the nine selected articles (Conklin, Malone, & Fowler 2012) was excluded because it was based on secondary data, therefore conclusions could not be drawn from results of the study as there was no statistical support.

For the data synthesis, we applied critical appraisal review indicators set out by Petticrew and Roberts (2006):

- The individual studies were organised categorically according to the descriptions set out in the methodology of the articles.
- Thereafter the findings in these categories were analysed.
- Lastly, the findings across all the studies were synthesised weighing its quality and applicability to the objectives of our study.

The Health Research Ethics Committee of the North-West University (NWU-00188-15-S1) granted ethical approval for the study.

Results

In total, the authors identified 17 Rorschach variables, with varying strengths of association with adult attachment in the nine included studies (see Table 1). The most significant variables identified as linking with attachment were the texture (T) response variable, oral responses, and Rorschach oral dependency (ROD). The sample sizes of the studies varied from single-case study to samples of $n = 224$. Exner's CS was used in the interpretation of the Rorschach in all the studies and a variety of attachment measurements were used. However, all the studies used

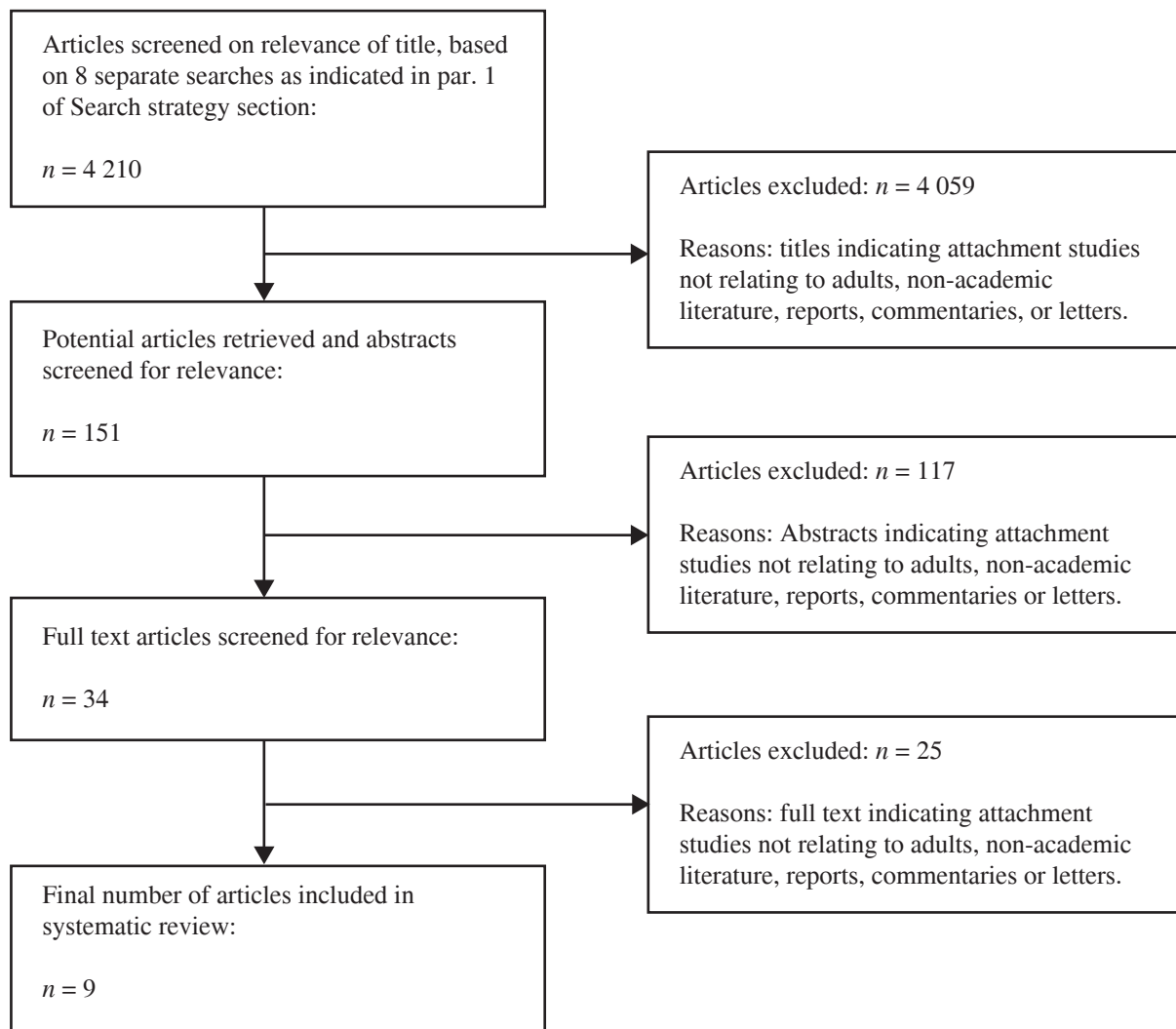


Figure 1. Diagram of the process of selection of literature for the systematic review

self-report measures that are deemed less reliable and valid in measuring attachment compared to, for example, the Adult Attachment Interview (Cassella & Viglione, 2009; Iwasa & Ogawa, 2010).

Texture response

The most promising Rorschach variable showing associations with attachment was the texture response (T). Exner describes T as a response in which “the shading components of the blot are translated to represent a tactual phenomenon, with no consideration to the form features” (Exner, 2005, p. 32). Both Cassella and Viglione (2009) and Iwasa and Ogawa (2010) found significant associations between T and attachment. Concurrently, both studies found that $T = 1$ was associated with attachment security and $T > 1$ was associated with a preoccupied attachment style. In addition, Casella and Viglione (2009) reported a significant relationship between $T = 0$ and avoidant attachment as measured by the Relationship Questionnaire (RQ) and the Relationship Scales Questionnaire (RSQ). However, Iwasa and Ogawa (2013) failed to find any significance between the same variables in a Japanese sample. Yet, it must be noted that the Japanese study in 2013 never directly compared the Rorschach variables

with attachment measures. In 2016, again Iwasa and Ogawa associated the texture response of the Rorschach Inkblot Method with adult attachment style constructs. Their findings indicated a partial association with anxious attachment and a score of $T > 1$ of texture response and tactile accessibility.

Oral responses

Duberstein and Talbot (1993) studied the relationship between oral and human responses in the Rorschach and attachment styles in 198 participants. Oral responses include food and drink (“ice-cream” or “water” for instance), oral activity (“people talking”), and food organs (“mouth” or “tongue”). In their study, they administered the Rorschach and the attachment questionnaire, counted the number of oral responses and human responses in the Rorschach, and then examined whether the number of oral responses and human responses could differentiate between attachment styles. A curvilinear relationship was found between no response and more than four oral responses and attachment insecurity; and one to three oral responses and attachment security. Masling (1986) associated oral imagery with dependent and help-seeking

Table 1. Rorschach Inkblot Method variables associated with attachment theory constructs

Articles	Rorschach coding variable/s	Findings or association	Sample size	Strength of relationship	Attachment measuring instruments used in the study	Validity and reliability of the attachment measuring instrument according to Ravitz et al. (2010)
Cassella & Viglione (2009).	Texture response (T)	T=1 is closely associated with a secure attachment style. T>1 is associated with a preoccupied style. T=0 is associated with an avoidant style.	79	Secure ($T = 1$): $d = 0.580$ Preoccupied ($T > 1$): $d = 0.38$ Avoidant ($T = 0$): $d = 0.52$ Regression analysis yielded significant predictions in all the above instances ($p < 0.0005$, $p < 0.028$, $p < 0.025$).	The relationship questionnaire (RQ). The relationship scales questionnaire (RSQ).	Reliability: + Validity: ++
Iwasa & Ogawa (2010).		T = 1 is closely associated with the secure attachment style. T > 1 is associated with the preoccupied style. T = 0 was inconclusive.	47	Statistically significant difference in means between the three T-groups and preoccupied, secure and attachment anxiety, as tested by ANOVA.	The RQ.	Reliability: + Validity: ++
Iwasa & Ogawa (2013).		Inconclusive results when linking.	224	No direct associations were investigated. Only assumptions based on indirect inferences.	Experiences in close relationship scale (ECR).	Reliability: ++ Validity: ++
Iwasa & Ogawa (2016).	Texture response	Anxious attachment is partially associated with a score of T > 1. No significant association with absence of T score and avoidant attachment (Iwasa & Ogawa, 2016).	35	Statistically significant difference in means between the T-groups and the avoidant and attachment anxiety, as tested by ANOVA	Experiences in close relationship scale (ECR).	Reliability: ++ Validity: ++
Conklin, Malone, & Fowler (2012).	Texture (T), human movement (M), good human vs poor human responses (GHR and PHR).	T = 0: Avoidant attachment T = 1: Secure T > 1: Preoccupied. Profile made up of: T > 1, M- > 1 or M+ < 3, GHR - PHR < 1, with H ≥ 3 that is representative of an individual with either an avoidant or preoccupied attachment style. Profile made up of T = 1, M+ ≥ 3, M- ≤ 1, GHR-PHR ≥ 1, with H ≥ 3 that is representative of an individual with a secure attachment style. Profile made up of T = 0, M- > 1 or M+ < 3, H < 2 or GHR-PHR < 1, that is representative of an avoidant attachment style.	n/a	n/a	n/a	n/a

Duberstein & Talbot (1993).	Oral responses and human responses.	A curvilinear relationship was found between 0 and > 4 oral responses and insecurity and 1–3 oral responses and security. Human responses relating to aggression on card III was associated with attachment insecurity.	198	Regression analysis yielded significant prediction ($p < 0.01$).	Attachment questionnaire.	Reliability: ++ Validity: ++
Lečbych & Seitl (2013).	Rorschach oral dependency (ROD) score.	Higher attachment anxiety is associated with a higher ROD score only for people with no psychiatric treatment history	31	Avoidant: Insignificant. Anxious: $r = 0.683$.	ECR relationship scale.	Reliability: ++ Validity: ++
Berant & Wald (2009).	Rorschach indexes indicating ego-boundary perception (barrier and penetration), use of projective identification, devaluation and splitting defences, and scores that represent boundary blurring.	Permeable boundaries, projective identification, cognitive slippage indicating boundary blurring are associated with anxious/preoccupied/anxious-resistant attachment styles. – INC: $r = 0.2$ – FAB: $r = 0.24$ – INC + FAB: $r = 0.27$	89	Variable related to anxious-resistant attachment: – Projective identification: $r = 0.24$ – Penetration: $r = 0.29$ – INC: $r = 0.2$ – FAB: $r = 0.24$ – INC + FAB: $r = 0.27$	10-item Hebrew-language scale measuring attachment anxiety and avoidance similar to the English-language ECR.	None.
Berant & Zim (2013).	Reality testing, thinking processes, coping and defence mechanisms	The Rorschach allows for observation of a person's problem-solving strategies, reality testing, and thinking processes as well as self-representations and interpersonal concerns.	One case study	Qualitative description of findings	ECR scale	Reliability: ++ Validity: ++
Shaver, Berant, Mikulincer, & Segal (2005).	Affective ratio (Afr), colour form (CF<) ColShdBld, diffuse shading (Y), inanimate movement (m), morbid content (MOR), food, feral movement (FM) and L, sum of reflection-reflection form + form reflection (Fr + rF), and Clothing (Cg). CF, Y, m, MOR, CDI, DEPI, M, X-%	Seven Rorschach scores associated with affect regulation and need-gratification (Afr, CF< ColShdBld, Y, m, MOR, food) were associated with anxious/preoccupied attachment. Four Rorschach scores relating to avoidance (low FM and high L, Fr + rF and Cg scores) were associated with avoidant attachment. Elevated scores of CF<Y< m, MOR, CDI, DEPI, M, X-% associated anxious attachment	72	Afr: $r = 0.48$ CF: $r = 0.47$ ColShdBld: $r = 0.36$ Y: $r = 0.46$ m: $r = 0.36$ MOR: $r = 0.26$ Food: $r = 0.42$ Low FM: $r = 0.44$ L: $r = 0.42$ Fr+rF: $r = 0.33$ Cg: $r = 0.26$	10-item Hebrew-language scale measuring attachment anxiety and avoidance.	None available.
Berant (2017).			One case study	Qualitative description of findings	Clinical observation and inferences	None available

Note. Attachment assessment measures statistical significance:

Reliability: “+”, “++”, “+++” indicate adequate test and retest, inter-rater/inter-item; one “+” for each criterion. Three “+” (eg. “+++”) indicate excellent properties.

Validity: One “+” indicates convergence with other attachment scales. Two “+” indicate other evidence of convergence, discriminant and predictive validity. Three “+” indicate excellent properties.

Pearson correlation (Mukaka, 2012):

- $r=0.10-0.29$ is small
Cohen's d-value (Pallant, 2007)
*d=0.2 is small
- $r=0.30-0.49$ is medium
*d=0.5 is medium
- $r=0.50-1.0$ is large
*d=0.8 is large

behaviour and this could relate to similar attachment constructs (Juni, Masling, & Brannon, 1979).

Human responses

Duberstein and Talbot (1993) compiled a list of all the human responses from the participants' protocols. These protocols were scored by two raters; the second rater was not blind to the first raters' scores. No difference was observed between the number of human responses given by securely attached individuals and insecure individuals. However, they observed that human responses relating to aggression on card III was associated with attachment insecurity. Therefore, in general, the number of human responses in this study was not associated with attachment, and only a single card showed promise.

Rorschach oral dependency score

Another promising Rorschach variable is the ROD score, which measures interpersonal dependency and is a predictor of conformity, compliance, help, and support-seeking behaviour (Bornstein & Masling, 2005; Lečbych & Seidl, 2013; Masling, Rabie, & Blondheim, 1967). Lečbych and Seidl (2013) found that higher attachment anxiety is associated with a higher ROD score only for people with no history of psychiatric treatment. However, the study yielded insignificant results with clinical participants (Lečbych & Seidl, 2013). The strength of the correlation between attachment anxiety and a high ROD score was large. Yet, the low sample size limits the statistical power and 22 out of 31 participants were psychology students which impacts the generalisability to other populations (Lečbych & Seidl, 2013).

Ego-boundary perception projective identification, devaluation, and splitting defences

Berant and Wald (2009) found that permeable boundaries, projective identification, and cognitive slippage (indicating boundary blurring) are associated with the anxious/preoccupied/anxious-resistant attachment styles. The study involved a relatively large sample size ($n = 89$). However, it made use of an attachment assessment measure on which there is no available statistical information and the strength of the relationship between the studied Rorschach variables and attachment constructs is small. This decreases the believability of the study. The variables that the researchers of this study speculated would correlate with attachment avoidance resulted in insignificant findings.

Hyper-activating strategies, deactivating strategies, and Rorschach scores

Shaver and colleagues (2005) studied 72 self-reports of attachment and responses to the Rorschach. They examined whether the motivational, cognitive, and affective characteristics that manifested in the anxious-resistant and anxious-avoidant attachment bonds manifested in the same way in people's Rorschach responses. The study indicated that a constellation of seven Rorschach scores represents the underlying affective and cognitive processes associated with the hyper-activating strategies used by people with anxious-resistant attachment. These seven Rorschach scores are: (i) attraction to emotional situations (Afr); (ii)

problems in emotional regulation (CF); (iii) intrusion of negative affect (colour shading blends); (iv) experience of situational stressors (m); (v) sense of helplessness (Y); (vi) failure to maintain a positive self-image (MOR); and (vii) adoption of a dependent relational position (food), and they indicate the hyper-activating strategies used by people with anxious-resistant attachment (Shaver et al., 2005).

Besides self-report measures, observational and cognitive experimental techniques have found interpersonal and intrapersonal manifestations of hyper-activating and deactivating strategies (Baldwin, Fehr, Keedian, & Seidel, 1993; Collins & Feeney, 2000; Fraley & Shaver, 1997; Fraley & Shaver, 1998; Simpson, Rholes, & Nelligan, 1992; Shaver et al., 2005). Hyper-activating and deactivating strategies are more implicit and less conscious markers of attachment constructs (Shaver et al., 2005). This study indicated that self-report measures of attachment avoidance and anxiety were moderately related to implicit manifestations of these dimensions in the Rorschach (Shaver et al., 2005). Variables that were investigated, but that were not statistically significant, included devaluation and splitting as well as human movement responses (Conklin et al., 2012; Mikulincer & Horesh, 1999).

Discussion and implications of this study

This systematic review aimed to critically appraise and synthesise extant literature to explore the associations between the Rorschach and attachment for the quality and relevance of selected literature in order to extract data that can be compared or combined in a synthesised theory. We observed the most consistent links to be the T (Cassella & Viglione, 2009; Iwasa & Ogawa, 2010), oral response (Duberstein & Talbot, 1993), and ROD (Lečbych & Seidl, 2013).

Rorschach variables that were investigated but had the weakest association with attachment are form quality, M, and human responses (Conklin et al., 2012). Duberstein and Talbot (1993) observed no relation between the number of human responses and differentiating attachment styles. However, they also observed that human responses relating to aggression on card III was associated with attachment insecurity. Yet, no other data or theory supports this speculation.

Implications for practice

Rorschach variables that should be used with caution in relation to attachment are: (i) attraction to emotional situations (Afr); (ii) problems in emotional regulation (CF); (iii) intrusion of negative affect (colour shading blends); (iv) experience of situational stressors (m); (v) sense of helplessness (Y); (vi) failure to maintain a positive self-image (MOR); and (vii) adoption of a dependent relational position (food), indicating hyper-activating strategies used by people with anxious-resistant attachment (Shaver et al., 2005). The Rorschach variables Afr, CF, ColShdBld, Y, and m indicate medium correlation strength with preoccupied attachment and the following four Rorschach variables: low FM (seldom experiences of intense emotions), L (disengaged attitude) and Fr+rF

(grandiose self-representation), also indicate medium correlation strength to avoidant attachment style.

Variables of the Rorschach which currently cannot be interpreted in relation to attachment due to limitations in sample size include GHR:PHR scores, the hypervigilance index, MOR, V, D, and AdjD; which assessed the client's thinking processes, reality testing, coping and defence mechanisms (Berant & Zim, 2013).

Limitations of the study

All of the studies reviewed made use of self-report measures of attachment which aligns with the pair bonds dimensional perspective of attachment theory, thus limiting its application to a narrow focus on the attachment constructs. Using attachment measurements such as the Adult Attachment Interview (AAI) in relation to Rorschach may improve the reliability and validity as well as its application to attachment in the context of parenting (Ravitz et al., 2010). Two of the studies made use of attachment measures with no statistical information, which influenced the believability of the results (see Berant & Wald, 2009; Shaver et al., 2005). It is therefore unclear whether accurate attachment constructs were captured by the measure and consequently whether the appropriate attachment constructs were associated with the Rorschach variables.

Additionally, no studies were found that represented the African continent. Studies have been conducted separately on both Rorschach (Brink, 2013) and Attachment theory (Van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2006) in Africa, but none in combination. This poses limitations as was previously mentioned. The expression of attachment behaviour has cultural specific nuances and the application of the Rorschach also has to be adapted for use in African settings (Moletsane & Eloff, 2006).

Conclusion

This review found the T, oral response, and the ROD score consistently associated with attachment constructs of security and insecurity dimensions. However, some associations between adult attachment and the Rorschach were not all statistically or theoretically supported. The Rorschach Inkblot requires further study as a measure of attachment relationships among adults.

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