

Personality and mental health in a cohort of black African teachers: The SABPA Study

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I firstly want to give praise to the Lord for giving me this opportunity in my life. Thank you Father for your love and grace. Thank you for this gift in my life that I may study Psychology, and I pray that my work may be to honour what you have planned for me.

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Summary

The aim of this study was to determine the relationship between the Big Five personality traits and mental health within a cohort of black African teachers. A review of literature revealed that teachers frequently experience mental- and general health problems (e.g. Ngidi & Sibaya, 2002; Olivier & Venter, 2003; Johnson, Cooper, Cartwright, Donald, Taylor & Millet, 2005; Parker, Martin, Colmar, & Liem, 2012). However, very little could be found on personality traits and how this relates to the health and well-being of teachers, especially in the challenging South African context.

This study forms part of the SABPA (Sympathetic Activity and Ambulatory Blood Pressure in Africans) project conducted within AUTHeR (Africa Unit for Transdisciplinary Health Research). The overarching purpose of this multidisciplinary project was to investigate the markers of bio-psycho-social health in urbanized teachers. This longitudinal project ran from January 2008 to November 2012 and involved a total of 409 Black and White secondary school teachers. The research was conducted in the North West province of South-Africa. This study focused on the 200 urbanized Black teachers who were recruited by means of convenience sampling from the Dr. Kenneth Kaunda educational district in the Potchefstroom area in the North West province during 2008. The sample included 101 men and 99 women, ranging between the ages of 25 and 60 years.

Ethical permission for the SABPA and FORT3 projects was obtained from the ethics committee of the North-West University (ethical clearance numbers NWU-00036-07-S6 and NWU-00002-07-A2 respectively). Participants filled out informed consent forms prior to data collection, and after the objectives of the study and the research procedures were explained to them, all their questions were answered.

Data collection for the baseline phase of the project lasted for 50 days during February to May 2008. Four participants arrived at the North-West University (NWU)

Metabolic Unit on the Potchefstroom campus after work each day. After being welcomed and oriented, a battery of psychometric tests was administered in English. A secondary analysis was performed on data obtained by means of the Basic Traits Inventory-Short, Mental Health Continuum-Short Form and the General Health Questionnaire-28 in order to determine the relationship between personality functioning and mental health of the participants.

Results showed that this cohort of teachers from the North West province experience distress in the workplace, but that they also experience surprisingly high levels of mental health. The findings suggest that there are few differences between the male and female subgroups in this regard. The study also found that there is indeed a relationship between personality traits and the general- and mental health of participants. Neuroticism showed a significant positive correlation with psychological distress, while Conscientiousness showed a significant negative correlation. All five personality traits showed significant correlations with the mental health of educators. Neuroticism correlated negatively with mental health, while Extraversion, Openness to Experience, Conscientiousness and Agreeableness correlated positively with mental health. Furthermore, certain personality traits (i.e. Neuroticism and Extraversion) were shown to be significant predictors of teachers' levels of general and mental health. The strong association found between this cohort of teachers' personality functioning and their general and mental health contributes toward an understanding of the processes that underlie the distress and mental health of teachers, and could play an important role in future attempts toward health promotion.

Keywords

Black teachers, education, mental health, personality, South African context, teacher stress.

Opsomming

Die doel van hierdie studie was om die assosiasie tussen die Groot Vyf persoonlikheidstrekke en die geestesgesondheid van 'n kohort swart onderwysers te bepaal. 'n Oorsig van internasionale literatuur toon dat onderwysers gereeld geestes- en algemene gesondheidsprobleme ervaar. (bv. Ngidi & Sibaya, 2002; Olivier & Venter, 2003; Johnson, Cooper, Cartwright, Donald, Taylor & Millet, 2005; Parker, Martin, Colmar & Liem, 2012). Min literatuur is egter beskikbaar wat die verband tussen persoonlikheidstrekke en die gesondheid en welstand van onderwysers bestudeer, veral binne die uitdagende Suid-Afrikaanse konteks. Hierdie studie vorm deel van die SABPA (Sympathetic activity and Ambulatory Blood Pressure in Africans) projek wat binne AUTHeR (Africa Unit for Transdisciplinary Health Research) uitgevoer word.

Die oorkoepelende doel van hierdie multidisplinêre projek was om die merkers van bio-psigo-sosiale gesondheid in verstedelike onderwysers te ondersoek. Hierdie longitudinale projek het geloop van Januarie 2008 tot en met November 2012, en 'n totaal van 409 swart en wit hoërskool onderwysers was betrokke. Die navorsing is uitgevoer in die Noordwes-provinsie van Suid-Afrika. Hierdie studie het gefokus op 200 verstedelike swart onderwysers wat geselekteer is deur gerieflikheidsteekproefneming binne die Dr. Kenneth Kaunda opvoedkundige distrik in die Potchefstroom gebied van die Noordwes-provinsie. Die populasie het 101 mans en 99 vrouens tussen die ouderdom van 25 en 60 jaar ingesluit.

Etiese toestemming vir die SABPA en FORT3 projekte is verkry vanaf die etiekomitee van die Noordwes Universiteit (etiese klaringsnommers NWU-00036-07-S6 en NWU-00002-07-A2 onderskeidelik). Alvorens data ingesamel is, het deelnemers ingeligte toestemmingsvorme ingevul, nadat die navorsingsprosedures aan hulle verduidelik en hulle vrae beantwoord is. Data insameling vir die grondslagfase van die projek het 50 dae geduur, vanaf Februarie tot en met Mei 2008. Vier deelnemers het na werk elke dag by die Noordwes

Universtiteit (NWU) se Metaboliese Eenheid op die Potchefstroom kampus aangemeld. Na verwelkoming en oriëntasie het hulle 'n versameling psigometriese toetse in Engels afgeneem. 'n Sekondêre analise is uitgevoer op data wat verkry is deur die *Basic Traits Inventory-Short*, *Mental Health Continuum-Short Form* en die *General Health Questionnaire-28*, om sodoende die verhouding tussen persoonlikheidsfunksionering en geestesgesondheid van die deelnemers te bepaal.

Resultate het getoon dat hierdie groep onderwysers distres in die werkplek ervaar, maar verbasend genoeg, ook hoë vlakke van geestesgesondheid toon. Die bevindinge suggereer dat daar min verskille tussen die mans en vrouens in hierdie opsig bestaan. Die studie het ook bevind dat daar wel 'n verband is tussen die persoonlikheidstrekke en algemene-, en geestesgesondheid van deelnemers. Neurotisme het 'n betekenisvolle positiewe korrelasie met psigologiese distres getoon, terwyl Konsensieusheid 'n betekenisvolle negatiewe korrelasie getoon het. Al vyf persoonlikheidstrekke het betekenisvolle korrelasies met die geestesgesondheid van onderwysers getoon. Neurotisme het negatief gekorreleer met geestesgesondheid, terwyl Ekstraversie, Openheid tot Ervaring, Konsensieusheid en Instemmingheid, positief gekorreleer het met geestesgesondheid. Bowendien, sekere persoonlikheidstrekke (m.a.w. Neurotisme en Ekstraversie) het getoon om betekenisvolle voorspellers van onderwysers se vlakke van algemene- en geestesgesondheid te wees. Die sterk assosiasie wat gevind is tussen die kohort van onderwysers se persoonlikheidsfunksionering en hulle algemene en geestesgesondheid dra by tot die verstaan van die proses wat onderliggend is aan distres en geestesgesondheid van onderwysers, en kan 'n belangrike rol speel in toekomstige pogings na gesondheidsbevordering.

Sluteltermes: Geestesgesondheid, onderwys, onderwys stres, Suid-Afrikaanse konteks, swart onderwysers

Preface

Article Format

This mini-dissertation follows the article format as described by General Regulation A.13.7 of the North-West University in partial fulfilment of the requirements for a professional Master's degree.

Intended Journal

The target journal for publication is the Journal of Psychology in Africa. The manuscript and the reference list have been styled according to the specifications of the APA (American Psychological Association; 6th edition) publication guidelines for the purpose of examination. Where journal specifications differ from the APA publication guidelines, appropriate amendments will be made before submission for publication.

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The Journal of Psychology in Africa includes original articles, review articles, book reviews, commentaries, special issues, case analyses, reports, special announcements, etc. Contributions should attempt a synthesis of emic and etic methodologies and applications. Specifically, manuscripts should: 1) Combine quantitative and qualitative data, 2) Take a systematic qualitative or ethnographic approach, 3) Use an original and creative methodological approach, 4) Address an important but overlooked topic, and 5) Present new theoretical or conceptual ideas.

Also, all papers must show an awareness of the cultural context of the research questions asked, the measures used, and the results obtained. Finally the papers should be practical, based on local experience, and applicable to crucial development efforts in key areas of psychology.

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Abstract: English abstracts must be supplied with all submissions accompanied by a French, Portuguese and/or Spanish translation. For data-based contributions, the abstract should be structured as follows: Objective — the primary purpose of the paper, Method — data source, subjects, design, measurements, data analysis, Results — key findings, and Conclusions — implications, future directions. For all other contributions (except editorials, letters and book reviews) the abstract must be a concise statement of the content of the paper. Abstracts must not exceed 200 words. It should summarise the information presented in the paper but should not include references.

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Appoh, L. (1995). The effects of parental attitudes, beliefs and values on the nutritional status of their children in two communities in Ghana. Unpublished masters dissertation, University of Trondheim,

Norway Peltzer, K. (2001). Factors at follow-up associated with adherence with directly observed therapy (DOT) for tuberculosis patients in South Africa. *Journal of Psychology in Africa, 11*, 165–185.

Sternberg, R. J. (2001, June). Cultural approaches to intellectual and social competencies. Paper presented at the Annual Convention of the American Psychological Society, Toronto.

Canada. Cook, D. A., & Wiley, C. Y. (2000). Psychotherapy with members of the African American churches and spiritual traditions. In P. S. Richards & A. E. Bergin (Ed.), *Handbook of psychotherapy and religiosity diversity*. Washington DC: American Psychological Association.

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Letter of Consent

We, the co-author(s), hereby give consent that Meindert Adrianus Korver may submit the manuscript for the purposes of a mini-dissertation. It may also be submitted to the Journal of Psychology in Africa for publication.

Prof. J.C. Potgieter

Co-author and Supervisor

Dr S.M. Ellis

Co-author

Literature Review

Introduction

Literature shows that there has been an increase in research concerned with educator stress and burnout (Boyle, Borg, Falzon & Baglioni, 1995; Kyriacou, 2001). Studies carried out in several countries indicate that a large proportion of teachers report relatively high levels of occupational stress. This is also well-documented in reviews on educator stress conducted by Borg (1990) and Kyriacou (2001). Studies that compared teachers with other white-collar professional groups have also found that teachers reported higher levels of occupational stress (Johnson, Cooper, Cartwright, Donald, Taylor & Millet, 2005; Parker, Martin, Colmar, & Liem, 2012). In the United States, one quarter of all new teachers leave teaching within four years (Benner, 2000). Rowan, Corenti and Richard (2002) have found in an American context that fifty percent of teachers that start teaching in urban environments leave the teaching profession within five years or less. Research conducted in South Africa shows that local teachers also experience overwhelming stress in the workplace (Coetzee, Jansen & Muller, 2008; Ngidi & Sibaya, 2002), and that the associated stress is a direct cause of decreased levels of job satisfaction and motivation (Jackson & Rothmann, 2005).

Understanding the processes that underlie stress and well-being in teaching is therefore an important objective to ensure the success of health promotion efforts, but also for effective teacher education and successful educational outcomes. The aim of this study was therefore to determine the association between the Big Five personality traits and mental health in a cohort of black African teachers. A brief review of constructs central to this stated aim follows below.

Mental Health

Empirically, mental health and mental illness are not opposite ends of a single measurement continuum (Keyes 2002; 2003). In order to achieve true health we have to meet

the unique requirements of mental health along with eradication of mental illness. Most research in psychology in the past focused more on the disease model. Thanks to the disease model, psychology has been able to produce an extensive understanding of mental illness and has developed a language to describe the various pathologies that affect millions of people (Baumgardner & Crothers, 2010). However, together with an ever increasing number of psychologists interested and involved in the movement of Positive Psychology, authors like Ryff and Singer (1998) argue that psychology should focus on more than pathology, as the disease model is of limited value when it comes to promoting health and preventing illness.

Positive Psychology is the umbrella term for the exploration of positive emotions, positive character traits and enabling institutions (Seligman, Steen, Park & Peterson, 2005). The findings from positive psychology research aim to add to knowledge about human suffering, weaknesses and disorders in order to gain a more balanced scientific understanding of human experiences (Seligman et al., 2005). In addition to this, health and its impacts have according to Keyes and Grzywacz (2005) been studied separately and in a piecemeal fashion. That is, very few researchers have studied an aggregated notion of mental health, because scholars investigate variations in the quantity of specific facets of well-being that are symptoms of mental health. In this regard, Keyes and Lopez (2002) suggest investigation of the predictors of various dimensions of mental health, including emotional well-being (e.g., happiness or satisfaction), psychological well-being (e.g., personal growth), and social well-being (e.g. social integration). Indeed, no research could be found that used such an aggregated notion of mental health to investigate its relation to personality among Black teachers within a South African context.

Mental health as a syndrome is represented by symptoms of positive feelings and positive functioning in life (Baumgardner & Crothers, 2010). The presence of mental health is described as flourishing, whereas the absence of mental health is characterized as

languishing in life (Keyes, 2002). The concepts of hedonic and eudaimonic well-being are also often used to define mental health. Hedonic well-being refers to how and why people experience their lives in positive ways. It is often operationalized as subjective well-being, which consists of the predominance of positive emotions over negative ones, and life satisfaction (Joshaloan & Nosratabadi, 2008). Eudaimonic well-being, on the other hand, also encompasses the wider domains of personal growth, purposeful engagement and self-development (Scheuller & Seligman, 2010). The concepts of hedonic and eudaimonic well-being are distinct but related components of psychological functioning, and according to Keyes, Shmotkin and Ryff (2002) are both needed to fully understand the nature of well-being.

In his Complete Mental Health (CMH) model, Keyes (2002) operationalizes mental health as a syndrome of symptoms of positive feelings and positive functioning in life, where the hedonic and eudaimonic views on well-being are incorporated. According to this model, mental health is conceptualized not as the absence of symptoms of pathology, but as the presence of a global combination of positive feelings (emotional well-being), as well as positive functioning (psychological and social well-being) in various life domains (Keyes, 2002).

Emotional well-being (EWB), can be described as the experience of life satisfaction and more positive than negative affect, where for example the person experiences him- or herself as in a good spirit and not hopeless (Keyes, 2002). This is strongly reminiscent of the subjective well-being construct described above. In order to capture a more holistic view of well-being, Keyes' CMH-model however also includes a psychological well-being (PWB) component (Keyes, 2002). PWB is divided into six dimensions of self-evaluation of one's life, including self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy. Whereas EWB and PWB are portrayed primarily as

private phenomena (Joshaloan & Nosratabadi, 2008), the third component of Keyes' CMH-model, called social well-being (SWB), is included in acknowledgment of the fact that people's happiness often remains embedded in and strongly influenced by social structures and communities. Social well-being is divided into the dimensions of social integration, contribution, coherence, actualization and acceptance, which in combination reflect the functioning of individuals in their social world.

Until the 'birth' of the movement of Positive Psychology slightly more than a decade ago (Seligman & Csikszentmihalyi, 2000), very little research had been done on such an aggregated notion of mental health and the predictors of its dimensions (Joshaloan & Nosratabadi, 2008, Keyes & Lopez, 2002). Scholars have become increasingly interested in variations of specific facets of well-being (i.e. emotional, psychological and social well-being) and the factors that predict these 'symptoms' of positive mental health (Keyes & Lopez, 2002).

Mental health is indeed influenced by psychological factors such as the personal features that guide our way of thinking and feeling, and our perception of our worlds. Our everyday behaviour is steered by both intrapersonal and interpersonal influences (Baumgardner & Crothers, 2010). Personality functioning is one example of an intrapersonal factor that could have a significant influence on our lives and well-being.

Personality Theory and Mental Health

Personality traits, described by King (2008) as the pervasive styles we use in the ways that we think, feel and behave, have been found to be strongly related to affective and non-affective aspects of well-being. These pervasive styles have also been found to affect vocational interest and choices, work styles, job satisfaction and effectiveness of job performance (Costa, 1996).

Various theories and associated measurements of personality structure and functioning have seen the light, of which the Five Factor Model is likely the most well-known (Albuquerque, Pedroso de Lima, Matos & Figueiredo, 2011). The five-factor model (FFM) of personality (Costa & McCrae, 1995; Goldberg, 1990) provides a usable framework to explore the role of personality characteristics in individual behaviour, as well as work-related performance and behaviour. This model has indeed stimulated a large body of both empirical and theoretical work on the relationships between personality variables and a number of outcome variables, performance being the most widely studied. This model organizes personality traits hierarchically within five distinguishable dimensions, namely Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. The dimensions are defined by Costa & McCrae (1992) as follows:

Neuroticism refers to the general tendency to experience negative affect such as fear, sadness, embarrassment, anger, guilt and disgust. The higher one scores on this dimension, the more likely you are to experience psychological distress.

Extraversion represents the quantity and intensity of energy directed outwards into the social world. This domain refers to characteristics such as sociability, assertiveness, activeness, and being talkative. Both extroverts and introverts usually experience levels of happiness above a neutral point during the course of a week, but extroverts generally experience themselves as happier than introverts. This is even true if extroverts spend time alone (Compton, 2005).

Openness to Experience measures the active seeking and appreciation of experiences for its own sake. Openness to Experience consists of elements such as active imagination, aesthetic sensitivity, and attentiveness to inner feelings, preference for variety, intellectual curiosity and independence of judgment. Open individuals are more likely to be unconventional, to question authority and to entertain new ethical, social, and political ideas,

whereas low scores on Openness to Experience are usually indicative of individuals who are more conventional and conservative.

Agreeableness is a dimension that measures the kinds of interaction an individual prefers, ranging from compassion to tough-mindedness. The agreeable individual is fundamentally altruistic, showing sympathy and eagerness to help others, and believes that others will be equally helpful in return. They are usually more popular than more antagonistic and tough-minded individuals.

Conscientiousness measures the degree of organization, persistence, control and motivation a person shows in goal directed behaviour. The individual that is conscientious is purposeful, strong-willed, and determined. High scores on conscientiousness are associated with academic and occupational achievement (Compton, 2005).

The Big Five model and its relationship to subjective well-being as one of the mental health facets have attracted some research attention. Research by Garcia and Erlandsson (2010) has indicated that personality is the strongest predictor of subjective well-being. With regard to the Five-Factor model of personality, the Neuroticism-, Extraversion- and Conscientiousness facets of personality have in various studies been found to predict certain facets of mental health, but in different ways and to different extents (Albuquerque et al., 2011; Josefsson et al., 2011). More specifically, Neuroticism has been found by Albuquerque et al., (2011) to predict especially negative affect. They found that it explains a significant amount of variance in both positive affect and life satisfaction. The Extraversion facet was found to predict mainly positive affect, while low scores were found to predict emotional exhaustion and a lack of personal achievement (Albuquerque et al., 2011; Josefsson et al., 2011). Conscientiousness has been found to predict positive and negative affect to an equal extent. However, low scores on Conscientiousness and Agreeableness increase the likelihood of developing pathological symptoms that might include susceptibility to depersonalization,

while high scores on Openness to Experience predict less susceptibility (Pishghadam & Sahebjam, 2012).

Cultural Considerations

Although the relationship between personality and well-being has received research attention in individualistic cultures, little research has been done in an African context (Györkös, Becker, Massoud, de Bruin, & Rossier, 2012). Because personality traits have been found to be both biologically based and culturally-influenced tendencies, attitudes and values (Allik & McCrae, 2004; McCrae & Costa, 1997), it would be erroneous to assume that the relationships found between personality and well-being would hold true across cultures.

Cross-cultural comparability of personality traits has therefore become central in the field of personality and assessment. The aim of cross-cultural comparability is to explain similarities and differences in personality functioning within and between cultures, and to optimize individual functioning. In cross-cultural research, a distinction is often made between individualism and collectivism as constructs that define a typical set of attributes that people possess within a community. Vogt and Laher (2009) have for instance found differences between individualist and collectivist cultures with regard to cognitions, motivation for behaviours, emotions, patterns of social behaviour, communication styles and ethical codes. It could therefore be hypothesized that culturally based differences in personality functioning could also be associated with measurable differences in the levels of mental health found within different cultures.

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Manuscript for Examination

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Personality and mental health in a cohort of black African teachers: The SABPA Study

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Abstract

The aim of this study was to determine the relationship between the Big Five personality traits and mental health within a cohort of black African teachers. Forming part of the Sympathetic Activity and Ambulatory Blood Pressure in Africans (SABPA)-project, this study used a cross-sectional survey design, and included urban African (n=200) educators residing in the North West Province of South Africa. The Basic Trait Inventory-Short, Mental Health Continuum-Short Form and the General Health Questionnaire-28 were administered to all participants. Results showed this group of participants to experience both symptoms of distress and good mental health. The Big Five personality traits showed significant correlations with indices of both general- and mental health. Neuroticism and Extraversion emerged as the strongest predictors of mental health levels within this group of participants. Understanding the processes that underlie stress and mental health of teachers may aid in the success of health promotion efforts, teacher education and education outcomes.

Keywords

Black teachers, education, mental health, personality, South African context, teacher stress.

Introduction

Research has highlighted an international trend that increasing numbers of qualified teachers are leaving the profession because of the stress associated with their working conditions and the associated impact on their well-being (Johnson, Cooper, Cartwright, Donald, Taylor & Millet, 2005; Parker, Martin, Colmar & Liem, 2012). Teaching has also been found to be a stressful profession in South Africa (Ngidi & Sibaya, 2002; Olivier & Venter, 2003). Surveys among South-African educators indicate that teachers experience the reforms introduced from 1994 onwards as overwhelming (Coetzee, Jansen & Muller, 2008; Ngidi & Sibaya, 2002), and that the associated stress is a direct cause of decreased levels of job satisfaction and motivation (Jackson & Rothmann, 2005). The effects that stress have on teachers have however been shown to go beyond their work satisfaction and performance, with multiple effects on their functioning on both physical and psychological levels having been identified (Boshoff, 2011; Jackson & Rothmann, 2005). Black African male teachers have for example been found to have a higher incidence of metabolic syndrome (MS) due to the impact of work-related stress (De Kock, Malan, Potgieter, Steenekamp & Van Der Merwe, 2012). Jackson and Rothmann (2005) have found that teachers in the North-West province report even higher levels of exhaustion and cynicism than the South African norm, and that this is mainly due to factors like job demands (overload), lack of personal growth opportunities, as well as lack of control because of limited resources. According to Visser (2006) teachers experience high levels of negative affect and emotional exhaustion as they struggle with disciplining children, receive no support from mentors and have little job autonomy. This justifies recent calls for the exploration of protective factors that may be associated with the mental health of educators (Khan, 2012).

The way in which mental health is conceptualized has seen profound changes in the recent past. In contrast to previous definitions, which focused mainly on the absence of

mental illness, Joshaloon and Nosratabadi (2009) argue that mental health should rather be seen as a complete state of emotional, social and psychological well-being. This reflects the World Health Organization's (2011, p.1) description of mental health as: "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community". Keyes's (2002) operationalization of mental health as a syndrome of symptoms of positive feelings and positive functioning in life has received widespread support. His Complete Mental Health (CMH) model is also regarded as a holistic and inclusive model because it incorporates both the hedonic and eudaimonic views on well-being (Keyes, 2002). According to Keyes' CMH-model, mental health is conceptualized not as the absence of symptoms of pathology, but as the presence of a global combination of positive feelings (emotional well-being), as well as positive functioning (psychological and social well-being) in various life domains (Keyes, 2002).

Until the 'birth' of the movement of positive psychology now more than a decade ago (Seligman & Csikszentmihalyi, 2000), very little research had been conducted on such an aggregated notion of mental health and the predictors of its dimensions (Joshaloon & Nosratabadi, 2009; Keyes & Lopez, 2002). However, scholars have recently become increasingly interested in variations of specific facets of well-being (i.e. emotional, psychological and social well-being) and the factors that predict these 'symptoms' of positive mental health (Keyes & Lopez, 2002). More specifically, the impact that certain personality traits have on an individual's perception and management of stress and its influence on well-being is a research avenue that has shown particular promise in European samples (Györkös, Becker, Massoud, de Bruin & Rossier, 2012). Bakker, De Jong, Houkes and Jansen (2008) found that individuals who have higher trait negative affectivity experienced higher levels of emotional exhaustion in the workplace than people with lower negative affectivity. A recent

study conducted by Pishghadam and Sahebjam (2012) confirms that in an Iranian context certain personality traits were strongly related to decreased well-being, as represented by emotional exhaustion, depersonalization and a lack of personal achievement. As illustrated by these examples, the majority of researchers have focused on the association between personality traits and the absence of psychological health. However, a number of recent studies, specifically within the teaching profession, have shown factors such as self-efficacy, self-esteem, optimism, hope and a certain combination of personality traits to predict well-being and to buffer the negative effects of stress on teacher's performance (Khan, 2012). Joshaloon and Nosratabadi (2009) have also shown that, aside from its association with symptoms of psychopathology, certain personality traits are related to the presence of positive mental health. These authors found that four of the so-called 'Big Five' personality traits (i.e. Neuroticism, Extraversion, Conscientiousness and Agreeableness) successfully discriminate between individuals reporting complete mental health (flourishing), moderate mental health and those that reported an absence of mental health (languishing) as defined by Keyes (2002). Albuquerque, Pedroso de Lima, Matos and Figueiredo (2011) also found evidence that supports a strong relationship between personality traits and teachers' subjective well-being in a Portuguese setting. Although these results emphasize the importance of the Big Five personality traits in predicting well-being (Joshaloon & Nosratabadi, 2009) in Western contexts, the relationship between personality and well-being remains relatively unexplored in an African context (Györkös et al., 2012). The few studies that have been conducted focused on personality constructs and its association with the absence of mental health, rather than within a holistic conceptualization. Research conducted within the South African context by Coetzee, et al. (2008) suggests that the psychological distress among secondary school teachers in South Africa may be mediated by personality traits. A study by Ngidi and Sibaya (2002) showed that teachers who display high levels of

neuroticism are usually anxious, worried and overly reactive, and are inclined to react in an irrational and rigid way when handling stressful situations, while introverted teachers are more prone to stress-related educational changes as they are quieter, shy, more withdrawn and less sociable.

The relationship between personality traits and mental health, defined holistically as both the absence of disease and the presence of positive mental health, remain relatively unexplored in the South African context. Since personality traits have been found to be both biologically-based and culturally-influenced tendencies, attitudes and values (Allik & McCrae, 2004; McCrae & Costa, 1997), it would be erroneous to assume that the relationships found between personality and well-being in Western contexts would hold across all cultures. The research question of the current study is therefore whether and how the Big Five personality traits are associated with mental health (conceptualized as both the absence of disease, and the presence of positive mental health) among black African teachers in a South African context.

Aim

This study aimed to determine the association between the Big Five personality traits and mental health within a cohort of black African teachers. The specific research objectives of this study were to:

- describe the participant personality functioning and mental health and explore similarities and differences between gender groups;
- determine the association between Basic Traits Inventory-Short (BTI-Short) personality domains and subscales of the General Health Questionnaire–28 (GHQ-28);
- determine the association between BTI-Short personality domains and subscales of the Mental Health Continuum - Short Form (MHQ-SF), and

- establish the degree to which the subscales of the BTI-Short predict participants' levels of general and mental health as measured with the GHQ-28 and MHC-SF.

Method of Investigation

Context of the Current Study

This study forms part of the SABPA (Sympathetic activity and Ambulatory Blood Pressure in Africans) project conducted within AUTHeR (Africa Unit for Transdisciplinary Health Research). The overarching purpose of this multidisciplinary project was to investigate the markers of bio-psycho-social health in urbanised teachers. This longitudinal project ran from January 2008 to November 2012 and involved a total of 409 Black and White secondary school teachers. In order to participate in the broader SABPA project, which also included various physiological measurements, certain exclusion criteria were applied in order to ensure the validity of these measures. This included pregnancy and lactation; the use of any acute/chronic medication for hypertension, arthritis, tuberculosis, coagulation factors, inflammation, epilepsy and mental disorders (antidepressants); vaccination and the donation of blood within the 3 months prior to data collection according to the SABPA Study Protocol, as discussed in Mashele, van Rooyen, Malan and Potgieter (2010). Data collection for the baseline phase of the project lasted for 50 days during February to May 2008. During this time, four participants arrived at the North-West University (NWU) Metabolic Unit on the Potchefstroom Campus after work each day. After being welcomed and oriented, a battery of psychometric tests was administered. Some of the psychological measures were completed before dinner and others after dinner in order to guard against fatigue, constituting a total time of about 90 minutes. The data was collected by trained post-graduate psychology students, who worked under the supervision of registered psychologists. After completing the psychological measures participants were allowed to relax, and they went to bed at approximately 22:00. A number of physiological measures were taken the next morning, after

which participants were allowed to return to work. Feedback on the results obtained via psychological measures was later given in the form of an information session followed by a workshop on stress management.

Design

The study involved the secondary analysis of data collected during the baseline phase of the SABPA (Sympathetic Activity and Ambulatory Blood Pressure in Africans) project. The data for this particular study is of a quantitative nature and was collected based on a cross-sectional design.

Participants

Due to the lack of literature findings regarding personality and mental health among black Africans, this study focused on baseline data obtained during 2008 from a total of 200 black urbanized teachers. These participants were recruited by means of a convenience sampling method, and consisted of both men (n=101) and women (n=99) whose ages ranged from 25 to 60 years. Participants were from the Dr. Kenneth Kaunda educational district in the Potchefstroom area of the North West province. Some data is unaccounted for as due to the exclusion of five participants' data that were not suitable for interpretation because the questionnaires were not completed correctly.

Procedure

A literature study was conducted, focusing on the concepts of personality and mental health in general, but also on findings specifically within the South African teaching context. Electronic databases that were used include Ebscohost, ScienceDirect, Google Scholar and SA ePublications. After a review of current literature a number of objectives were formulated to address lacunae regarding the understanding of personality traits and its association with psychological well-being. This study involved the secondary analysis of psychological data, and specifically the personality and mental health data that were obtained during the 2008

baseline measurements. Permission to use this data was obtained from the principle investigator of the SABPA project and confounding variables such as socio-economic status and level of education were accounted for by the homogeneity of the participant group. In spite of these precautions, the results of this study are reported in a circumspect manner, as possible impacts of external variables during the process of data capturing does not allow for generalization of results to populations outside of this participant group.

Measures

The following measures, which formed part of the psychosocial test battery, were used for the purpose of this study. All tests were administered in English, as all participants were competent in English as their second language.

Basic Traits Inventory-Short (BTI-Short) (Taylor & De Bruin, 2013). The BTI-Short is a self-report questionnaire consisting of 60 items. Respondents indicate on a five-point Likert-type scale to what degree they agree with a statement (Taylor & De Bruin, 2013). The questionnaire measures the Big Five personality traits known as Neuroticism, Extraversion, Conscientiousness, Agreeableness and Openness to Experience. The subscale measuring each trait consists of 12 items selected from the full length Basic Traits Inventory item pool (Taylor & De Bruin, 2013). Six criteria were used in selecting the items for the short version. Each item had to: (a) correlate strongly with the total scale score, (b) contribute toward the reliability of its respective subscale (Cronbach's alpha of at least 0.80 for each scale), (c) saliently load on its intended factor, but not on any other factors in a joint factor analysis of the items, (d) be free of item bias across different language groups, (e) each of the original 24 facets had to be represented by at least one item (but preferably three items), and (f) the total scores of the brief scales had to correlate strongly with the total scores of the full length scales. This study will focus on the 5 subscales, and facet scale scores will therefore not be considered.

A total of 1000 individuals participated in the validation of this measure for use in the South African context, representing four language groups (English, n = 250; Afrikaans, n = 250; Nguni, n = 250; and Sotho, n = 250) (Taylor & De Bruin, 2013). Reliability estimates for the five subscales all yielded Cronbach's coefficient alpha scores larger than 0.80, indicating that the BTI-Short yields reliable results when used in the South African context. The BTI-Short was included to measure personality traits within this group in order to determine its possible association with mental health.

General Health Questionnaire - 28 (GHQ-28) (Goldberg & Hillier, 1979). The General Health Questionnaire-28 (GHQ-28) is a 28 item self-report scale used as a screening measure to identify individuals who are likely to have, or to be at risk of developing psychiatric disorders. It is often used as a measure of psychological well-being (Jackson, 2007; Nagyova et al., 2000). The subscales of the GHQ-28 include questions enquiring about a person's experience of Somatic Symptoms (SS), Anxiety and Insomnia (AS), Social Dysfunction (SD) and Severe Depression (DS). The response options to the different items include "Not at all", "No more than usual", "Rather more than usual" and "Much more than usual". The GHQ items were scored by making use of the GHQ-28 scoring method (0,0,1,1), which yields a potential minimum score of 0 and a maximum of 28. Good reliability and validity indices for the GHQ-28 across various cultures were reported by Goldberg et al. (1997). Wissing and van Eeden (2002) further indicate similar reliabilities in a South African sample. More specifically, Wissing et al. (1999) reported acceptable reliability and validity indices for use in Setswana-speaking adults in the North West Province of South Africa. Cronbach's alpha reliabilities reported for the Total Scale Score in a South African sample was 0.91 (Wissing & van Eeden, 2002). The GHQ-28 and its subscales will be used to signify the presence of mental illness.

The Mental Health Continuum-Short Form (MHC-SF) (Keyes, 2002). The MHC-SF is a self-report questionnaire consisting of 14 items which assesses the level of mental health of the individual. Respondents indicate how much of the time during the past 30 days – “all”, “most”, “some”, “a little”, or “none of the time” – they felt symptoms of positive affect and functioning (Keyes, 2005). This instrument yields a total score and subscale scores for each of the following sub-constructs: Emotional well-being (EWB) (items 1-3); Social well-being (SWB) (items 4-8); and Psychological well-being (PWB) (items 9-14). The EWB subscale measures aspects associated with a person’s subjective well-being, and includes his/her satisfaction with life, the absence of negative affect, and the presence of positive affect. The SWB subscale combines the facets of social integration, social contribution, social coherence, social actualization, and social acceptance, and the PWB subscale measures the level of self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy experienced by a person.

The MHC-SF also allows for an individual’s level of mental health to be placed on a continuum ranging from optimal mental health or flourishing (described as being filled with positive emotion, and experiencing optimal psychological and social functioning) to incomplete mental health or languishing (described as a state of emptiness, and stagnation) (Keyes, 2002). The MHC-SF has been validated for use within an African context. The total scale score yielded a Cronbach's alpha of 0.74 in a random sample of Setswana-speaking adults in the North West province of South Africa (Keyes, et al., 2008), and has been found to produce data that is reliable and valid within this cultural context. The Mental Health Continuum – Short Form was included to determine the degree of mental health of individuals within this population to establish its possible association with participants’ personality functioning.

Data Analysis

The SPSS (version 17) statistical software package was used to conduct statistical analyses. Descriptive statistics of the participant group's demographic profile, personality functioning, as well as their well-being are reported, including average scores and standard deviations for the two gender groups. Cronbach's coefficient alpha values were calculated in order to determine the internal consistency of the subscales of the BTI-Short, as well as MHC-SF and the GHQ-28. *t*-tests were used to determine differences between the male and female subgroups. Partial correlations were used to explore the relationship between the BTI-Short personality domain scales and the subscales of the MHC-SF and the GHQ-28 independent of age and gender. A process of structural equation modelling (SEM) was used to establish the degree to which the subscales of the BTI-Short predict participants' levels of mental health as measured with the MHC-SF and the GHQ-28. Confounding variables such as socio-economic status and level of education were accounted for by the homogeneity of the participant group.

Ethical Aspects

Ethical permission for both the SABPA and FORT3 projects was obtained from the ethics committee of the North-West University (ethical clearance numbers NWU-00036-07-S6 and NWU-00002-07-A2 respectively). Participants filled out informed consent forms prior to data collection after the objectives of the study and the research procedures had been explained to them and all their questions had been answered. Risks and discomforts were minimized by using fieldworkers trained in psychology and working under the supervision of registered psychologists. Participants had the choice of receiving feedback on the results of the psychological tests at a later date during an information session, which was followed by a workshop focusing on stress management. With regard to the current study, which involved the secondary analysis of data obtained as part of the overarching SABPA project, anonymity

of participants remained a priority and it was facilitated by the use of participant numbers. Data analysed in this study could only be accessed from a centralized data source and with the permission of the principle investigator of the SABPA project. The questionnaires from which data were captured are stored in a secure environment and are available for verification of the accuracy of data capturing. The possibility of publishing this data in a scientific journal was communicated to participants during the acquisition of their informed consent. Additional ethical considerations relevant to this study include considering the possibility that physiological tests and other external factors may have impacted participants' scores on psychological measures. The impact of these factors was minimised through collection of data in a well-structured environment, and the more invasive physiological measures only being taken the day after psychological data was collected.

Results

Reliability

According to Nunnally and Bernstein (1994), Cronbach's alpha coefficient estimates the reliability of a scale by determining the internal consistency, or the average correlation between interrelated items within that test. A modest reliability of 0.70 could be regarded as sufficient during the early stages of scale validation, but a Cronbach's alpha coefficient of above 0.70 is desired (Nunnally & Bernstein, 1994). From Table 1 it is clear that all the subscales of the BTI-Short, the GHQ-28 and the MHC-SF can be considered reliable, with Cronbach's alpha coefficient values greater than 0.70.

Descriptive Statistics

Descriptive statistics for the total group and for the male and female subgroups are reported in Table 1. Table 1 also contains the results of the *t*-tests, which were used to explore differences between the male and female subgroups, and the associated *p*-values to indicate the statistical significance of differences. Statistical significance does not necessarily

imply that results will be of significance in practice, as tests have a tendency to yield smaller p -values as the sizes of the data sets increase (Berben, Sereika & Engberg, 2012; Nel, Steyn & Brits, 2008). Effect sizes were therefore also calculated to determine the practical significance of the difference between the two gender groups. Ellis and Steyn (2003) state that practical significance can be understood as a large enough difference to have an effect in practice. One way to comment on practical significance is to use the standardized difference between the means of the gender groups. Reported as Cohen's d -value, the difference between the two means is divided by the estimate for standard deviation (Ellis & Steyn, 2003). Interpretation of effect sizes can be done according to the following guidelines (a) small effect: $d=0.2$, (b) medium effect: $d=0.5$ and (c) large effect: $d=0.8$ (Ellis & Steyn, 2003). In human sciences, d -values of approximately 0.5 and larger can be considered practically significant (Steyn & Ellis, 2009).

As indicated in Table 1, the only difference between the male and female subgroups that reached the 1% level of significance was reported for the Agreeableness subscale of the BTI-Short, where the female group reported a higher mean score than the males. However, this difference was only of small to medium practical significance. Female participants also reached slightly higher scores of small practical significance on the anxiety and insomnia, depressive symptoms and total scale scores of the GHQ-28. This seemed to coincide with a tendency for the females to score slightly lower, although not significantly so, on the emotional- and social well-being subscales of the MHC-SF. None of these differences reached the 5% level of significance. As a result of the relative absence of significant differences between the men and women on personality dimensions, general health or mental health data, it was deemed appropriate that all subsequent analyses regarding the association between personality and mental health could be conducted on the group as a whole.

It is interesting to note from Table 1 that this group of participants scored higher on Agreeableness and lower on Neuroticism than on the other sub-scales. This general tendency also emerged within both gender groups. With regard to their well-being, the results in Table 1 suggest that this group experienced at least some psychological distress. The GHQ-28 total scale score of 8.26 is substantially higher than the proposed cut-off score of 4 which, according to Goldberg & Hillier (1979), would indicate the presence of distress or presence of pathological symptoms, in other words 'caseness'. Participants' subscale scores on the GHQ-28 indicate that psychological distress is primarily expressed as anxiety and insomnia (AS) and somatic symptoms (SS) within both gender groups. In spite of this, the total group and both subgroups also reported experiencing relatively good mental health. Only 2% of the group reported their mental health as languishing, 42% were moderately mentally healthy, and 55% were flourishing.

Correlation

Table 2 indicates the correlation between personality (BTI-Short) dimensions and general health (GHQ-28), as well as mental health (MHC-SF) indicators. Only 2 of the BTI-Short personality dimensions correlated significantly with the subscales of the GHQ-28. Neuroticism correlated positively at the 1% level of significance with all the facets of the GHQ-28. However, Conscientiousness showed negative correlations at the 1% level of significance with GHQ-AS, GHQ-SD and GHQ-T, and at the 5 % level with GHQ-SS. When considering the presence of positive mental health, all the BTI-Short personality dimensions showed significant correlations with the MHC-SF and its subscales. Neuroticism correlated negatively with all but the social well-being subscale of the MHC-SF. Extraversion, Openness to Experience, Conscientiousness and Agreeableness correlated positively at the 1% significance level with all the MHC-SF subscales, with the exception of Agreeableness that showed no significant association with participants' emotional well-being.

Table 2 also shows significant interscale correlations between the constructs measured by the BTI-Short, with the exception of the Neuroticism-subscale.

Structural Equation Models

Structural equation modelling was subsequently performed to determine the degree to which the different personality traits measured by the BTI-Short predicted participants' health and well-being. Figure 1 shows the regression weights and standardized regression coefficients (In parenthesis) of the initial or full model, with significant paths between personality traits and the MHC-SF and GHQ-28 total scale scores indicated with an asterisk. Neuroticism was revealed to be a significant predictor of the GHQ-28 total scale score ($\beta=0.56$) It also showed a significant negative predictive relationship with the MHC-SF total scale score ($\beta = -0.29$). The only other personality trait that significantly predicted participants' mental health was that of Extraversion, which showed a positive predictive relationship with the MHC-SF ($\beta = 0.32$) at the 5% level of significance.

Figure 2 shows the reduced model after all non-significant paths were removed. The reduced model shows how the statistical significance of the aforementioned relationships has increased with the elimination of non-significant pathways. The unique contributions that Neuroticism and Extraversion have on the GHQ-28 and MHC-SF are indicated on the remaining paths, and the beta-values reflect a slight increase in the statistical significance of those paths retained in the reduced model. Fit indices of the full (Figure 1) as well as the reduced (Figure 2) structural models are reported in Table 3. Following careful evaluation, it was decided that the model presented in Figure 2 was statistically and theoretically the best fit to the data. The Comparative Fit Index for the chosen structural model was 0.79, which is slightly lower than the guideline value of 0.9, suggested by Mueller (1996) as indicative of satisfactory overall fit. The chi-square test divided by the degrees of freedom was 1.84. Although interpretation of this ratio depends to a large extent on the viewpoint of the

investigator, it should ideally not exceed the guideline value of 2 (Mueller, 1996). The third fit index reported for both models is the Root Mean Square Error of Approximation (RMSEA). According to Blunch (2008), models with a RMSEA exceeding 0.10 should not be accepted. Together with the previous indexes, the RMSEA of 0.065, with 90% confidence interval of [0.058; 0.072] suggests satisfactory fit for the reduced model.

Discussion

This study aimed to determine the association between the Big Five personality traits and mental health within a cohort of black African teachers. In order to achieve this, the first objective was to describe the participant group's demographic profile, personality functioning and mental health and determine similarities and differences between gender groups.

Results revealed that there was little difference of any statistical- and/or practical significance between the male and female subgroups regarding personality dimensions, and their overall mental health. In fact, the only difference that reached the 1% level of significance was for Agreeableness, with the female group reporting higher scores than the male group. This is in line with the findings of Chapman, Duberstein, Sörensen and Lyness (2007), who reported that women tend to score higher on Agreeableness due to biological and socializing processes. However, this difference was only of small practical significance. It was therefore deemed appropriate that all subsequent analyses regarding the association between personality functioning and participants' self-reported well-being be conducted on the group as a whole.

With regard to their well-being, the GHQ-28 results show that this group scored very high on the experience of psychological distress. According to Goldberg & Hillier (1979) scores above 4 on the GHQ-28 serves as a strong indication that a person or group is experiencing some symptoms of pathology. This cohort of participants' GHQ-28 total scale score was more than twice the suggested cut-off. This confirms results from an international

survey on occupational stress which ranked teaching as the second most stressful job out of 26 occupations analysed, with only ambulance drivers exceeding the stress levels found in the teaching profession (Johnson et al., 2005). It is also in line with Jackson and Rothmann's (2005) findings that educators in the North-West province experience more distress than the South African norm for educators. These results may be partially explained by Hobfoll and Lilly's (1993) findings that common resistance resources are lower in historically black communities, making these subjects more prone to experience higher levels of stress.

In spite of the above, this group of teachers obtained scores on the MHC-SF that are indicative of good mental health. A higher percentage (55%) of participants within the current sample reported that they are flourishing when compared to other studies conducted in international (18%) (Keyes 2005) and African (20%) (Keyes et al., 2008) contexts. In the study conducted by Keyes et al. (2008), also with a group of Setswana-speaking African participants, 12.2% of participants were languishing, 67.8% were moderately mentally healthy, and only 20% were flourishing. The fact that most of his participants were unschooled and many came from rural areas might explain part of the differences found between the sample groups (Keyes et al., 2008). Keyes (2005) had similar results in an US sample where the percentage of participants that were flourishing (18%) was not as high. It therefore seems that, in spite of this cohort of participants' experience of signs and symptoms indicative of psychological distress, they are able to maintain a level of mental health that is comparable to or even better than what was found in both international and local studies.

Although these results may be a true reflection of the group's psychological distress and mental health, the possibility also exists that the African group's higher self-reported stress and well-being levels is a resemblance of the more collectivistic cultural orientation of the African group, which would make them more prone to respond in a manner they deem socially acceptable. Substantiated by participants' high scores on the Agreeableness subscale,

it is therefore possible that these individuals were prone to acquiesce when completing the MHC-SF and the GHQ-28 because of their cultural heritage. Perceptions and the importance of an individual's mental health have indeed been found to be affected by culture and factors such as social norms (Diener, Oishi & Lucas, 2003). People in different cultures may compare themselves against different standards (Heine, Lehman, Peng & Greenholtz, 2002). This poses a real challenge to cross-cultural comparisons, and one that the researchers remained cognisant of in their interpretation of data regarding the relationship between personality and general- as well as mental health.

The second set of aims of this particular study was focused on the relationship between personality and the general and mental health of participants. Previous research by Rantanen, Pulkkinen and Kinunen (2005) in this regard found that Neuroticism, Agreeableness and Openness to Experience can predict the experience of psychological distress within a working environment. Our results suggest that Neuroticism has a strong positive correlation with all the facets of possible psychopathology measured by the GHQ-28. This positive correlation is in line with what Rantanen et al. (2005) found with regard to Neuroticism, and its association with mental health. Our finding that Conscientiousness had significant negative correlations with the GHQ-28 is also in line with that of Lapate et al. (2012), who found that conscientiousness is inversely associated with general negative affect.

Albuquerque et al. (2012) on the other hand indicate the predictive value that Neuroticism, Extraversion and Conscientiousness may have on subjective well-being's positive and negative affect facets. Our finding was that the traits of the BTI-Short correlated strongly with the facets on the MHC-SF. With some exceptions, Neuroticism correlated negatively, and Extraversion, Openness to Experience, Agreeableness and Conscientiousness correlated positively with mental health facets at the 1% level of significance.

Results from the subsequent process of structural equation modelling highlighted two of the Big Five personality traits as significant predictors of general and mental health. More specifically, Neuroticism was identified as an important positive predictor of the signs and symptoms of possible psychopathology, and a negative predictor of mental health, as shown in the reduced structural model (Figure 2). On the other hand, Extraversion was revealed as a significant positive predictor of participants' mental health. This appears to confirm findings in other cultural contexts that extraversion is the most important predictor of happiness or subjective well-being (Diener, et al., 2003; Lu & Shih, 1997). In general, the results of this study do seem to support the hypothesis that personality traits have, within this group of Black African teachers, a strong association with both their general and mental health. It is important to note that, although SEM analysis highlighted Neuroticism and Extraversion as the most significant predictors of both general and mental health, it cannot be assumed that the remaining personality constructs are unimportant. As indicated in Table 2, Extraversion showed significant positive correlations with Openness to Experience, Conscientiousness and Agreeableness. Due to the strong inter-correlation between these personality dimensions, Extraversion as it appears in the reduced structural model should not be seen in isolation, but should be interpreted as representing the collective contribution of the other personality dimensions. This is especially important given that the other personality traits (Openness to change, Conscientiousness and Agreeableness) also showed statistically significant correlations with all the subscales of the MHC-SF. Our results do seem to indicate, however, that these traits do not have a unique contribution over and above that of extraversion in the reduced structural equation model (Figure 2). These results are in line with Diener, et al. (2003), who found that Extraversion and Neuroticism were the strongest predictors of well-being in most theoretical and empirical research regarding personality and well-being across

different cultures. Albuquerque et al. (2011) found similar results among teachers in a Portuguese setting.

Conclusion

This study revealed a strong association between the Big Five personality traits, and the general and mental health status of a group of black African teachers within the South African context. The teachers in this sample did indeed experience high levels of distress, but they also reported high levels of mental health. Further findings suggest that personality traits do correlate with both general and mental health of the teachers. Among these teachers, Neuroticism and Extraversion especially can help predict the development of symptomology and their experience of their mental health. These results show the necessity to understand the processes that influence both the pathology and the mental health of individuals. The strong association found between this cohort of teachers' personality functioning and their general and mental health contributes toward an understanding of the processes that underlie the distress and mental health of teachers, and could play an important role in future attempts toward health promotion.

Limitations and Recommendations

A limitation of this study is that demographic statistics of this group of participants consisted of different ages and genders, and that they were mainly urban African participants. These demographics of age and culture could also have an influence on the dynamics between personality dimensions, general health and mental health. These effects should be investigated further in future studies. With regard to culture, future research could focus on cross-cultural as well as intra-cultural comparison in order to elucidate the differences regarding personality dimension, general- and mental health within groups and between groups. It is therefore recommended that the study be performed on more populations from different races and cultural heritages within South Africa to increase generalizability. A

further limitation is that the measurements for the study consisted exclusively of self-report questionnaires. The way in which the participants responded could have had an influence on the results. The possibility also exists that they were answering what they thought the researchers wanted to hear. This could be a possible explanation of the extreme scores obtained on nearly all the measures.

Addenda

Table 1

Descriptive statistics of the study population and the results of the t-test for the difference between genders

	Total group (n =200)		Men (n = 101)		Women (n = 99)		t-tests		
	M	SD	M	SD	M	SD	p	d	α
Age in years	44.28	8.01	43.18	8.05	45.39	7.86	0.05	0.28	
N	32.41	9.67	32.09	9.56	32.74	9.83	0.64	0.07	0.86
E	43.03	7.57	43.31	7.17	42.75	7.99	0.60	0.07	0.78
O	45.04	7.20	45.14	6.73	44.93	7.69	0.84	0.03	0.84
C	44.86	8.16	44.54	7.82	45.19	8.53	0.57	0.08	0.88
A	53.08	6.15	51.63	6.95	54.56	4.82	0.00	0.42*	0.81
MHC_EWB	10.14	3.01	10.45	2.64	9.82	3.33	0.14	0.19	0.83
MHC_SWB	14.91	5.32	15.34	5.41	14.48	5.41	0.26	0.16	0.80
MHC_PWB	23.24	4.99	23.15	4.73	23.33	5.26	0.80	0.03	0.84
MHC_TOT	48.30	10.94	48.93	10.34	47.65	11.54	0.41	0.11	0.72
GHQ_SS	2.51	2.17	2.37	1.99	2.65	2.34	0.35	0.12	0.78
GHQ_AS	2.63	2.43	2.37	2.32	2.89	2.52	0.13	0.21*	0.85
GHQ_SD	2.01	2.12	1.81	2.11	2.21	2.11	0.18	0.19	0.80
GHQ_DS	1.11	1.86	0.86	1.51	1.36	2.14	0.06	0.24*	0.83
GHQ_T	8.26	6.50	7.41	6.29	9.13	6.62	0.06	0.26*	0.75

*d \geq 0.2 (small); **d \geq 0.5 (medium); ***d \geq 0.8 (large)

Note: SD = standard deviation, M = Mean, α = Cronbach alpha coefficient; d= Effect size indicated as Cohen's d-value, N = Basic Trait Inventory-Short Neuroticism, E = Basic Trait Inventory-Short Extraversion, O = Basic Trait Inventory-Short Openness to Experience, C = Basic Trait Inventory-Short Conscientiousness, A = Basic Trait Inventory-Short Agreeableness, MHC_EWB = Mental Health Continuum – Emotional Well-being subscale, MHC_SWB = Mental Health Continuum – Social Well-being subscale, MHC_PWB = Mental Health Continuum – Psychological Well-being subscale, MHC= Mental Health Continuum - Total Scale Score, GHQ_SS = General Health Questionnaire Somatic Symptoms; GHQ_AS = GHQ Anxiety and Insomnia; GHQ_SD = GHQ Social Dysfunction; GHQ_DS = GHQ Severe Depression; GHQ_T = GHQ Total.

Table 2

Pearson correlation coefficients

		General Health Questionnaire - 28										Basic Trait Inventory -Short				
		Mental Health Continuum										Short Form				
		EWB	SWB	PWB	TOT	SS	AS	SD	DS	TOT	Age	N	E	O	C	A
<i>N</i>		-.33**	-.11	-.25**	-.26**	.25**	.46**	.25**	.43**	.47**	.05	1.00				
<i>E</i>		.19**	.36**	.36**	.39**	-.13	-.03	-.13	.01	-.10	-.05	-.06	1.00			
<i>O</i>		.25**	.36**	.34**	.40**	-.12	-.06	-.11	-.01	-.11	-.14*	-.01	.48**	1.00		
<i>C</i>		.20**	.35**	.42**	.43**	-.15*	-.23**	.27**	-.08	-.24**	-.08	-.2**	.41**	.52**	1.00	
<i>A</i>		.12	.23**	.26**	.26**	.03	.01	-.06	-.05	-.01	-.08	-.09	.33**	.49**	.34**	1.00

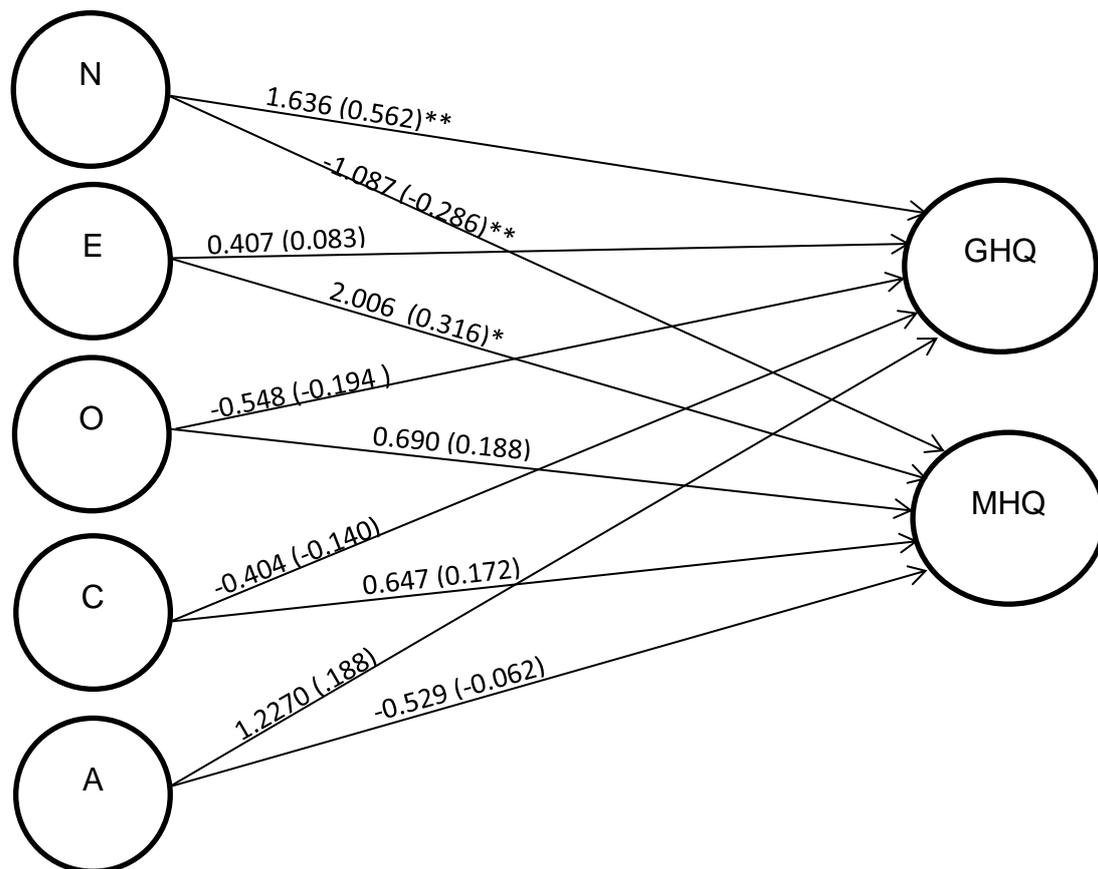
** . Correlation is significant at the 0.01 level (2-tailed).

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

Note: SD = standard deviation, , MHC_EWB = Mental Health Continuum – Emotional Well-being subscale, MHC_SWB = Mental Health Continuum – Social Well-being subscale, MHC_PWB = Mental Health Continuum – Psychological Well-being subscale, MHC= Mental Health Continuum - Total Scale Score, GHQ_SS = General Health Questionnaire Somatic Symptoms; GHQ_AS = GHQ Anxiety and Insomnia; GHQ_SD = GHQ Social Dysfunction; GHQ_DS = GHQ Severe Depression; GHQ_T = GHQ Total; N= Neuroticism; E = Extraversion; O = Openness of Experience; C = Conscientiousness; A = Agreeableness

Figure 1:

Structural Equation Model with standardised regression weights.



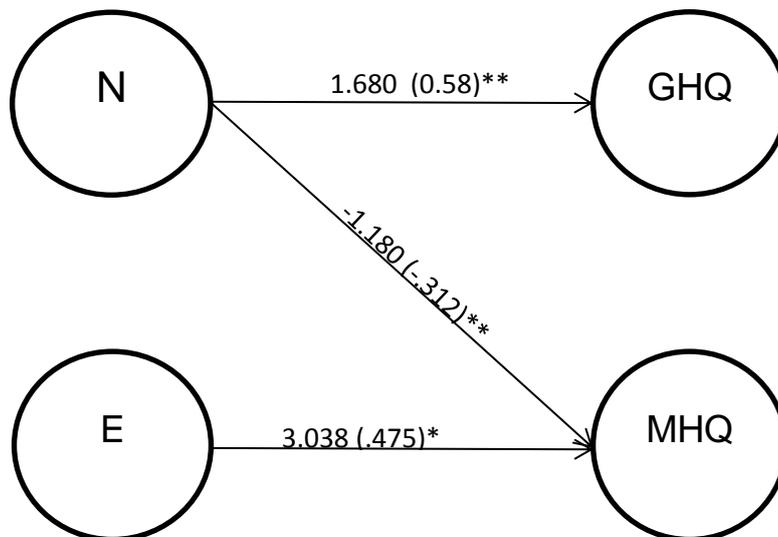
** . Estimate is significant at the 0.01 level (2-tailed); * . Estimate is significant at the 0.05 level (2-tailed).

Note: N = Neuroticism; E = Extraversion; O = Openness to Experience; C = Conscientiousness; A = Agreeableness; GHQ = General Health

Questionnaire; MHQ = Mental Health Continuum

Figure 2

Reduced Structural Equation Model (SEM) with standardised regression weights.



** . Estimate is significant at the 0.01 level (2-tailed);

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

Note: N = Neuroticism; E = Extraversion; O = Openness to Experience; C = Conscientiousness; A = Agreeableness; GHQ = General Health Questionnaire; MHQ = Mental Health Continuum

Table 3*Fit indices of the SEM models*

Model	CMIN	CFI	RMSEA
Structured Equation Model (Figure 1)	1.803	0.730	0.064
Reduced Structured Equation Model (Figure 2)	1.847	0.789	0.065

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