Psychological well-being, race and school setting: A comparative study among South African teachers in the SABPA study

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Dissertation (article format) submitted in partial fulfilment of the requirements for the degree *Magister Scientiae in Research Psychology* at the Potchefstroom Campus of the North-West University

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Acknowledgements

"Every day we have is one more than we deserve"

- Prof Itumeleng Khumalo, my supervisor. My sincere gratitude goes out to him who never gave up on me. I really appreciate his continuous support, guidance, patience and motivation. I am so honoured to have had such a remarkable supervisor. *I have gained so much knowledge from you.*

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- My extended family, they are my inspiration

- My loving husband, Almero: *You make my world a better place*. I am grateful for your understanding, support and most of all unconditional love, especially throughout my academic journeys and *I promise that this is my final academic destination.*

- My children and granddaughter, they are the wind beneath my wings and the reason for my perseverance

"Wat is die mens dan dat U hom gedenk het,

die mensekind wat U so ryk beskenk het!

Met eer en heerlikheid is hy gekroon,

skaars minder as die eng'le om u troon"

(Totius)

Summary

Psychological well-being, race and school setting: A comparative study among South African teachers in the SABPA study

Keywords: Fortitude; Mental health; Race; School; Teacher stress; Well-being

Teaching is a stressful occupation. Teacher stress can be described as the experiences by teachers of psychological distress such as anxiety, depression and nervousness and languishing, resulting from aspects of their workload and school setting. Stress manifests itself in various ways including psychological, emotional, and social changes. Teachers demonstrate individual discrepancies in their responses to stressors. South Africa is as a multicultural environment with previously segregated school settings based on race. Research revealed that it is possible that the functionality of schools, usually related to school setting, has implications for the psychological well-being of teachers.

As comparative study between group White teacher-Black teacher data are limited, this study analysed aspects of psychological well-being to show that race, associated with school setting, can be pervasive determinate of positive mental health. The current study, which is a secondary analysis of the Sympathetic Activity and Ambulatory Blood Pressure in Africans (SABPA) 2008-2009 data, aimed at explaining the similarities and differences by identifying aspects most likely to influence psychological well-being between a White teacher group and a Black teacher group in the North West Province in South Africa.

One research question was formulated to reach the purpose of the research and is: How does the psychological well-being of Black and White teachers in different school settings in the North West Province in the South African context compare? A sample consisting of White (208) and Black (200) teachers completed the Mental Health Continuum – Short Form (MHC-SF;

Keyes, 2002) to measure positive mental health: the Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) to measure depression, the Fortitude Questionnaire (FORQ: Pretorius, 1998) to measure social support, and the Teacher Stress Inventory (TSI, Boyle, Borg, Falzon, & Baglioni Jr., 1995) during the SABPA study. Data from various self-reported psychological questionnaires completed by the two teacher groups were included and analysed by means of bivariate correlations of the two teacher groups, t-test comparisons, cross tabulations of categories of positive mental health as well as of depression, and multiple regression.

Significant associations were found for the following: teacher stress related to general resources (TSI), teacher stress related to teaching and classroom management (TSI), positive self-appraisal, social support from family, social support from friends and others (FORQ), emotional well-being, and psychological well-being (MHC), for both the White and Black teacher groups. According to regression analysis, in the White teacher group, 11.9% of total variance in teacher stress was accounted for by depression while positive metal health explained 7% of teacher stress. For the Black teacher group, only 2.4% of the total variance of teacher stress was explained by depression and 0.1% by positive mental health. The conclusion is that all teachers experience stress and depression, but according to these results, the effect of stress on well-being seems to be higher among the White group. Although the Black teachers report higher levels of stress, they flourish.

In closing, from this comparative study, it was recommended that data between resource availability and school setting pertaining to White-Black teacher groups matched by psychological well-being need to be obtained. Much needed consideration should be given to the development of interventions that explore aspects of psychological well-being of teachers in

different school settings. Furthermore, cultural background in the school setting that contributes

towards psychological well-being should be considered and applied to guide interventions in the

North West Province in South Africa.

Opsomming

Psigologiese welstand, ras en skoolomgewing: 'n Vergelykende studie van Suid Afrikaanse onderwysers in die SABPA studie

Sleutelwoorde: Fortitude; Geestesgesondheid, Onderwyserstres, Ras, Skool, Welstand

Onderwys is 'n stresvolle professie. Onderwyserstres kan beskryf word as onderwyserservarings wat psigologiese versteurings soos angs, depressie en senuweeagtigheid, *languishing*, as gevolg van aspekte wat geassosieerd word met werkseise en skoolmilieu insluit. Stres manifesteer op diverse wyses insluitend psigologiese, emosionele en sosiale veranderinge. Individuele teenstrydighede ten opsigte van stres word deur onderwysers vertoon. Suid Afrika word is 'n multi-kulturele omgewing, gekenmerk deur segregasie van skoolmilieu gebaseer op ras. Navorsing het aangedui dat die funksionaliteit van skole, grotendeels gebaseer op die skoolmilieu, etlike implikasies vir die psigologiese welstand van onderwysers inhou.

Vergelykende studies tussen Wit en Swart onderwysers is beperk, gevolglik word met hierdie studie aspekte van psigologiese welstand geanaliseer om te ondersoek of ras en skoolmilieu algemene determinante van positiewe geestesgesondheid kan wees. Hierdie studie, 'n sekondêre data analise van die Sympathetic Activity and Ambulatory Blood Pressure in Africans (SABPA) 2008-2009 data, het ten doel om ooreenskomste en verskille te verhelder wat waarskynlik psigologiese welstand tussen die Wit en Swart onderwysergroepe in die Noordwes provinsie in Suid Afrika kan verduidelik.

Die navorsingsvraag wat geformuleer was om die doelwit van die navorsing te bereik, is: Hoe vergelyk die psigologiese welstand van Wit en Swart onderwysers in verskillende skoolmilieus in die Noordwes provinsie binne die Suid Afrikaanse konteks? 'n Steekproef van Wit (208) en Swart (200) onderwysers het die Mental Health Continuum – Short Form (MHC-

SF; Keyes, 2002) om positiewe geestesgesondheid te meet, die Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) om depressie te meet, die Fortitude Questionnaire (FORQ) (Pretorius, 1998) om sosiale ondersteuning te meet, en die Teacher Stress Inventory (TSI, Boyle, Borg, Falzon, & Baglioni Jr., 1995) gedurende die SABPA studie voltooi. Data verkry van beide die onderwysersgroepe is ingesluit en geanaliseer met behulp van tweeledige korrelasie vir die twee onderwysergroepe, t-toets vergelyking, kruistabellering van kategorieë van positiewe geestesgesondheid en depressie, sowel as meervoudige regressie.

Daar word statistiese verbande aangedui vir die volgende aspekte: stres wat verband hou met algemene hulpbronne (TSI), onderwyserstres aangaande onderrig en klaskamerbestuur (TSI), positiewe selfevaluering, sosiale ondersteuning van familie, sosiale ondersteuning van vriende en andere (FORQ), emosionele welstand en psigologiese welstand (MHC) vir beide die Wit en Swart onderwysersgroepe. Volgens die regressie analise dui 11.9% van die totale variansie in onderwyserstres op die aanwesigheid van depressie in die Wit onderwysersgroep terwyl positiewe geestesgesondheid 7% van onderwyserstres verduidelik. Vir die Swart onderwysersgroep word slegs 2.4% van die totale variasie van onderwyserstres deur depressie bepaal en 0.1% deur positiewe geestesgesondheid. 'n Finale gevolgtrekking stel dat alle onderwysers stres en depressie ondervind maar volgen die studie se resultate is die effek van stres op geestesgesondheid hoër onder die Wit onderwysersgroep. Alhoewel die Swart onderwysers hoër stresvlakke aandui *flourish* hulle.

Ten slotte word vanuit die vergelykende studie aanbeveel dat data rakend hulpbron beskikbaarheid en skoolmilieu onder Wit-Swart onderwysergroepe verkry word en teen psigologiese geestesgesondheid gemeet word. Ontwikkeling van intervensies wat aspekte van psigologiese welstand van onderwysers ondersoek in andersoortige skoolmilieus moet in

oorweging gebring word. Die kulturele agtergrond wat bydra tot psigologiese welstand binne die

verskillende skoolmilieus moet in aanmerking geneem word gedurende ontwikkeling van

intervensies in die Noordwes provinsie in Suid Afrika.

PREFACE

This dissertation is submitted in article format as described in rules A4.1.1.1.4 as prescribed by the North-West University

The dissertation was send to Turn-it-in and the report was within the norms of acceptability.

The manuscript as well as the reference list has been styled according to the specifications of the Publication Manual (6th edition) of the APA (American Psychological Association) guidelines for the purpose of examination.

The target journal for publication is the SA Journal of Industrial Psychology. Where journal specifications differ from the APA publication guidelines, appropriate amendments will be made before submission for publication.

For the purpose of this dissertation, the page numbering of the dissertation as a whole is consecutive.

The letter of consent from the co-authors in which permission is granted that the manuscript may be submitted for purposes of a dissertation by the first author, I Kok appears on the next page.

Letter of consent

We, the co-author(s), hereby give consent that Illasha Kok may submit the manuscript for the purposes of a dissertation. It may also be submitted for publication.

_____

Prof I. P. Khumalo

Supervisor

_____

Prof J. C. Potgieter

Co-Supervisor

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                    and the University of each author. **The e-mail address, postal and phone number of the
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The manuscript contains five sections, namely the introduction, research design, results, discussion and the references. All these first-level headings appear in bold capital letters and are centered.

INTRODUCTION:

The introductory section normally contains the following seven elements; headings are indicated in [brackets]:

(1) [**Key focus of the study**] A thought-provoking introductory statement on the broad theme or topic of the research (why should I even bother to read further?);

(2) [**Background to the study**] Providing the background or the context to the study (explaining the role of other relevant key variables in this study);

(3) [**Trends from the research literature**] Cite the most important published studies previously conducted on this topic or that has any relevance to this study (provide a high-level synopsis of the research literature on this topic);

(4) [**Research Objectives**] Indicate the most important controversies, gaps and inconsistencies in the literature that will be addressed by this study;

(5) In view of the above (in 4) state the core research problem and specific research objectives that will be addressed in this study;

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(7) [**What will follow**] Provide the reader with an outline of what to expect in the rest of the article.

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The first-level heading is **INTRODUCTION**. However, second-level headings may be used in this introductory section. These subheadings are flush with the margin, and are typed in lower case; bold starting with a capital letter. The INTRODUCTION section consists of an introduction to the article and a literature review.

If lists of bullet points are presented, they should be in the following format:

- *Longevity* . How long individuals live.
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A synthesis and critical evaluation of the literature (not a compilation of citations and references) should at least include or address the following aspects:

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(3) Including a review of existing approaches towards the measurement of relevant constructs; and

(4) A clearly established link exists between formulated hypotheses (or objectives) and theoretical support from the relevant literature. The stated hypotheses follow directly on the section where the literature was reported.

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A brief description of the research approach followed in the study should be included. It should for instance state that the study follows the quantitative tradition and further explain whether it is a cross-sectional field survey, an experiment or a factorial design and why this design was chosen. Furthermore, it should explain what type of data (primary or secondary) was used and which approach (e.g. correlational) was followed in the data analyses. This section is not similar to the description of the research procedure.

Research method (second-level heading)

Normally, at least the following four third-level headings are used to explain the research method followed in the study, namely research participants; measuring instruments; research procedure; and statistical analyses.

Research participants (third-level heading)

A description of the target population, sampling frame and the sampling procedure are provided here. The obtained sample size and response rate are reported. This section normally provides a summary table and a discussion of the research participants in terms of their biographical details such as age, gender, home language, highest academic qualification, etc.

Measuring instrument(s) (third-level heading)

This section describes the measuring instrument(s) used in the study or the way in which constructs were operationalised. Fourth-level headings are in italics, underlined, and end with a full-stop. These types of headings are directly followed (in the same line) by a sentence (the same as with bullets above). Besides clearly referencing

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Secondly, an overview of the inferential statistics according to all stated hypotheses is provided.

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- restate the main objective of the study;
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- provide explanations for unexpected results;
- provide the conclusions and recommendations (implications for practice);
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References begin on a separate page. References cited in the text should all be included in the list at the end of the paper. Full references at the end of the paper, arranged alphabetically by surname, chronologically within each name, with suffixes a, b, c, etc. to the year for more than one per year by the same author. Note that the second and subsequent lines are indented. This journal makes use of the APA reference style. We have an APA style guide which you can be download from the journal website.

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Psychological well-being, race and school setting: A comparative study among South African teachers in the SABPA study

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Abstract

Teacher stress and depression are a serious problem in the teaching profession with obvious implications for teachers' psychological well-being. The aim with this study was to compare psychological well-being and distress between Black and White teachers in different schools in the North West Province of the South Africa. A secondary data analysis of existing data, collected between 2008 and 2009, as part of the multidisciplinary Sympathetic Activity and Ambulatory Blood Pressure in Africans (SABPA) project, was used. White (n=208) and Black (n=200) teachers completed the Teacher Stress Inventory (TSI), Mental Health Continuum – Short Form (MHC-SF), Patient Health Questionnaire (PHQ-9) and the Fortitude Questionnaire (FORQ). Bivariate correlations, t-test comparisons, cross-tabulations and regression analysis were used to compare the two groups. Different patterns of well-being and distress were found between them. Results showed that although both groups displayed similar levels of positive mental health, the Black group reported significantly higher levels of stress and depression. Teacher stress predicted levels of depression and flourishing among the White teachers but not Black teachers. These findings highlight the race-based differences in psychological well-being. Further research to investigate the mechanisms of the race and well-being relationship in the South African school environment is recommended.

Abstract word count = 198

Keywords: Fortitude; Mental health; Race; School; Teacher stress; Well-being

Psychological Well-being, Race and School Setting: A Comparative Study among South African

Teachers in the SABPA Study

Research interest on well-being in the workplace has been growing in the last decade (Rathunde, 2001; Rothmann, 2013). Psychological well-being is increasingly recognized as an important health outcome in several professions including education (Jackson, Rothmann, & Van de Vijver, 2006; Mashele, Van Rooyen, Malan, & Potgieter, 2010; Rothmann, 2013). Recent research shows a strong association between teacher stress and well-being (Vazi, Ruiter, van den Borne, Martin, Dumont, & Reddy, 2013). At the same time, stress is part of everyday life and excessive stress has been linked to impaired functioning in the workplace which additionally put pressure on individuals' meaningful relationships with family, friends, and others which can impact of psychological health (Casey, 2011). Therefore social support, psychological well-being and psychological distress are important to our understanding of health (see World Health Organisation, 1948).

Psychological well-being

Well-being is a multi-dimensional construct often presented with diverse conceptual frameworks and an array of operational definitions (Henderson & Knight, 2012; Ong & Zautra, 2009). At a broad level, two conceptual traditions have dominated our understanding of well-being: hedonic and eudaimonic well-being perspectives. The extent to which people feel good and contened with life, referred to as hedonia, and is reflected in studies on subjective well-being (Diener, 1984, 2000; Diener, Inglehart, & Tay, 2013). Eudaimonia on the other hand explains well-being in terms of the extent to which happiness is derived from the expression of amongst others, human potential, optimal functioning and positive relationships (Ryan & Deci, 2001;

Waterman, 2008) and is reflected in social (Keyes, 1998) and psychological (Ryff, 1989) well-being among other.

Recently there has been greater recognition of integrative models which consider the overlap between hedonic and eudaimonic well-being and the hierarchical organisation of well-being and/or its multi-faceted nature (Kashdan, Biswas-Diener, & King, 2008; Wissing & Temane, 2008; Wong, 2011). Research reveals that the different components of well-being successfully integrate into a categorised structure of well-being that maintains the theoretical differences between hedonic, eudaimonic and social dimensions of well-being (Gallager, Lopez, & Preacher, 2009). In fact Kashdan et al. (2008) strongly warn against the tradition of distinguishing hedonic and eudaimonic well-being dimensions while arguing for the dimensions' qualitative coexistence and integration.

Keyes' Mental Health Continuum model (Keyes, 2002, 2013; Keyes, Wissing, Potgieter, Temane, Kruger, & Van Rooy, 2008) is a prime example of an integrated multi-faceted framework for understanding well-being. Within this model, Keyes (2002, 2013) refers to the positive end of the well-being spectrum as positive mental health (see Joshanloo, Wissing, Khumalo, & Lamers, 2013). Positive mental health is conceptualized by a combination of hedonic (emotional well-being) and eudaimonic (social and psychological well-being) dimensions. Individuals who concurrently have high levels in the mentioned dimensions are described as flourishing. Hence, individuals with low levels of emotional, social and psychological well-being and who have no mental illness, are described as languishing (Keyes, 2005, 2009). Mental illness and well-being are not the opposite ends of a single continuum but fit into the multilateral model of well-being as developed by Keyes (2002, 2005) where emotional

well-being indicates states of positive feeling while psychological and social well-being, in turn indicate positive functioning.

This model of positive mental health has been applied by Rothmann (2013) in the workplace. Both Keyes (2005) and Rothmann (2013) found better work-related outcomes among those who were flourishing. Positive mental health is therefore associated with better general and work functioning, with those individuals who are flourishing reporting lower absenteeism from work, high morale, job satisfaction, and other indicators (Keyes, 2002). Influenced by the thinking that individual well-being is embedded in and supported by his/her relational and social support, fortitude became an important component of teacher well-being. Fortitude is a psychosocial construct introduced by Pretorius (1998) as the strength to manage stress and stay well. It is derived from a positive appraisal of the self, the family and support from others, and thus it is the orientation to cope through social support. According to Pretorius (1998), it answers the question: "what enables people to manage stress and stay healthy?".

Teacher stress

Within the teaching context, several studies have linked psychological well-being of teachers to levels of stress they experience in their places of work (e.g. Bauer et al., 2007; Bell, Rajendran, & Theiler, 2012; Kayastha, Krisnamurthy, & Ashikary, 2012). The teaching profession is considered to be a highly stressful occupation (Ndhlovo, 2012; Ritvanen, Louhevaara, Pertti, Väisänen, & Hänninen, 2006; Samad, Hashim, Moin, & Abdullah, 2010). The enormous stress and high work demands experienced by teachers have been found to impact negatively on their psychological well-being (Kittel & Leynen, 2003). Stress manifests itself in various ways including physiological, psychological, emotional, and social changes (De Beer, Mentz, & Van der Walt, 2007; George, Louw, & Badenhorst, 2008). A number of the

circumstances that determine the way stress is manifested are beyond the teachers' control and consequently require constant alertness.

School context: Source of work-related stress

Job demands are one of the most pervasive causes of psychological distress in teachers (Haberman, 2005). Kyriacou (2001) is of the opinion that teacher stress in the workplace is mainly driven by factors related to the school settings. Two South African studies (Motseke, 1998; Olivier & Venter, 2003) report occupational stressors associated with teacher stress in two different settings. Motseke (1998) found that among teachers teaching in township schools in the Free State emotional, social, psychological and environmental factors mainly contributed to their stress levels. In the George area, Western Cape, South Africa where 20% of the teachers were found to experience considerable stress, it was associated with learners' discipline and motivation, time-constraints, professional distress and large classes (Olivier & Venter, 2003). It also appears from the Motseke (1998) and Olivier and Venter (2003) studies that the patterns of psychological distress manifestation may be different among South African teachers teaching at different areas. Jackson et al. (2006) have also found evidence that the levels of stress reported by teachers are strongly associated with their work circumstances.

In addition to the fact that teachers in South Africa are constantly challenged to cope effectively under unstable and changing teaching conditions, the historical legacy of apartheid is still reflected in the reality of two clearly distinguishable school settings: one black and disadvantaged and the other predominantly white and advantaged (Jansen, 2001; Mouton, Louw & Strydom, 2013, Spaull, 2013). In previously mono-cultural schools, the change to multicultural composition of learners put extra strain on the teachers (De Wet & Wolhuter, 2009; Mentz & Van der Walt, 2007). Ngidi and Sibaya (2002) found that, in KwaZulu-Natal for

example, black teachers in particular have to cope with educational changes, management problems, time constrain, discipline problems and working conditions. In a different and non-comparative study, Van Zyl and Pietersen (1999), who conducted research among White teachers found that their sample reported high levels of stress and ascribed it to the school climate. A negative correlation between work-related stress and psychological well-being was reported by Jonas (2001) in a study among black teachers.

The World Economic Forum (2002) observed variations in the quality of schools in South Africa. The Department of Education acknowledges the diversity of the vast expanse of schools in South Africa, ranging from rural to urban, and across different levels of socio-economic status (Department of Education, 2008). Subsequently they partly attribute such discrepancies in the schools to what they refer to as "the legacy of the past" (Department of Education, 2008, p.1). The discrepancies are witnessed in the resourcefulness and level of development of the school. Ndhlovo (2012) emphasises that the problems regarding unequal distribution of resources are still intact in South African schools. The presence and absence of resources like sophisticated technology, libraries, extra mural and sporting facilities, number of classrooms, running water or electricity are indicative of the difference in school contexts (Department of Education, 2008). With reference to such differences in context there is inevitably a difference in the way teachers work, cope and maintain their well-being. Consequently, high job demands are placed on teachers at grassroots level (Maarman, 2009; Montgomery, Mostert, & Jackson, 2005; Olivier & Venter, 2003). It is possible that the dichotomous school setting has tangible implications for the psychological well-being of teachers in different schools.

Race

Previous empirical research has yielded different results regarding levels and profile of well-being as experienced by white and black respondents (e.g. Keyes, 2009; Van der Westhuizen, De Beer, & Bekwa, 2013; Wissing & Temane, 2008). Evidently, race as a socially constructed representation of identity would play a role in profiles of well-being and distress (Jackson, Knight, & Rafferty, 2010; Omi & Winant, 1994). Similarly, the social construction of race refers to the processes by which people negotiate their identities and related interests in an environment where resources are assumed to be scarce. There are different pathways, either as moderators or mediators such as socio-economic status and genetic predisposition that may account for the influence of race as a demographic variable on well-being of people (Jackson, et al, 2010).

A study by Keyes (2007, 2009) based on the Midlife in the United States (MIDUS) study revealed black-white differences on flourishing. These findings that showed black respondents scoring higher than their white counterparts on positive mental health supported the so called Black-White paradox. This result was retained even after controlling for educational attainment and household income. Keyes (2009) went on to consider the socio-demographic characteristic and social identity of race as a risk factor exposing black people to social inequality and exposure to discrimination. It is on the basis of this argument that the question may be asked if resilience could be accounting for the higher well-being outcome (see Keyes, 2009).

In a South African study, Van der Westhuizen et al. (2013) investigated the role of gender and race in sense of coherence and hope as indices of well-being. Regarding race, they found that their black respondents consistently scored significantly higher than the white respondents in both indices. When Wissing and Temane (2008) found differences between the two groups in the profile and structure of general psychological well-being, they ascribed the

difference to individualism-collectivism divide (see Allik & McCrae, 2004). In Wissing and Temane's study, two unique factors were identified differentiating the two groups: for the white respondents the unique factor was self-efficacy/behavioural readiness, and for the black group it was social satisfaction. Other socio-cultural dynamics could also account for these differences.

Context and aim of the present study

The present study took place within the SABPA project which provided a comprehensive data set for the investigation of psychological well-being among teachers in the North West Province of South Africa. The main contribution of this study is a closer examination and understanding of differences in psychological well-being of Black and White teachers in different school settings in the South African context. In addition, the study is a catalyst for future exploration of contextual factors that drive these differences and the dynamic relationships between the variables, and for the investigation of measurement invariance or equivalence of well-being and stress between Black and White South African respondents. The identification of these aspects will enable schools to undertake actions to improve teachers' psychological well-being. Therefore this study is driven by the research question: How does the psychological well-being of Black and White teachers in different school settings in the North West Province in the South African context compare?

Method

Participants. Participants for this study were recruited as part of the Sympathetic Activity and Ambulatory Blood Pressure in Africans (SABPA) study as described above. For the purpose of this study, 200 Black and 208 White urbanized male and female secondary school teachers from the Dr Kenneth Kaunda District in North West Province, with an age range of 25 to 62 years (mean = 45 years; SD=9.57), participated. The sample consisted of 201 male and 207

female teachers. Inclusion criteria were that secondary school teachers would be from governmental organizations in the North West Province and would be apparently healthy. In addition to this, the following exclusion criteria were applied in order to ensure the validity of physiological measures: 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 three months prior to data collection (Mashele et al., 2010).

Design. This study involved secondary analysis of quantitative data collected as part of the SABPA project in 2008-2009. The data were collected in a cross-sectional survey by means of self-report questionnaires. The basic core of secondary data analysis was the (re-)analysis on an earlier collected dataset. This analysis was appropriated to investigate patterns and correlations not addressed or reported in the original study (Smith, 2008).

Procedure and context of the study. The study formed part of the SABPA project conducted within AUTHeR (Africa Unit for Transdisciplinary Health Research). SABPA's overarching purpose was to investigate the markers of bio-psycho-social health in African (Black and White) urbanised teachers. This multidisciplinary population comparative project had a longitudinal design and was conducted from January 2008 to November 2012. It involved a total of 408 teachers of whom 200 were Black and 208 were White. Baseline data collected from February to May 2008 (Black participants) and the same period in 2009 (White participants) were used in this study.

During the period of data collection, 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 were 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 went to bed at approximately 22h00. 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 which was followed by a workshop on stress management.

Measures. A booklet format battery of measuring instruments, presented to the participants in English, was used for the purposes of this study. The measuring instruments used were: Mental Health Continuum-SF (MHC-SF; Keyes, 2002; Keyes et al., 2008), The Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001), Fortitude Questionnaire (FORQ; Pretorius, 1998), Teachers Stress Inventory (TSI; Boyle, Borg, Falzon, & Baglioni Jr., 1995).

Mental Health Continuum-SF (MHC-SF; Keyes, 2002; Keyes et al., 2008). The MHC-SF is a 14 item self-report measure of positive mental health which places individuals' level of well-being along a continuum from languishing to flourishing. The three subscales: emotional well-being (three items), social well-being (five items) and psychological well-being (six items) constitute a multilateral model of well-being. Emotional well-being (EWB) is defined in terms of an individual's subjective well-being, including satisfaction with life, positive and negative affect. Social well-being (SWB) measure issues related to social integration, social contribution, social coherence, social actualization, and social acceptance. The level of self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and

autonomy experienced by an individual is included in the Psychological well-being (PWB) subscale.

The frequency of emotional, psychological and social well-being during the previous month is rated on a six point Likert scale (0=never, and 5=every day). Good reliability (Cronbach's alpha of .74), and construct and criterion-related validity have been reported by Keyes et al. (2008) in a South African sample.

The Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001). The PHQ-9 is a nine item self-report measure of depression. Its item content is a good reflection of the DSM-IV-TR diagnostic criteria for a depression episode. The responses to the frequency of participants' experience of the symptoms of depression vary along a four-point Likert rating scale (0=not at all and 3=nearly every day). The score obtained from the measure gives information on the degree or severity of the depressive symptoms, ranging from none to severe depression. Kroenke et al. (2001) found a Cronbach's alpha of .89. In a South African sample, Khumalo, Temane and Wissing (2010) reported a Cronbach's alpha of .81.

Fortitude Questionnaire (FORQ; Pretorius, 1998). The FORQ is a 20-item self-report questionnaire that measures the positive appraisal of the self, support from family, and support from friends and others. A four point Likert rating scale ranging from 1 (does not apply) to 4 (applies very strongly) is used to measure the participants ability to manage stress on the basis of positive appraisal of social support as received from self (seven items), family members (seven items), friends and others (six items). Pretorius (1998) reported the reliability of the scale among a South African student group as a Cronbach's alpha of .85. A reliability index of .81 was reported among a Setswana-speaking sample (Khumalo, Temane, & Wissing, 2012).

Teachers Stress Inventory (TSI; Boyle et al., 1995). The TSI is a 20 item self-report measuring instrument that requires respondents to indicate the degree to which they experience a range of events that act as sources of stress. It therefore assesses the teacher's judgements about job demands posed by possible stressors in the school settings. The TSI is scored on a five point Likert-type response format, ranging from 0 (no stress) to 4 (extreme stress). Five factors were found by Boyle et al. (1995) to constitute sources of teacher stress, including workload, student misbehaviour, poor colleague relations, professional recognition, and time/resource difficulties. The factor structure in this study differs from that of Boyle et al. (1995). This scale was validated for use in a South African context by Boshoff (2011) who found a factor solution of two factors: General circumstance related stress (ten items) and learner related stress (seven items). Boshoff (2011) reported acceptable reliability and validity indices of the scale among South African teachers. Cronbach's alpha coefficients of .89 and .87 were found.

Ethical Considerations. This study involved secondary analyses of data collected in the SAPBA research project and was granted ethical clearance by the North West University Research Ethics Committee and awarded the number NWU-00036-07-S6. Prof L. Malan is the Primary Investigator and Prof J. C. Potgieter is the Psychology coordinator in the SABPA project. Ethical principles guiding psychologists (HPCSA) in conducting research and collecting data were observed and followed throughout the research process. First, during recruitment and before data collection all participants were comprehensively informed of the objectives and procedures of the study. They were given the opportunity to ask questions. This process allowed for the establishment of rapport between the researchers and participants, and for the participants to give informed consent. Participants were also informed of their choice to discontinue participation at any point during the process, and no one was coerced into (continued)

participation. Confidentiality was assured to the participants, and data have since been treated as such through secure data storage. All psychological data were gathered by psychology post-graduate students, under the supervision of registered psychologists. The questionnaires from which data were captured are stored in a secured environment at the North-West University. During secondary analysis the researcher maintained the integrity of the dataset and acknowledged the efforts of collaborators in the SABPA study.

Data Analysis. The analysis was aimed at answering the main question: How does the psychological well-being of Black and White teachers in different school settings in the North West Province in the South African context compare? This was achieved through the reporting of descriptive statistics and followed by comparison of group means by way of t-test statistics. The mean scores and their standard deviation values at subscale and scale levels for the TSI, MHC-SF, FORQ and PHQ-9 were reported. All the mentioned descriptive statistics were reported for each group separately. Cross-tabulations, also known as contingency tables, were reported as a way of describing the two groups in terms of the proportional distribution of high and low scores on the measured constructs. Inter-scale correlations between pairs of the measured constructs were reported to examine bidirectional relationships between them. All data analyses were performed in IBM-SPSS, version 20.

After this preliminary exploration of the data, the research question was explored. In the first instance, the White and Black groups' mean scores on stress (TSI), positive mental health (MHC-SF), social support (FORQ) and depression (PHQ-9) were compared. Differences were determined on the basis of statistical significance. Simple linear regression equations were drawn with stress as independent variable and positive mental health and depression as dependent variables. The extent to which stress influences and explains the variance in positive mental

health and depression was determined in each group and compared. In this regard, coefficients of determination (R^2) and their significance for the total models and the individual standardised regression coefficients (β) values for each regression equation were reported.

Results

In Table 1 the positive mental health of White and Black teachers are presented using cross tabulations. There seems to be a similar general trend with both groups for the number of participants in the three categories of positive mental health. Flourishing was reported by 52% of the White group, and 55% of the Black group, while 1% of White teachers indicated languishing compared to 2% of the Black teachers.

< Insert Table 1 approximately here >

Table 2 shows the categories of depression as indicated by the two groups. More than double the number of participants from the Black teacher group (19%) in comparison to the White teacher group (8%) reported being depressed.

< Insert Table 2 approximately here >

Table 3 reports mean score comparisons between White and Black teacher groups for stress, social support, mental health and depression. Statistically significant differences in teacher stress levels between the two groups were found. The Black teacher group reported higher levels of stress indicated by teacher stress associated with general resources $t(393)=9.24$, $p=.000$, and teaching and class management $t(391)=5.44$, $p=.000$.

In terms of social support a significant difference was reported between the White and Black teacher groups. The White group reported higher levels of support from friends and others

t(406)=-8.43, p=.000. However no significant group differences were fond for support from

family t(406)=-1.87, p=.063, and positive self-appraisal t(406) =.66, p=.510.

Two dimensions of mental health, namely emotional well-being and social well-being

indicated significant differences between the two groups of teachers. The White teacher group's

emotional well-being was higher, t(406)=-5.69, p=.000. Inversely, social well-being was higher

for the Black teacher group, t(406)=2.27, p=.024. However, psychological well-being showed no

significant difference, t(406)=1.77, p=.078. When comparing the mean scores for depression, a

significant difference was obtained, with the Black teachers reporting higher levels of depression

t(406)=7.16, p=.000.

< Insert Table 3 approximately here >

Bivariate correlation coefficients indicating relationships between the measured

constructs are reported in Table 4 for the White teachers. As anticipated, depression showed

significant positive relationships with the teacher stress related to resources (r=.304) and teacher

stress related to teaching and class management (r=.341). Also, depression shows strong

significant negative correlations with all the subscales of social support and positive mental

health with values of -.291 ranging to -.560. Additionally, a significant positive pattern was

observed for social support and positive mental health with effect sizes ranging from .300 to

.591. A significant negative correlation between the sub-scales of teacher stress and those of

positive mental health were found for the sample of White teachers. The values of correlation

coefficients between the subscales ranged from -.147 to -.277. Furthermore, a non-significant

positive correlation was found between social support from family and teacher stress related to

general resources (r=.021) whereas, positive self-appraisal had a significant negative correlation

with teacher stress related to teaching and class management (r=-.247). The values of correlation

coefficients ranged from -.009 to -.247 for the subscales of social support and subscales of teacher stress.

<center>< Insert Table 4 approximately here ></center>

Bivariate correlations between measured constructs are reported in Table 5 for the Black teacher group. As expected, depression showed significant positive correlation with teacher stress related to resources (r=.166) and teacher stress related to teaching and class management (r=.153). Furthermore, negative significant correlations were found between depression and positive self-appraisal (r=.232), emotional well-being (r=-.425) and psychological well-being (r=-.222). On the contrary, no significant correlations were found between depression and social support from family (r=.009), social support from friends and others (r=-.031). As expected, depression was correlated negatively with social well-being (r=-.100) for the Black teacher group. Moreover, the three subscales of positive mental health of Black teachers and all three subscales of social support had significant positive correlations ranging between .148 and .462. For the Black teacher group no significant correlations were found between the three subscales of mental health and the two subscales of teacher stress. Social support from friends and others had no significant correlation with teachers stress related to resources (r=.079), as opposed to social support from friends and others which significantly positively correlated to stress related to class and management (r=.132). Significant positive correlations were observed between social support from family and the two subscales of teacher stress. Both the values of the correlation coefficients were .205. In addition, positive self-appraisal had no significant correlations with teacher stress related to resources (r=.080) and teacher stress related to teaching and class management (r=.073).

<center>< Insert Table 5 approximately here ></center>

Regression analyses were conducted to determine if teacher stress (independent variable) predicted positive mental health and depression (dependant variables), and how this differed between the two groups. In Table 6 adjusted R^2 value indicate that 7% of the variance in positive mental health was predicted by teacher stress related to general resources and teacher stress related to teaching and class management(R^2=079; F ratio=8.69). It emerged that 11.9% of the variation in depression was predicted by teacher stress related to general resources and teacher stress related to teaching and class management for the White teacher group (R^2=.128; F ratio=14.90). Both positive mental health and depression reported p-values of .000. Stress significantly predicted positive mental health and depression within the White teacher group.

< Insert Table 6 approximately here >

The same statistical analysis was conducted for the Black teacher group. From Table 7 it emerged that positive mental health (dependant variable) had a beta of -.135 and an adjusted R^2 of -.001 representing 0.1% of the variance explained by teacher stress related to general resources and teacher stress related to teaching and class management. It emerged that 2.4% of the variation in depression was predicted by teacher stress related to general resources and teacher stress related to teaching and class management for the Black teacher group (R^2=.035; F ratio=3.119; p=.047). Both positive mental health and depression reported p-values > than .001. Stress does not significantly predict positive mental health and depression within the Black teacher group.

< Insert Table 7 approximately here >

Discussion

As the study was concerned with the question of "how does the psychological well-being of White and Black teachers in the different school settings compare?" it compared the psychological well-being and distress of the two groups using a variety of constructs. The constructs of positive well-being were positive mental health and fortitude; and depression and teacher stress were indicators of psychological distress. Although, positive mental health and depression were the main outcome variables in the present study, all other constructs were compared. Teacher stress was seen as a determinant variable to predict depression and levels of flourishing. As social support is indicative of well-being, the level of social support was also compared using the Fortitude model (Pretorius, 1998).

From the results, the general finding is that more differences than similarities were found between the two groups. The emerging differences and similarities proved to be complex, and are demonstrated by three observations. In the first place, differences in stress and depression as indices of psychological distress were more pronounced between the two groups, with the Black group suffering more. Secondly, positive well-being indices showed more similarities between the two teachers groups and lastly, different patterns were found in the extent to which stress influences positive mental health and depression. While stress was not a significant predictor of positive mental health and depression in the White group, significant direct effects were found for the Black group. Thus, from the present study, more Black teachers experience depression than White teachers, but flourish to similar levels as the latter. In a different study, Keyes (2009) found that although Black individuals had high rates of depression they flourished as well as, if not better than White community members.

Positive Mental Health comparison. Cross tabulations were used to compare the two groups' categories for positive mental health, namely languishing, moderate mental health and

flourishing, represented in percentages. No real differences were found in the number of people in the three categories between the two groups. The results show that while 52% of the White teachers were flourishing so were 55% of the Black teachers. A similar trend was found for languishing and moderate mental health. With regard to the comparisons on the basis of mean scores, no significant differences for psychological well-being (PWB), but social well-being (SWB) and emotional well-being (EWB) were found to be significantly different. Emotional well-being was higher among the White group, and social well-being was higher among the Black groups. Emotional well-being, a component of subjective well-being presupposes the hedonic dimension (Diener, 2000; Wissing & Temane, 2008). It has been previously found that individualistic cultures rate themselves higher on subjective well-being in comparison to collective cultures in which social well-being are salient (e.g., Diener, Oishi, & Lucas, 2003). This emotional well-being dimension among individualistic White teachers is more of an intra-personal process. This group may be more inclined to depend on themselves as individuals separate from others, therefore participants exhibited largely different pattern in the way they perceived emotional well-being (Wissing, Wissing, du Toit & Temane, 2008). The higher social well-being among the Black group is reminiscent of their more collectivistic cultural orientation.

Depression comparison. Categories of depression, as denoted by whether one is depressed or not, were used to compare the group differences in percentages. The results showed a significantly higher percentage of Black participants (19%) reporting being depressed than their White (8%) counterparts. Previous research has not been conclusive regarding the differences in prevalence of depression among the White and the Black groups. Some studies report higher rates of depression among White individuals, for example Williams, Stein, Herman, Williams and Redmond (2010) who ascribe this finding to social stressors,

socioeconomic aspects, demographic aspects and psychological symptoms of distress among White South African individuals. In contrast, Plant and Sachs-Ericsson (2004) suggest that Black individuals who are confronted with adverse life events are more susceptible to depression than their White counterparts. Likewise, Black teachers in this study reported significantly higher mean scores for both depression and stress, suggesting that they experience more psychological distress. In the teaching profession specific sensitive and work-related situations contribute to depression (Tennant, 2001). South African teachers are continuously confronted with different socio-economic and demographic school challenges; distinguished by a bimodal school system, characterized by functional and dysfunctional schools (Spaull, 2013).

Teacher Stress comparison. Previous research has demonstrated that Black and White teachers from functional and dysfunctional schools alike experience high levels of stress (Milner & Khoza, 2008). Teacher stress refers to work-related aspects that place the physical and psychological well-being of teachers at risk and augment depression and ill-being (Jackson & Rothmann, 2005; Peltzer, Shisana, Zuma, Van Wyk, & Zungu-Dirwayi, 2009). The present study shows that Black teachers report significantly higher levels of stress related to general resources and teaching and class management than their White colleagues. The high score for stress among Black teachers is congruent with previous results by Ngidi and Sibaya (2002) which indicated that Black teachers experienced above average stress, and ascribed it to work-related factors such as working conditions, class and curriculum management problems and leaner misbehaviour. Research finding about the comparison of stress between Black and White teachers are thus inconclusive.

Social support comparison. Fortitude, as define by Pretorius (1998), is the ability to manage stress and strive towards being well utilising social support through positive appraisal

from self, family members, and support from friends and others. Social support is often regarded as a key aspect to the buffering of the experience of teacher stress (Jonas, 2001). The current study found that White participants reported higher mean scores for social support from friends and others than the Black teachers, but no significant differences for self-appraisal and social support from family. This may suggest that the White teachers, more that the Black teachers, do in this study, tend to reach out more to others outside of their homes as defined by family. In addition this may not necessarily indicate a larger social network, but certainly the use of friends and others who may include colleagues as sources of support.

Relationships between constructs. Relationships between scores on the psychological well-being and distress were examined separately for the White and the Back teacher groups. As theoretically expected positive well-being constructs yielded significant positive relationship patterns for both groups. These indices of well-being were positively related to all three sources of social support. Negative well-being and distress constructs, namely stress and depression, were also positively associated with each other. As anticipated, a negative association was evident between negative well-being indices of depression and positive mental health for both groups.

Relationship patterns were found revealing differences between the two groups. The results confirm an inverse association between well-being indices and the measures of teacher stress for the White teachers. Teacher stress and positive mental health were comparable for the Black teacher group.

Additional to relationship patterns already discussed the manner in which social support was associated with other well-being indicators was notably different between the groups. All three social support indicators associated negatively with distress for the White teachers,

however, only positive self-appraisal associated with distress for the Black teachers. The study found no relationship between the three indices of social support and teacher stress related to general resources for the White group, yet these negative well-being indices associated positively with familial social support for the Black group. Positive self-appraisal and support from friends and others yielded negative relationships with teacher stress related to teaching and classroom management for White teachers while amongst Black teachers a positive association existed between two social support indices, namely support from family and support from friends and others and the latter index of teacher stress.

Influence of stress

      Stress and positive mental health. The current study showed that teacher stress was a significant adversarial predictor for all the measures of positive mental health for White teachers, which was expected, given empirical findings showing the negative effect of stress on well-being (Jackson, et al., 2006; Vazi, et al., 2013). Excessive and persistent stress can cause mental ill-being and impact on mental health (Van Bijl & Oosthuizen, 2007).

      A different finding among the sets of variables was observed for the Black teachers, with stress having no predictive influence on positive mental health. Well-being outcomes of Black teachers were positive especially when they adjusted to their work-related stress and job demands (Williams, Yu & Jackson, 1997).

      Stress and depression. Teacher stress was found to be a significant predictor of depression among White teachers, whereas a different pattern was observed for the Black teacher group. Among the Black group stress was not a significant predictor of depression. This is besides the fact that the Black group reported higher levels of stress and depression. George and Lynch (2003) noted that when stress indications are more dominant than depression symptoms

for Black individuals, their White counterparts will be more vulnerable towards stress. Furthermore it is suggested by Williams and Harris-Reid (1999) that Black teachers have access to external supportive resources such as high levels of social well-being that some may argue lessen the effect of stress and depression. A possible difference not discussed in the current study is the difference in buffer systems between groups White and Black. For example in the Black teachers group there are unexpected mediators and moderators that function to protect the levels of well-being against high levels of stress. Social support enhances quality of life and provides a buffer mechanism against negative well-being outcomes among Black individuals (Watkins, 2012).

Theoretical underpinning of findings

Comparing psychological well-being of White and Black teachers in different school settings was the central focus of this study. The context on which the study was based is twofold: race and school setting. The first area of comparison refers to well-being based on teachers' race. Awareness about psychological well-being in the teaching profession is important when taking into account race diversity among teachers. Manifestation, severity and prevalence of positive well-being are affected by race (Takeuchi & Williams, 2003). As ethical-psychological concepts, individualism supposes personal independence with hedonism opposed to collectivism that holds the group and family integrities more important than the individual (Triandis, 2002). It is generally accepted that an African socio-cultural orientation is mainly characterised by collectivism and interdependence (Ryff & Singer, 1989; Wissing & Temane, 2008). Socio-cultural differences along the divide of individualism and collectivism can clarify well-being patterns (Triandis, 2002 & Williams, & Harris-Reid, 1999). Differences in psychological well-being patterns are observed across cultures and socio-economic backgrounds (Temane

&Wissing, 2008). Compared to Whites, Blacks adversely experience social inequality outcomes associated with higher levels of mental health (Williams, & Harris-Reid, 1999). Also, Keyes (2009) clarifies that although Blacks suffer higher rates of mental disorder than Whites, they have better mental health than White individuals.

The second area is comparison of well-being based on school-setting. White and Black teacher in South Africa mostly work under different working conditions in disparate school settings (Taylor, 2007). Working conditions adversely affect teachers' positive mental health and ill-being with high job demands and mental health challenges on intrapersonal, interpersonal and environmental levels experienced by teachers (Myburgh & Poggenpoel, 2002). The dualistic nature of the education system is characterised by a historical school system and socioeconomic divide (Taylor, 2007) which is distinguished as functional and dysfunctional schools (Christie, 1998; Spaull, 2013). In accordance with literature problems experienced at schools are learner performance, discipline, teaching and curriculum management, resource availability, school climate and work related stress (Mawdsley, et al., 2012; Mouton, et al., 2013; Ngidi & Sibaya, 2002; Venter & Olivier, 2003). According to Spaull (2013), many of the dysfunctional schools are racially homogeneous. From research in different settings it has been concluded that those teaching in dysfunctional schools experience high levels of stress and are confronted with many stressful situations (Jonas, 2011; Motseke, 1998; Mouton, et al., 2013; Venter & Olivier, 2003). While the two teacher groups are culturally different, amongst other differences, this comparative study created a space to compare their psychological well-being within these outlined principles.

Limitation

Limitations of this study are acknowledged. Firstly, this is a retrospective analysis of a quantitative secondary data base measuring certain variables that influences psychological well-being of South African teachers. This study could not address general resources and teaching and class management situations in the school setting that influences psychological well-being in White and Black teachers and further studies should include a qualitative element to gather more in-depth information on these sources. The comparisons for this study were determined mainly on the basis of race as a proxy for differences in school characteristics. It could assist the explanation of the interpretation on psychological well-being of teachers. Secondly, it suggests that further comparative studies on teacher psychological well-being be conducted in different provinces and across different race groups. Lastly, the differences between groups of White and Black male and female teachers were not considered. There is some suggestion in the literature that gender influences stress.

Conclusion, implications and recommendations.

New knowledge was obtained about the differences and similarities of psychological well-being among White and Black teachers in the South African population. The results of the current study show that there are significant differences in the psychological well-being in the White and Black teacher groups working in different school settings in the North West Province. Teachers were experiencing differences in stress, depression, emotional well-being along with social support from family and friends and others. Contrary to the Black teacher group, stress acted as a predictor of positive mental health or depression for the White teacher group. Moreover, significant similarities regarding psychological well-being based on race were observed. It is apparent, though that both groups correlated practical significance to work related stress and depression. Positive appraisal of self, emotional well-being, psychological well-being

and depression showed practical significance for both teacher groups. Returning to the main theme of this study, it is revealed that although the group of Black teacher were suffering from stress and depression, they reported similar tendencies towards languishing and flourishing as the White teacher group.

In order to identify whether there are substantive differences in teacher stress, social support, positive mental health and psychological distress symptoms matched by psychological well-being, prospective data between resource availability and school setting pertaining to White-Black teacher groups need to be obtained. The results of this study advance the importance of examining psychological well-being separately in the two teacher groups. Although similarities exist, this study provides modest support for differences between White and Black teachers' sources of psychological well-being and suggests the importance of considering these differences to adequately address psychological well-being in the different school settings. Consciousness of sources related to psychological well-being of teachers in different school settings is required to create a balance between the school setting and psychological well-being of teachers. It is recommended that more consideration should be given to the development of interventions that explore aspects of the psychological well-being of teachers in different school settings. Detailed information about specific characteristics of schools provides a platform to bridge the inequality of resources in the different school settings. Furthermore, cultural background in the school setting which contributes towards psychological well-being should be considered and should guide interventions.

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Table 1

Cross tabulations – categories of positive mental health as measured with the MHC-SF, by race

Variable	Categories of Mental health			Total
Race	F (%)	M (%)	L (%)	
White	109 (52.40%)	95(45.67%)	2 (0.9%)	208
Black	110 (55%)	83(41.5%)	4 (2%)	200

Note: MHC-SF = Mental Health Continuum Short Form; F= Flourishing; M= Moderate mental health;

L= Languishing

Table 2

Cross tabulations – categories of depression as measured with the PHQ-9, by race

Variable	Categories of Depression		Total
Race	Depressed (%)	Not depressed (%)	
White	17 (8.17%)	191 (91.82%)	208
Black	38 (19%)	162 (81%)	200

Note: PHQ-9 = Patient Health Questionnaire

Table 3

T-test comparisons between Black and White teacher groups

Variable	White		Black		t-test comparison			CI 95%	
	Mean	SD	Mean	SD	t-score	df	Sig	Lower	Upper
TS-GR	32.16	8.19	39.21	6.86	9.24	393	.000	5.55	8.56
TS-TC	24.66	6.08	27.77	5.12	5.44	391	.000	1.98	4.23
FORQ-S	21.86	3.28	22.08	3.29	0.66	406	.510	-.43	.85
FORQ-F	21.48	3.96	20.72	4.25	-1.87	406	.063	-1.56	.04
FORQ-O	19.46	3.04	16.66	3.66	-8.43	406	.000	-3.46	-2.15
MHC-EWB	11.64	2.28	10.14	3.01	-5.69	406	.000	-2.02	-.98
MHC-PWB	22.41	4.42	23.24	4.99	1.77	406	.078	-.09	1.74
MHC-SWB	13.78	4.74	14.91	5.32	2.27	406	.024	.15	2.11
PHQ-9	5.68	4.68	9.32	5.55	7.16	405	.000	2.64	4.64

TS-GR = Teacher Stress – General resources; TS-TC = Teacher Stress Teaching and class management; FORQ-S = Fortitude Self; FORQ-F = Fortitude Family; FORQ-O = Fortitude Other; MHC-EWB = Mental Health Continuum Emotional Well-being; MHC-PWB = Mental Health Continuum Psychological Well-being; PHQ-9 = Patient Health Questionnaire

Table 4

Bivariate Pearson correlations for the White teacher group (N=208)

	TS-GR	TS-TC	FORQ-S	FORQ-F	FORQ-O	MHC-EWB	MHC-PWB	MHC-SWB	PHQ-9
TS-GR	1								
TS-TC	.688**	1							
FORQ-S	-.096	-.247**	1						
FORQ-F	.021	-.049	.508**	1					
FORQ-O	-.009	-.183**	.403**	.586**	1				
MHC-EWB	-.271**	-.253**	.483**	.355**	.382**	1			
MHC-PWB	-.147*	-.219**	.591**	.473**	.419**	.598**	1		
MCH-SWB	-.277**	-.211**	.431**	.330**	.300**	.613**	.604**	1	
PHQ-9	.304**	.341**	-.560**	-.322**	-.291**	-.626**	-.409**	-.381**	1

TS-GR = Teacher Stress – General resources; TS-TC = Teacher Stress Teaching and class management; FORQ-S = Fortitude Self; FORQ-F = Fortitude Family; FORQ-O = Fortitude Other; MHC-EWB = Mental Health Continuum Emotional Well-being; MHC-PWB = Mental Health Continuum Psychological Well-being; PHQ-9 = Patient Health Questionnaire

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

Table 5

Bivariate Pearson correlations for the Black teacher group (N=200)

	TS-GR	TS-TC	FORQ-S	FORQ-F	FORQ-O	MHC-EWB	MHC-PWB	MHC-SWB	PHQ-9
TS-GR	1								
TS-TC	.661**	1							
FORQ-S	.080**	.073	1						
FORQ-F	.205**	.205**	.339**	1					
FORQ-O	.077	.132	.307**	.541**	1				
MHC-EWB	.011	.029	.266**	.220**	.148*	1			
MHC-PWB	.013	.025	.462**	.339**	.279**	.491**	1		
MHC-SWB	.079	-.020	.296**	.233**	.321**	.405**	.553**	1	
PHQ-9	.166*	.153*	-.232	.009	-.031	-.425**	-.222**	-.100	1

TS-GR = Teacher Stress – General resources; TS-TC = Teacher Stress Teaching and class management; FORQ-S = Fortitude Self; FORQ-F = Fortitude Family; FORQ-O = Fortitude Other; MHC-EWB = Mental Health Continuum Emotional Well-being; MHC-PWB = Mental Health Continuum Psychological Well-being; PHQ-9 = Patient Health Questionnaire

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

Table 6

Simple Linear regression analysis, with stress as a predictor of positive mental health and depression for the White teacher group (N=208)

Independent variable	Dependent variable				
	Positive Mental Health (MHC)			Depression (PHQ-9)	
	B (SE)	Beta		B (SE)	Beta
TSI-GR	-.194 (.112)	-.161		.072 (.052)	.125
TSI-TC	-.236 (.151)	-.145		.201 (.070)	.260

MHC Model summary: R^2=.079; Adj R^2=.070; F ratio=8.69; p=.000

PHQ-9 Model summary: R^2=.128; Adj R^2 =.119; F ratio=14.90; p=.000

TS-GR = Teacher Stress – General resources; TS-TC = Teacher Stress Teaching and class management

Table 7

Simple Linear regression analysis, with stress as a predictor of positive mental health and depression for the Black teacher group (N=200)

Independent variable	Dependent variable			
	Positive mental Health (MHC)		Depression (PHQ-9)	
	B(SE)	Beta	B(SE)	Beta
TSI-GR	-.157 (.210)	-.135	.112 (.080)	.139
TSI-TC	-.214 (.-189)	-.089	.068 (108)	.062

MHC Model summary: R^2=.010; Adj R^2=-.001; F ratio=.897; p=.410

PHQ-9 Model summary: R^2=.035; Adj R^2=.024; F ratio=3.119; p=.05

TS-GR = Teacher Stress – General resources; TS-TC = Teacher Stress Teaching and class management