# The relationship between coping behaviour and resilience processes in children in a high risk community

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## BA Honours in Psychology

Dissertation submitted in fulfillment of the requirements for the degree *Magister Artium* in Psychology at the Potchefstroom Campus of the North-West University

Supervisor: Dr E Deacon

Co-Supervisor: Prof C van Eeden

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## SUMMARY

Coping and resilience occurs on a regular basis within the lives of children residing in at-risk communities. Coping refers to an action or behaviour on behalf of the child with the aim of diminishing the burden of psychological and emotional stressors. Coping can be achieved by means of internal factors, such as avoidance, positive cognitive restructuring, and wishful thinking, as well as by means of external factors such as social support. Resilience was operationalized as the ability of the child to bounce back from adversity or stress in order to achieve positive developmental outcomes. This ability to overcome adverse events can be achieved by means of external as well as internal factors, and thus resilience is understood as a socio-ecological construct (Ungar, 2008). Hence a theoretical link between the two constructs has been identified in relevant literature, since both coping and resilience refer to children's ability to deal with stress and adversity they encounter.

A quantitative method of research was chosen for this study in order to investigate the relationship between coping behaviour and resilience processes. The sample consisted of 262 primary school pupils aged 10 to 14, residing in a severely socio-economically deprived community in Vereeniging, Gauteng. An equal distribution of gender was achieved in the sample. Two questionnaires were administered to determine the coping behaviour and resilience processes of participants, namely The Children's Coping Strategy Checklist (CCSC) compiled by Ayers and Sandler (1999), and the Resilience and Youth Developmental Model (RYDM) by West.Ed (1999; 2002). Both measures were administered in Afrikaans, which was the medium of teaching in the school. All ethical requirements for a study of this nature were met with precision.

Descriptive statistics regarding the sample revealed that the majority of the participants were aged 12 years, in Grade 6 and Afrikaans speaking. Furthermore the

measuring instruments yielded acceptable reliability coefficients, with the CCSC as well as the RYDM obtaining a value of ρ = 0,98. Measurement model 1, consisting of an eleven-factor structure (coping consisting of six factors and resilience of five factors) indicated the best fit, with a Chi-square ($\chi^2$) value of 4667,30; CFI of 0,95, and a TLI value of 0,95. Furthermore, significant but tenuous statistically correlational relationship was observed between coping and resilience. A coping measurement model could be conceptualized from the results of this study.

Possible limitations of the study were that: The data was collected in 2010, with secondary analysis being the focus of this study; the CCSC as well as the RYDM are relatively new measures within a South African context, and although both were translated for use in this project, cultural equivalence was not ensured. Possible recommendations for further studies may include the development of standardised South African measures, as well as qualitative studies to explore and provide an in-depth understanding of coping behaviour and resilience processes in children.

**Keywords:** ***Coping, coping behaviour, coping strategies, resilience, resilience processes, resilience assets, middle-childhood***

## OPSOMMING

Coping en psigologiese veerkragtigheid is algemene verskynsels ten opsigte van kinders wat in hoë-risiko gemeenskappe woon. Coping verwys na die optrede of gedrag wat die kind manifesteer, met die oog op die vermindering van spanning of stres. Coping manifesteer deur middel van interne individuele faktore, byvoorbeeld vermyding, positiewe kognitiewe herstrukturering, asook wensdenkery, sowel as eksterne faktore soos sosiale ondersteuning. Psigologiese veerkragtigheid word gedefinieer as die vermoë van die individu om aan te pas ten spyte van teëspoed en stres en om steeds positiewe ontwikkeling te bereik. Psigologiese veerkragtigheid kan deur middel van eksterne sowel as interne bates te benut, manifesteer. Gevolglik word psigologiese veerkragtigheid beskou as ‘n sosio-ekologiese konstruk (Ungar, 2008). Daar bestaan dus duidelik ‘n konseptuele verband tussen die twee konstrukte, wat in relevante literatuur geidentifiseer is aangesien beide coping en psigologiese veerkragtigheid verwys na die vermoë van die kind om stres en teëspoed te hanteer.

Die gekose navorsingsmetode vir die studie was ‘n kwantitatiewe ontwerp, om so die verhouding tussen coping gedrag en psigologiese veerkragtigheidsprosesse te bepaal. Die steekproef het bestaan uit 262 laerskool leerders, vanaf ouderdom 10 tot en met 14, woonagtig in ‘n sosio-ekonomiese ontneemde gemeenskap van Vereeninging, Gauteng. Twee meetinstrumente is gebruik om coping gedrag en psigologiese veerkragtigheid van leerders te bepaal, naamlik Die Children’s Coping Strategy Checklist (CCSC), ontwikkel deur Ayers and Sandler (1999), asook die Resilience and Youth Development Model (RYDM), ontwikkel deur West.Ed (1999, 2002). Alle etiese vereistes vir ‘n studie van hierdie aard is noukerig nagekom.

Beskrywende statistiek rakende the populasie het aangedui dat die meerderheid van die deelnemers 12 jaar oud was, in Graad 6, en Afrikaans sprekend was. Verder het die meetinstrumente aanvaarbare betroubaarheids waardes opgelewer, met die CCSC as ρ = 0,98 en die RYDM as ρ = 0,98. Meetingsmodel 1, wat bestaan uit ‘n elf-faktor struktuur (waarvan coping ses opneem en psigologiese veerkragtigheid vyf faktore), het die beste waardes getoon, met ‘n Chi-square ($\chi^2$) waarde van 4667,30, CFI of 0,95, and a TLI waarde van 0,95. Verder was daar ‘n betekenisvolle, maar onbeduidende statistiese verhouding tussen coping en psigologiese veerkragtigheid gevind nie. Daar kan wel ‘n coping meetingsmodel ontwerp word vanuit die resultate van die studie.

Moontlike tekortkominge van die huidige studie is dat: Die data reeds in 2010 ingesamel is en die navorser op sekondêre analise gefokus het. Die CCSC sowel as die RYDM is relatief nuwe meetinstrumente binne ‘n Suid Afrikaanse konteks, gepaard met die feit dat beide meetinstrumente vertaal is om die deelnemers te akkomodeer (beide is vanuit Engels in Afrikaans vertaal). Moontlike aanbevelings vir toekomstige navorsing sluit instrument ontwikkeling – binne ‘n gestandardiseerde Suid Afrikaanse konteks – in, sowel as die onderneming van kwalitatiewe studies, spesifiek om in-diepte kennis rakende coping gedrag en psigologiese veerkragtigheidsprosesse by kinders vas te stel.

**Sleutelwoorde:** ***Coping, coping gedrag, coping-strategieë, psigologiese veerkragtigheid, psigologiese veerkragtigheidsprossesse, psigologiese veerkragtigheidsbates, middel-kinderjare***

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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* (pp. 369-396). Washington, DC: American Psychological Association.

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# The relationship between coping behaviour and resilience processes in children in a high risk community


## Abstract

**Objective:** To determine the relationship between coping behaviour and resilience processes within a middle-childhood sample residing in a high risk community.

**Method:** Two quantitative questionnaires were administered within a group setting, with 262 participants completing the questionnaires. Data analysis was done using SPSS 21 and Mplus 7.11, in terms of descriptive statistics, factor analysis, as well as Structural Equation Modelling.

**Results:** Factor analysis revealed a six-factor structure for coping, and a five-factor structure for resilience. A measurement model consisting of these eleven factors provided the best statistical fit. A significant, but tenuous statistically correlational relationship was found between coping and resilience.

**Conclusion:** Suggestions were made as to why only a tenuous correlational relationship was observed between coping and resilience. A coping measurement model could be conceptualised from this study, with the combination of factors emerging from both measuring instruments used. Recommendations for future research may include qualitative research and quantitative scale development, with longitudinal youth studies.


***Keywords: Coping, coping behaviour, coping strategies, resilience, resilience processes, resilience assets, middle-childhood***

## Introduction

> Adversity comes in many forms, as a result of social or political strive, individual acts of omission or commission, environmental calamities, and many other causes. Due to their youthfulness and, specifically, their lack of social power, children and adolescents are often among the most severely affected by these adverse circumstances (Boyden & Mann, 2005, p. 03).

The participants in this study were children in the middle-childhood developmental phase that faced numerous and continued stressors and risk factors of a personal and contextual nature,

which challenged them to cope and resile from these negative life events. According to Harker (2006), children growing up in poor socio-economic conditions (referred to as the housing effect) are more likely to develop health-related problems later in life. Dass-Brailsford (2005), in accordance with Pillay (2011), argue that adverse environmental factors have the potential of negatively impacting on children's growth and developmental progress, in the process damaging their sense of security, trust, and safety. The child is in constant interaction with the environment and seems to establish a sense of reality through this interaction (Pillay, 2011). The child in adverse circumstances will need to find ways in which he/she can manage and deal with the presented environmental stressors and risks. The child will also apply coping, which refers to "a response aimed at diminishing the physical, emotional, and psychological burden linked to stressful life events and daily hassles" (Snyder & Dinoff, 1999, p. 05). Another way in which the child deals with such circumstances, is through resilience, which can be used to refer to the ability of an individual to handle exceptional stressors, demands and risks and show adaptive functioning after having been faced with adversity (Baumgardner & Crothers, 2010; Carr, 2004; Ungar, 2008).

Several authors, such as Agaibi and Wilson (2005), Leipold and Greve (2009), Marais (2010), Ng, Ang, and Ho (2012), as well as Smith and Carlson (1997), provide a conceptual basis for studying coping coupled with resilience. Smith and Carlson (1997) view coping as the process and resilience as the outcome of successful coping, for example defining resilience as "efforts to restore or maintain internal or external equilibrium under significant threat by means of human activities including thought and action*"* (p. 236). Leipold and Greve (2009), in line with Ng, Ang, and Ho (2012), studied the mediating role between coping and resilience, with the conclusion being that certain coping processes work via a resilience approach. Secondly mentioned authors focused on the conceptual bridge between the two constructs, with the notion that coping enables the individual to be resilient. Marais (2010) as well as Agaibi and Wilson (2005) largely equate the two constructs.

This study investigated the possible relationship between coping behaviour and resilience processes, with a South African youth sample. The process of resilience can be seen as the ability of such youth to overcome the effects of adverse events by means of coping with the daily challenges they face. The two constructs will subsequently be discussed in more detail.

## Literature overview

### Coping

Snyder and Dinoff (1999) postulate that the term coping refers to "a response aimed at diminishing the physical, emotional, and psychological burden that is linked to stressful life events and daily hassles" (p. 05). In line with this, Sample (2012) proposes that the coping processes of the individual involve cognitive as well as affective actions the individual resorts to when faced with significant stress, wherein stress is defined as an interaction between the individual and the environment in a response to adverse stimulation (Schwarzer & Taubert, 2002).

Folkman and Moskowitz (2000; 2004) add another dimension to these definitions by stating that coping focuses to the thoughts and behaviours employed to manage the internal as well as external demands posed by the situation or environment of the individual. Kliewer, Fearnow, and Miller (1996) state that the coping strategies chosen by a child will indicate how these children deal with, and respond to stressful situations being experienced, while Smith and Carlson (1997) adopt a working definition for coping as "an event, situation or combination of situations in which demands are perceived by the child or adolescent as exceeding his or her capacity to comfortably respond" (p. 232).

Within the broad literature regarding coping (Baker & Berenbaum, 2007; Krohne, 2002; Sideridis, 2006; Snyder & Dinoff, 1999), two main strategies of coping have been identified over the years and they are emotion- and problem-focused responses. Emotion-focused coping refers to attempts directed at the individual's management of emotional responses to a specific stressor (e.g. wishful thinking, social support and seeking emotional support) (Sideridis, 2006; Snyder & Dinoff, 1999). Problem-focused coping involves efforts or attempts to modify or control the source of the stressor (e.g. acquiring certain skills, removing barriers, or generating solutions) which may arise from the individual or the environment (Sideridis, 2006; Smith & Carlson, 1997; Snyder & Dinoff, 1999). Furthermore, van Berkel (2009) adds another dimension of coping, namely that of avoidant coping. Avoidant coping refers to the individual shying away from or avoiding the situation of stress and anxiety (van Berkel, 2009). The effectiveness of the chosen strategy rests on the ability to reduce the impact of immediate distress and the extent to which it contributes to long-term outcomes such as psychological well-being or positive health status (Sideridis, 2006; Snyder & Dinoff, 1999).

Schwarzer and Taubert (2002) point out that several attempts have been made to reduce the number of coping responses in order to create a parsimonious set of coping dimensions. These researchers state that two basic distinctions have been agreed upon, namely those of instrumental, attentive, vigilant, or confrontative coping, as opposed to avoidant, palliative, and emotional coping. Furthermore, a distinction can be operationalized between assimilative and accommodative coping, whereby the former aims to modify the environment and the latter modifying the individual (Schwarzer & Taubert, 2002). These coping preferences described can occur in any time sequence, and will differ from one individual to the next (Schwarzer & Taubert, 2002).

When we examine positive coping (also referred to as adaptive coping) as a construct, we find that mainly active coping strategies are of importance (Büssing, Ostermann, Neugebauer, & Heusser, 2010; Faulk, Christian, Gloria, & Steinhardt, 2013; Walsh et al., 2009). Positive coping refers to the adaptations to adverse events which do not only help restore homeostasis, but transform the individual towards a better quality of life (Compton, 2007). Schwarzer and Taubert (2002) refer to this as positive strivings. The term active coping strategies refers predominantly to acts such as problem solving, more intense focus on the problem at hand, as well as emotional regulation and has been associated with higher self-efficacy, less depression, and higher levels of individual functioning (Büssing et al., 2010; Grota, 2005). Positive coping aids the burden of stressors and challenges, whilst improving long-term stress relief by building resources, whether psychological (improved health status and greater well-being) or social (foster and develop social support networks) in nature (Compton, 2007).

With regard to coping behaviour, distinct classifications can be made, namely that of trait-orientated versus state-orientated paradigms, and the micro-analytic versus macro-analytic approaches to coping (Krohne, 2002). The research objectives of trait-orientated approaches can be described as identifying individuals whose coping resources are not adequately developed, whereas the state-orientated approach focuses on the actual coping process taking place (Krohne, 2002). The micro-analytic approach tends to focus on a large number of specific coping strategies or responses, and the macro-analytic view operates on a higher level of abstraction; thus looking extensively at the fundamental constructs related to the coping process (Krohne, 2002). Krohne (2002) writes that the defence mechanisms as developed by Sigmund Freud are a prime example of the trait-orientated, micro-analytic approach to coping.

Various theoretical frameworks or models exist to describe coping: Lazurus (1993; as cited in Krohne, 2002) writes that there are two dimensions to consider when investigating coping, namely that of appraisal, relating to the individual's evaluation of the significance of the event, as well as coping, relating to the individual's efforts in both thought and action in order to manage the event. According to this theory, two definite processes are involved as mediators within the person-environment interaction, namely that of cognitive appraisal and coping behaviour (Krohne, 2002). Whereas the first process highlights the understanding of the relevant event, the second focuses more on the way of dealing with the specific event (Krohne, 2002).

Within the theory/model proposed by Lazurus and Folkman (1984; as cited in Krohne, 2002) they described the coping process in four distinct segments, being:

- The coping actions of the individual cannot be grouped according to the effects thereof - rather according to certain characteristics;
- The coping process refers to behavioural and cognitive reactions within the individual;
- Coping consists of various single acts that are subsequently organized, which is referred to as a coping episode. Within this segment, coping is characterised by the occurrence of these actions, which relates to the interconnection thereof;
- Coping actions can often be distinguished by the focus on the elements involved in the stressful encounter.

Coping is an important indicator, not only of what children do when faced with stress, but of understanding how they adjust and adapt after encountering the specific stressor (Hernandez, Vigna, & Kelley, 2010). Klein-Hessling, Lohaus, and Ball (2005) indicate the relationship between certain psychological variables such as self-efficacy, stress and coping and the predictive effect thereof on related protective and risk behaviours. Skovdal, Ogutu, Aoro, and Campbell (2009) go further by stating that the community of the child has the ability to mediate the risks and benefits associated with stressors. Coping is believed to play a vital role within the functionality of youth's health-risk behaviours (Klein-Hessling et al., 2005).

## Resilience

The term resilience can be used to refer to the ability of the individual to bounce back and resile after having been faced with severe adversity and traumatic events (Baumgardner & Crothers, 2010; Boyden & Mann, 2005; Compton & Hoffman, 2013; Ungar, 2008; Ungar, 2011a; Ungar, Liebenberg, Dudding, Armstrong, & Van de Vijver, 2013). In order for resilience to manifest, negative life circumstances or stressors, to which the individual responds and adapts favourably, needs to be present (Theron, 2012). Friborg, Barlaug, Martinussen, Rosenvinge, and Hjemdal (2005) postulates that the term resilience involves the combating of misery in order to achieve adaptation, while Carr (2004), Theron and Dunn (2010), Flouri, Tzadivis, and Kallis (2010), as well as Theron and Theron (2010) are of opinion that the term resilience implies the ability of the individual to experience as well as deal with exceptional demands, severe risks and stressors without developing certain stress-related disorders.

Resilience is viewed as a dynamic and multi-dimensional process regarding the idea that resilience can manifest in more than one way that will differ from one individual to the next (Liebenberg, Ungar, & Van de Vijver, 2011; Pillay, 2011). Therefore resilience can be seen as a social ecological construct, a dynamic process that incorporates positive adaptation to and interaction with a supportive ecology, when faced with a severe adverse event or situation, and that should under no circumstances be uniformly generalized across different cultures, groups or communities (Luthar, Cicchetti, & Becker, 2000; Pillay, 2011). This notion regarding individual resilience extends to the idea that a child in distress may draw on cultural support in order to achieve adaptation and positive development (Phasha, 2010). Cultural aspects are known to influence both the identification and socialization processes of the child (Phasha, 2010).

The socio-cultural approach also relates to the idea that children construct their reality through or within their immediate environment (Pillay, 2011). Pillay (2011) is of the opinion that this socio-ecological approach focuses on the interaction between, as well as interdependence of (1) learners; (2) parents; (3) communities; and (4) schools. Therefore, children seem to influence and to be influenced by the environment in which everyday interaction takes place with the mentioned role players (Pillay, 2011). Luthar and Brown (2007) as well as Pillay (2011) indicate that negative aspects within these environments may include aspects such as harsh care-giving, poverty, inadequate housing and sanitation, bullying from others, crime, lack of support as well as resources. Positive aspects may

include friendships, sibling presence, interaction, positive activities, support from others, as well as personal, emotional and psychological abilities and characteristics (Boyden & Mann, 2005; Pillay, 2011), which can also be referred to as protective assets.

When adopting a resilience perspective, the focus needs to be on the strengths of the individual that enable him/her to adapt well and handle the experienced stressors (Brown & Robinson, 2012). Snyder, Lopez, and Pedrotti (2011), state that developmental psychologists, and educational psychologists (Pillay, 2011) use the term resilience in order to determine certain traits, skills and circumstances that enable the child to achieve desired developmental outcomes despite facing adverse and traumatic circumstances or environments.

Gonzales (2000) postulates that the concept resilience can be explained as a comparison of protective and enabling assets that exist in the lives of some individuals and are absent in those of others. The question posed by Gonzales (2000) is whether these individual attributes, or resources, are indeed strong enough to assist the individual when experiencing severe adversities in life; hence it is advisable to study such protective assets in order to determine their effectiveness in enabling an individual's resilience when faced with adversity. Boyden and Mann (2005) state that these protective factors tend to shape the extent to which the child uses strategies to manage stressful situations, and defend themselves against painful experiences or even low self-esteem.

It is, however, becoming clear that factors within the individuals themselves are not enough to produce resilience; the individual has to interact in partnership with the environment. Ungar (2011a; 2011b) argues that in understanding the process of resilience we need to focus equally on the individual and his/her strengths or abilities, as well as on the way in which the support available within the person's social and environmental ecologies would enable him/her towards resilient adaptation (Theron & Theron, 2010; Ungar, 2011b). Hence, with regard to the child and his resilience, research needs to pay attention to the child's environment, which has the potential of either facilitating or inhibiting the developmental processes that underpin personal abilities and strengths of the child (Ungar, 2011a). Ungar (2012) focuses on the environment of the individual, and proposes the term facilitative environments, which relates to the idea that the individual will search for opportunities within his immediate surroundings to buffer negative and adverse events. Prilleltensky (2012) similarly indicates that resilience involves enlisting personal and social resources in order to deal with adversity. The ability to cope with adversities relies heavily on the balance of power between the personal and the social resources of the individual.

The pathway approach to resilience emphasizes that individuals use their strengths and capabilities to navigate their way to resources and to obtain the necessary support from such resources to enable them towards adaptive functioning in the face of adversity (Pasha, 2010; Pillay, 2011; Ungar, 2011b). The pathway approach can be linked to the notion that resilience research seeks to explore methods through which youth can maximize their well-being (Luthar & Brown, 2007). This relates to an eliminating process through which the ill effects stemming from various life conditions can be mitigated (Luthar & Brown, 2007).

Various theoretical frameworks or models exist to describe resilience: Edith Grotberg (1995) conceptualised resilience as "a universal capacity which allows a person, group or community to prevent, minimize or overcome the damaging effects of adversity" (p. 07). Grotberg developed a model of resilience which refers to factors within the individual as well as the environment. The resilience program of the International Resilience Research Project (IRRP) uses three (3) distinct categories in which resilience factors are considered (Grotberg, 2001):

- I AM – which focuses on the development of personal strengths, capabilities and competencies
- I CAN – relates to acquiring coping skills as well as problem-solving abilities in order to deal with adversity
- I HAVE – relates to the availability and quality of external support systems and resources

Resiliency theory proposes that most individuals are able to elicit resilience attributes or resources – be it protective factors within the self, the community, schools or the environment (Ferreira & Ebersohn, 2012; Gonzalez, 2000). The basic flow process or transactional model indicates that when a stressor or adversity occurs, the individual makes a cognitive appraisal of the situation in order to establish whether or not he can deal with it and then employs the resources (protective factors) to deal with the adversity.

Kumpfer (1999) developed a transactional model of resilience, which focuses on the interaction of the individual with the environment and posits a dynamic framework explaining resilience and resilience processes. Components of the multi-dimensional resilience process proposed by Kumpfer (1999) include the following:

1. The stability and well-being of the person is threatened by stressors or risk factors.
2. The stressors present within a context and within such a context interaction between protective and risks factors occur.
3. Transactional processes between the individual and the environment take place and these interactions are aimed at perceiving, interpreting and surmounting the threats, challenges or risks.
4. Intra-personal characteristics, strengths and competencies of the individual interact with available resources in the environment.
5. The resiliency processes include coping strategies the individual had gradually learned from prior exposure to stressors.
6. Adaptive outcomes develop that promote resilient integration of all developmental tasks and that foster abilities and competencies which enable future resilience processes in different situations (p. 185).

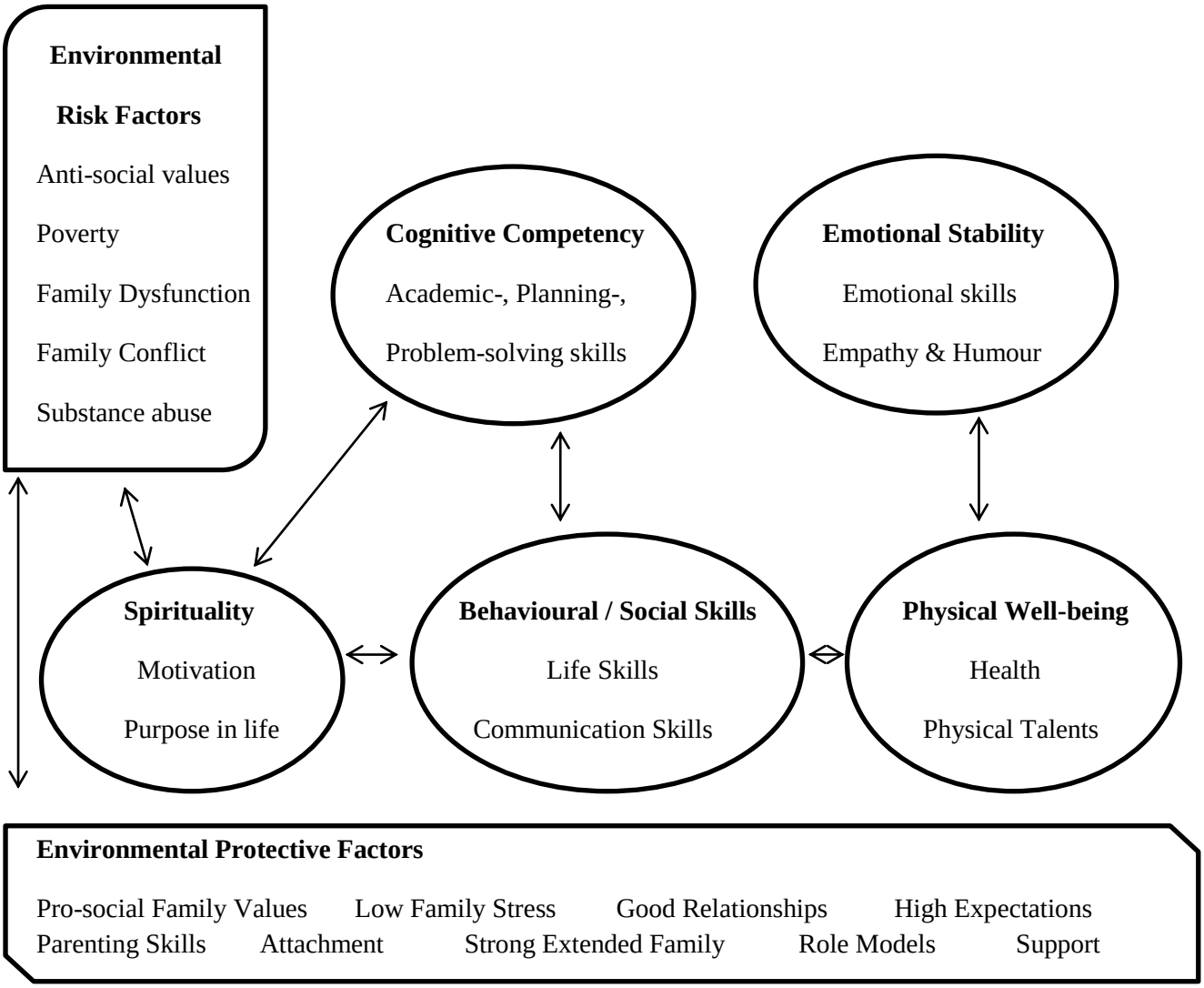



Figure 1: Kumpfer's (1999) model of risk and protective factors of resilience (as cited in Resilience and Happiness, 2013)

For the purposes of this study resilience was conceptualised according to the proposed conceptualisation of West.Ed (2003), namely that "resilience is an inborn developmental wisdom that naturally motivates individuals to meet their human needs for love, belonging, respect, identity, power, mastery, challenge, and meaning" (p. 2). Such needs are met in the child's interaction with enabling environments that guide him/her with caring relationships, high expectations and meaningful opportunities to participate in and contribute to their life realities. From such enabling interactions with supportive environments, the child develops resilience-building capacities that serve as protective factors against risks and adversities.

# The RYDM Theoretical Framework

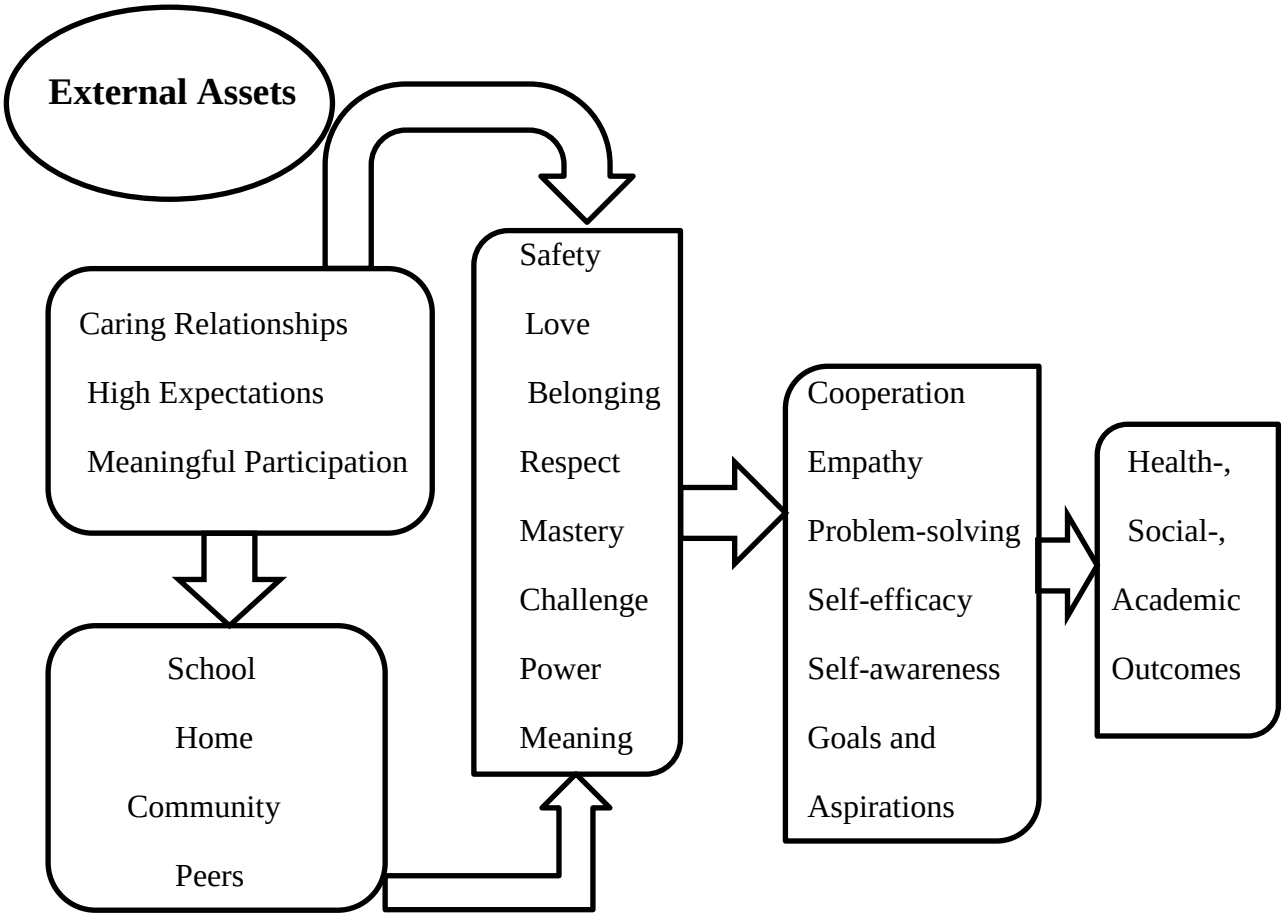



Figure 2: RYDM Theoretical framework (West.Ed, 2002)

**Conceptual overlap between coping and resilience**

Both the coping and resilience constructs refer broadly to the abilities of children to adapt mostly positively and to develop according to expected trajectories despite facing stressors and even adversity in their developmental contexts (Kumpfer, 1999). However, coping and resilience are often used interchangeably to indicate the above-mentioned outcomes and conceptual lack of clarity which occasionally exists when the constructs are used in literature (Fletcher & Sarkar, 2013).

Some authors, such as Bonanno (2004), Leipold and Greve (2009), Smith and Carlson (1997), as well as Prillentensky (2012) regard coping as the process and resilience as the outcome of successful coping, for example defining resilience as "efforts to restore or maintain internal or external equilibrium under significant threat by means of human activities including thought and action" (Smith & Carlson, 1997, p. 236). Furthermore,

Prilleltensky (2012) defines resilience as an individual's method of coping with adversity by utilizing his/her personal as well as social resources. Bonanno (2004) postulates that individuals need to cope with certain adversities and stressors in order to utilize possible pathways to resilience, and in essence to be resilient. Leipold and Greve (2009) show the interchange-ability of the two constructs when describing the stability of the individual when faced with severe conditions (resilience), which results mainly from the coping processes employed by that individual.

Leipold and Greve (2009), Tugade, Fredrickson, and Feldman Barrett (2004) as well as Lee, Kwong, Cheung, Ungar, and Cheung (2009) identify the link between resilience and coping in the positive developmental outcomes of the individual. The findings of these authors indicate that certain coping efforts manifest via resilience processes. Leipold and Greve (2009) indicate this manifestation by stating: "Traditionally resilience is viewed as an important way of coping: Through resilience, an individual recovers from or avoids negative outcomes from burdensome conditions" (p. 40). Ng, Ang, and Ho (2012) found a mediating role of resilience with regard to the relationship between coping and psychopathology, while Johnson et al. (2010) indicate that resilience can be viewed as the appraisal process that influences coping behaviour when the child is faced with adversity and stress. Perhaps the most salient expression of this line of thought is that of Fletcher and Sarkar (2013) who state that "resilience is characterized by its influence on a person's appraisal before coping behaviour starts and by its positive and protective impact on the adaptive outcomes" (p. 16).

Finally, a third group of authors, such as Marais (2010) equates the two constructs by arguing that the terms coping and resilience both refer to the ability of the individual to adapt positively and develop favourably, despite being faced with difficult circumstances and extreme challenges. Agaibi and Wilson (2005) coin the term resilient coping, which refers to the process of handling exceptional stressors and adversities as a multifaceted and complex phenomenon, characterized by a set of complex human behaviours by the individual. Davey et al. (2003) also use this literary equation between the constructs.

**Middle-childhood**

Middle-childhood describes the developmental phase of ages 6 to 11 – or the onset of puberty – with clear differences between the upper and lower ends within this category (Papalia & Feldman, 2012; Papalia et al., 2009; Segilman & Rider, 2006). Some authors seem to broaden the age limitations through the inclusion of children aged 12 years (Segilman & Rider, 2006;

Weiten, 2010). Important features of development during middle-childhood are the following:

**Brain development and cognitive functioning**

The theory of Jean Piaget argues that this developmental stage can be described as the Concrete-Operational Phase (Louw & Louw, 2007), during which the thought-processes for solving problems develop, whilst more complex thinking (e.g. reversibility, perception, as well as classification) becomes the cognitive focus of the child. Louw and Louw (2007), Papalia and Feldman (2012) as well as Papalia et al. (2009) declares that changes within the brain structure and functioning comes to the fore, mainly to support cognitive advances (such as processing- and memory ability) necessary for adapting to and mastering their environment.

**Physical development and motor functioning**

Two main sources of motor development can be identified, namely that of games being played and engaging in physical activities (Papalia & Feldman, 2012; Papalia et al., 2009). The games chosen to play, utilize the stimulation of brain activity rather than rough and tumble play and these games tend to be informal and spontaneously organised (Papalia & Feldman, 2012; Papalia et al., 2009). Physical activities such as sport and outdoor activities underline motor skills as well as physical health, strength and control benefits within this developmental stage (Louw & Louw, 2007; Papalia & Feldman, 2012; Papalia et al., 2009).

**Personality development and self-functioning**

Erik Erikson stated that this developmental stage is characterized as Industry versus Inferiority (Meyer & Viljoen, 2008). This phase relates to the fact that children need to master certain skills and abilities, which will lead to recognition from others and it is essential during this phase that children engage in meaning-making processes, in order to conceptualize their social identity (Meyer & Viljoen, 2008). According to Meyer and Viljoen (2008), the danger this phase poses lies in the inability to acquire skills and tools that are culturally sensitive, leading to inferiority and incompetence.

The environment plays a very important role towards positive developmental outcomes. Kousholt (2011) postulates that the developmental possibilities of the child are mainly shaped by connections and relations within the everyday contexts in which they function. However, some environmental constraints may have a negative impact on

developmental processes and individual outcomes. One possible moderator for such negative impact may be found in coping and resilience, which enable the child to handle stress and adverse events in order to achieve positive developmental outcomes.

Based on the above brief overview of relevant literature for this study, the research question that comes to mind is: *What is the conceptual relationship between coping behaviour and resilience processes within middle-childhood?*

## Objective of the Study

The study investigated the role of coping as well as resilience within a middle-childhood sample living under conditions of risk and adversity. More specifically the relationship between coping behaviour and resilience processes was determined. A measurement model based on the conceptual relationship between the constructs could be identified.

### Specific objectives

The specific aims of the study can be depicted as follows:

- ✓ To investigate the nature of coping behaviour and resilience processes in middle-childhood as conceptualised in literature;
- ✓ To utilize an existing data-set to investigate the relationship between coping behaviour and resilience processes.

## Method

### Research design

The design of this study can be described as quantitative and of a cross-sectional nature. The cross-sectional nature of the study can be demonstrated by the notion that the data was collected at a specific point in time (2010) and re-analysed at a later stage (2013) (Babbie & Mouton, 2010). The quantitative nature of the study can be portrayed by the objective focus on numerical values in order to reach certain conclusions regarding a particular sample, with the aim of generalizing (Babbie & Mouton, 2010; Maree & Pietersen, 2010).

### Participants and setting

Participants were 262 middle-childhood youth attending a primary school (ranging from Grade 5 to Grade 7) situated in a socio-economically deprived environment within the Gauteng Province. See Table 1 for a description of the participants.

A risk questionnaire in the original study showed the following as stressors for the participants in this community: (1) *I feel unsafe outside of school* (reported by 65% of the sample); (2) *Anxiety manifested by frequent aches and pains* (53%); together with (3) *Experience of bullying* (45%). Thus, risk and adversity is a reality to these youth living in an area characterised by aspects such as crime, violence, poverty and unemployment, substance abuse, and child maltreatment as well as physical abuse (Marais, 2010).

Table 1

*Characteristics of the Participants (n = 262)*

| Item | Category | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Female | 130 | 49,6 |
| | Male | 132 | 50,4 |
| Age | 10 years | 43 | 16,4 |
| | 11 years | 80 | 30,5 |
| | 12 years | 101 | 38,6 |
| | 13 years | 33 | 12,6 |
| | 14 years | 5 | 1,9 |
| Grade | Grade 5 | 74 | 28,2 |
| | Grade 6 | 103 | 39,3 |
| | Grade 7 | 85 | 32,5 |
| Language | English | 8 | 3,0 |
| | Afrikaans | 212 | 80,9 |
| | Sesotho | 28 | 10,7 |
| | isiXhosa | 3 | 1,2 |
| | Zulu | 8 | 3,0 |
| | Other | 3 | 1,2 |

* No missing values were observed in the data

A total of 262 individual's participated in the original research project (response rate = 100%). This was possible because the learners were divided into groups of 20 at the time of data collection. Table 1 displays the characteristics of this sample, with an equal distribution of gender throughout. The majority of the participants was aged 12 years (38,6%), with 39,3% of them currently in Grade 6 at the time. As far as language is concerned, 80,9% of the sample reported Afrikaans as being their home language.

## Procedure and ethical considerations

The original author was contacted in order to gain permission to use the data set she collected during the completion of her MA degree in Psychology (Marais, 2010), to which she agreed. Full ethics clearance was obtained from the North-West University as well as the Optentia Research Focus Area (ethics number: OPT-2013-004). The existing data was worked through in order to familiarise the current author with the contents thereof. In the original study the validated questionnaires were translated from English to Afrikaans, in order to accommodate the participants in the study. Last-mentioned process was done by professional translators, in conjunction with language editors, who followed the forward-backward translation method (Marais, 2010). The statistical reliability and validity of these translated questionnaires for use with the participants were determined in the original study and were found to be acceptable. Data was then collected by means of structured groups (20 pupils per group) in order to ensure completeness and learners' understanding of the items being questioned.

## Statistical procedures

Statistical analyses were done by using of SPSS IBM Statistics 21 (Field, 2009; IBM Corporation, 2012) as well as Mplus 7.11 (Muthén & Muthén, 2012). SPSS 21 (IBM Corporation, 2012) analysis focused on the calculation of inter-item consistency (Roodt, 2009), frequencies as well as descriptive statistics. Mplus 7.11 (Muthén & Muthén, 2012) was used to test the hypothesised measurement models, by means of Structural Equation Modelling in order to statistically determine the extent to which it proved to be consistent with the data. More detailed information regarding statistical analyses will be given henceforth.

## Measuring instruments

Coping was measured through the Children's Coping Strategies Checklist (CCSC) developed by Ayers and Sandler (1999). The CCSC is a 54-Item self-report inventory through which children (aged between 9 and 13 years) can describe their coping strategies. Lewis and Kliewer (1996) as well as Sales, Fivush, and Teague (2008), report that the CCSC employs a Likert type rating scale, ranging from 1 (*never*) to 4 (*most of the time*). The CCSC consists of four subscales and 13 dimensions. The subscale that will be used in this study is Active Coping Strategies, which includes Problem Focused Coping (PFC) and Positive Cognitive

Restructuring (PCR); Distraction Strategies (DS); Avoidant Strategies (AVA), Wishful thinking (WISH) and Support Seeking Strategies (SS) (Ayers & Sandler, 1999).

The following are example items of the subscales used in this study, with Cronbach alpha's (α) obtained by Ayers and Sandler (1999): *You thought about what you could do before you did something* (Cognitive Decision Making – CDM, 0,72), *You did something to make things better* (Direct Problem Solving – DPS, 0,68) *You watched TV* (Distracting Actions – DA, 0,60), *You avoided it by going to your room* (Avoidant Actions – AVA, 0,64), *You wished that things were better* (Wishful Thinking – WISH, 0,62), *You told other people what you wanted them to do* and *You let other people know how you felt* (SSS) (Ayers & Sandler, 1999). Cronbach alpha coefficients (α) for the CCSC ranged from 0,55 to 0,69 for the subscales investigated within an American adolescent sample, and inter-item correlations were reported as ranging from 0,23 to 0,37 (Gaylord-Harden et al., 2008). In this study the reliability coefficient for the measure was established as ρ = 0,98, with subscale reliability ranging from 0,80 to 0,92 respectively.

Resilience was operationalized through the Resilience and Youth Development Module (RYDM) as established by West.Ed (2002). This scale is a 56-item self-report measure that explores the environmental assets as well as the internal assets relating to positive youth development (West.Ed, 2003). According to Hanson and Kim (2007), the RYDM assesses environmental and internal assets that can be associated with positive youth development as well as school success. Of the 56 items in the measure, 33 are used to indicate 11 external assets and the remaining items indicate the presence of 6 internal assets (West.Ed, 2003). The environmental assets tapped by the RYDM, includes meaningful and pro-social bonding within the community, school, family as well as peers, whereas the internal assets refer to personal resiliency traits such as problem-solving skills and self-efficacy (Hanson & Kim, 2007).

The subscales and example items of the RYDM used in the study are as follows: External assets: School Individuals (SCHI; *At my school, there is a teacher or some other adult who really cares about me*), Community Environment (COMM; *Outside of my home and school, there is an adult who I trust*); Home Environment (HOME; *In my home, there is a parent or some other adult who talks with me about my problems*); Internal Assets (INT; *I stand up for myself without putting others down*); and School Connectedness (SCHCONN; *I feel close to the people at this school*) (West.Ed, 2002). Furlong, Ritchey, and O'Brennan

(2009) report that the Cronbach alpha coefficients (α) of the RYDM range between 0,75 and 0,93 for male students and between 0,69 and 0,91 for female students. Present analyses reported a reliability coefficient for the combined measure as being 0,95, with subscale reliability ranging from 0,75 to 0,92 respectively.

The socio-demographic questionnaire was used to gain insight into certain socio-demographic variables of the participants involved. Basic variables such as age, gender, home language, as well as ethnicity were determined by using this 4-item socio-demographic questionnaire.

### Statistical analysis

Descriptive statistics, through the use of IBM Statistics SPSS 21 (IBM Corporation, 2012) (including means, standard deviations, skewedness, and kurtosis) were used in order to analyse the distribution of the individually reported scores. Reliability coefficients (ρ) were computed to determine the reliability of the measuring instruments employed in this study. The researcher implemented Structural Equation Modelling through the statistical program Mplus 7.11 (Muthén & Muthén, 2011), in order to test the adequacy of the measurement models (SEM; Byrne, 2011; Hox & Bechger, n.d.; Schreiber, Stage, King, Nora, & Barlow, 2006) by calculating the Maximum Likelihood (ML) coefficient.

Further analysis of the data obtained included aspects such as Chi-square statistic ($\chi^2$), which refers to the test of absolute fit of the proposed measurement and structural model, and the Root-Mean-Square Error of Approximation (RMSEA); and incremental fit indices including the Tucker-Lewis Index (TLI); as well as Comparative Fit Index (CFI) (Muthén & Muthén, 2012).

## Results

### Descriptive statistics

Descriptive statistics as well as reliability coefficients for all the variables identified are reported in Table 2. Inter-item consistency focuses on the consistency of all responses provided by the participants (Babbie & Mouton, 2010; Roodt, 2009). Based on the evidence of the data set, the majority of the variables seem to be skewed. Pallant (2010; 2011) argues that skewedness within a sample of 200, or more participants, is not noted as statistically significant. Although there are limitations to working with Cronbach alpha coefficients as

well as reliability indices, last-mentioned will be reported and interpreted accordingly (Gu, Little, & Kingston, 2013; Tavakol & Dennick, 2011). The reliability coefficients for the measuring instruments were calculated as 0,98 for both the CCSC and the RYDM respectively, with subscales for these measures ranging from 0,75 (RYDM - School Connectedness) to 0,92 (CCSC - Problem Focused Coping as well as Positive Cognitive Restructuring). In statistical terms these are interpreted as good reliability indices, with the ideal being interpreted as one, with consistency being elicited while measuring the constructs at hand (Tavakol & Dennick, 2011).

Confirmatory Factor Analysis (CFA) through Mplus 7.11 (Muthén & Muthén, 2012), indicated a six-factor structure for the CCSC with a five-factor structure for the RYDM. With regard to the CCSC, the identified factors can be labelled Problem Focused Coping (PFC); Positive Cognitive Restructuring (PCR); Distraction Strategies (DS); Avoidant Actions (AVA); Wishful Thinking (WISH) and Support Seeking Strategies (SSS). Regarding the RYDM the five-factors measuring instrument, namely School Individuals (SCHI); Community Environment (COMM); Home Environment (HOME); Home Environment (HOME); Internal Assets (INT); as well as School Connectedness (SCHCONN). The descriptive characteristics as well as reliability coefficients are described in Table 2.

Table 2

*Descriptive Statistics and Reliability Coefficients* (ρ) *of the Measuring Instruments*

| Scale/Sub-scale | Mean | SD | Skewedness | Kurtosis | ρ |
|---|---|---|---|---|---|
| CCSC | 2,48 | 1,03 | 0,13 | -1,04 | 0,98 |
| PFC | 2,59 | 0,99 | 0,58 | -1,05 | 0,92 |
| PCR | 2,51 | 0,98 | 0,19 | -0,99 | 0,92 |
| DS | 2,53 | 1,12 | 0,03 | -1,40 | 0,90 |
| AVA | 2,54 | 1,04 | 0,38 | 1,17 | 0,86 |
| WISH | 2,81 | 1,04 | -0,33 | -1,00 | 0,80 |
| SSS | 2,19 | 0,93 | 0,46 | -0,91 | 0,90 |
| RYDM | 3,17 | 0,92 | -0,81 | -0,35 | 0,98 |
| SCHI | 3,20 | 0,85 | -0,83 | -0,32 | 0,90 |
| COMM | 3,36 | 0,93 | -1,00 | 0,56 | 0,90 |
| HOME | 0,34 | 0,93 | -0,94 | -0,20 | 0,92 |
| INT | 3,08 | 0,94 | -0,63 | -0,63 | 0,94 |
| SCHCONN | 3,37 | 0,88 | -1,15 | 0,18 | 0,75 |

Table 2 indicates that the means for the implemented measures are reported as 2,48 for the CCSC, and 3,17 for the RYDM, with standard deviations (SD) reported as being between 1,03 and 0,93 for the distinct measuring instruments. Skewedness indices are found to be ranging from 0,13 to -0,81, with the kurtosis indices providing the diffusion within the data, as -1,04 and -0,35. KR 20 reliability indices for each of the factors was found to be very high, with the Coping as well as Resilience factors each obtaining a value of 0,98.

**Hypothesized Measurement models**

A hypothesized eleven-factor measurement model was tested through Confirmatory Factor Analysis (CFA) in Mplus 7.11, in order to determine whether the anticipated factors load on the appropriate structures. A total number of five measurement models were tested in order to determine statistical fit with the data. The following measurement models were tested using of Mplus 7.11 (Muthén & Muthén, 2012):

Measurement model 1 comprised of a six-factor structure for coping (CCSC), and a five-factor structure for resilience (RYDM). As for coping, the factors can be labelled: (1) Problem Focused Coping (measured by 11 unobserved variables); (2) Positive Cognitive

Restructuring (measured by 12 unobserved variables); (3) Distraction Strategies (measured by 9 unobserved variables); (4) Avoidance Strategies (measured by 7 unobserved variables); (5) Wishful Thinking (measured by 4 unobserved variables); as well as (6) Support Seeking Strategies (measured by 9 unobserved variables). With regard to resilience, the five-factor structure was composed as follows: (1) School Individuals (measured by 8 unobserved variables); (2) Community Environment (measured by 4 unobserved variables); (3) Home Environment (measured by 12 unobserved variables); (4) Internal Assets (measured by 15 unobserved variables); and lastly (5) School Connectedness (measured by 3 unobserved variables). This measurement model was used as the baseline model in order to test other models.

Measurement model 2 consisted of a seven-factor structure. Coping consisted of six-factors, namely that of (1) Problem Focused Coping (measured by 11 unobserved variables); (2) Positive Cognitive Restructuring (measured by 12 unobserved variables); (3) Distraction Strategies (measured by 9 unobserved variables); (4) Avoidance Strategies (measured by 7 unobserved variables); (5) Wishful Thinking (measured by 4 unobserved variables); as well as (6) Support Seeking Strategies (measured by 9 unobserved variables). Resilience consisted of a one-factor structure (measured by 42 unobserved variables).

Measurement model 3 entailed a six-factor structure. Coping was represented as a one-factor structure (measured by 52 unobserved variables). With regard to resilience, the five-factor structure was composed as follows: (1) School Individuals (measured by 8 unobserved variables); (2) Community Environment (measured by 4 unobserved variables); (3) Home Environment (measured by 12 unobserved variables); (4) Internal Assets (measured by 15 unobserved variables); and lastly, (5) School Connectedness (measured by 3 unobserved variables).

Measurement model 4 was composed of two factors. Coping was represented by one-factor (measured by 52 unobserved variables), and resilience also consisted of one-factor (measured by 42 unobserved variables). Thus this model only consisted of a two-factor structure for the measuring instruments used in this study.

Measurement model 5 consisted of one latent factor, consisting of 92 unobserved variables. This was the final measurement model to be statistically tested in Mplus 7.11 (Muthén & Muthén, 2012).

**Testing the Measurement models**

The baseline measurement model was tested by analysis in Mplus 7.11 (Muthén & Muthén, 2012). Based on the statistical aspects such as the overall sample size ($n$ = 262), degrees of freedom (*df*) as well as the free parameters of the models, enough statistical evidence is present in order to test the hypothesized measurement models (Lindsey, 1999). Global assessment of model fit was based on several goodness-of-fit statistics, as reported in Table 3 below.

Table 3

*Fit Statistics of Measurement Models*

| Model | $\chi^2$ | *df* | RMSEA | CFI | TLI |
|---|---|---|---|---|---|
| Model 1 | 4667,30 | 4238 | 0,02 | 0,95 | 0,95 |
| Model 2 | 4802,94 | 4269 | 0,02 | 0,94 | 0,93 |
| Model 3 | 4893,87 | 4270 | 0,02 | 0,93 | 0,92 |
| Model 4 | 4986,41 | 4276 | 0,03 | 0,92 | 0,91 |
| Model 5 | 6938,19 | 4277 | 0,05 | 0,68 | 0,67 |

*df*: degrees of freedom; RMSEA: Root Mean Square Error of Approximation; CFI: Comparative Fit Index; TLI: Tucker–Lewis index

As is evident from Table 3, a Chi-square ($\chi^2$) value of 4667,30 was obtained for the eleven-factor model (Measurement Model 1), with a *df* value of 4238. Furthermore, measurement model 1 delivered acceptable values for RMSEA = 0,02; CFI = 0,95; as well as TLI = 0,95. The Weighted Root Mean Square Residual (WRMR) value for this model was calculated as 1,07, with the ideal being below 1. The hypothesised model (Measurement model 1) had an acceptable fit with the data.

Hence, measurement model 1, which consisted of a six-factor structure for coping (CCSC), and a five-factor structure for resilience (RYDM), had the best statistical fit with the data. Factors for coping included the following: (1) Problem Focused Coping (PFC); (2) Positive Cognitive Restructuring (PCR); (3) Distraction Strategies (DS); (4) Avoidance Strategies (AVA); (5) Wishful Thinking (WISH); as well as (6) Support Seeking Strategies (SSS). With regard to resilience, the five-factor structure was composed as follows: (1) School Individuals (SCHI); (2) Community Environment (COMM); (3) Home Environment (HOME); (4) Internal Assets (INT); and lastly (5) School Connectedness (SCHCONN).

Overall, measurement model 1 consisted of an eleven-factor structure, measured by a total of 94 unobserved variables.

Furthermore, measurement models 2, 3, as well as 4 had relatively good statistical fit with the data. These models were found to be relatively similar when comparing fit indices for each of the models. When calculating the fit statistics for each of the measurement models, the CFI as well as TLI were decreasing gradually with every model. As for measurement model 5, which consisted of one latent factor variable, the fit statistics were found to be significantly lower than the other models produced though Mplus 7.11 analysis (Muthén & Muthén, 2012).

Table 4

*Measurement Model Standardized Results and R-Square Values*

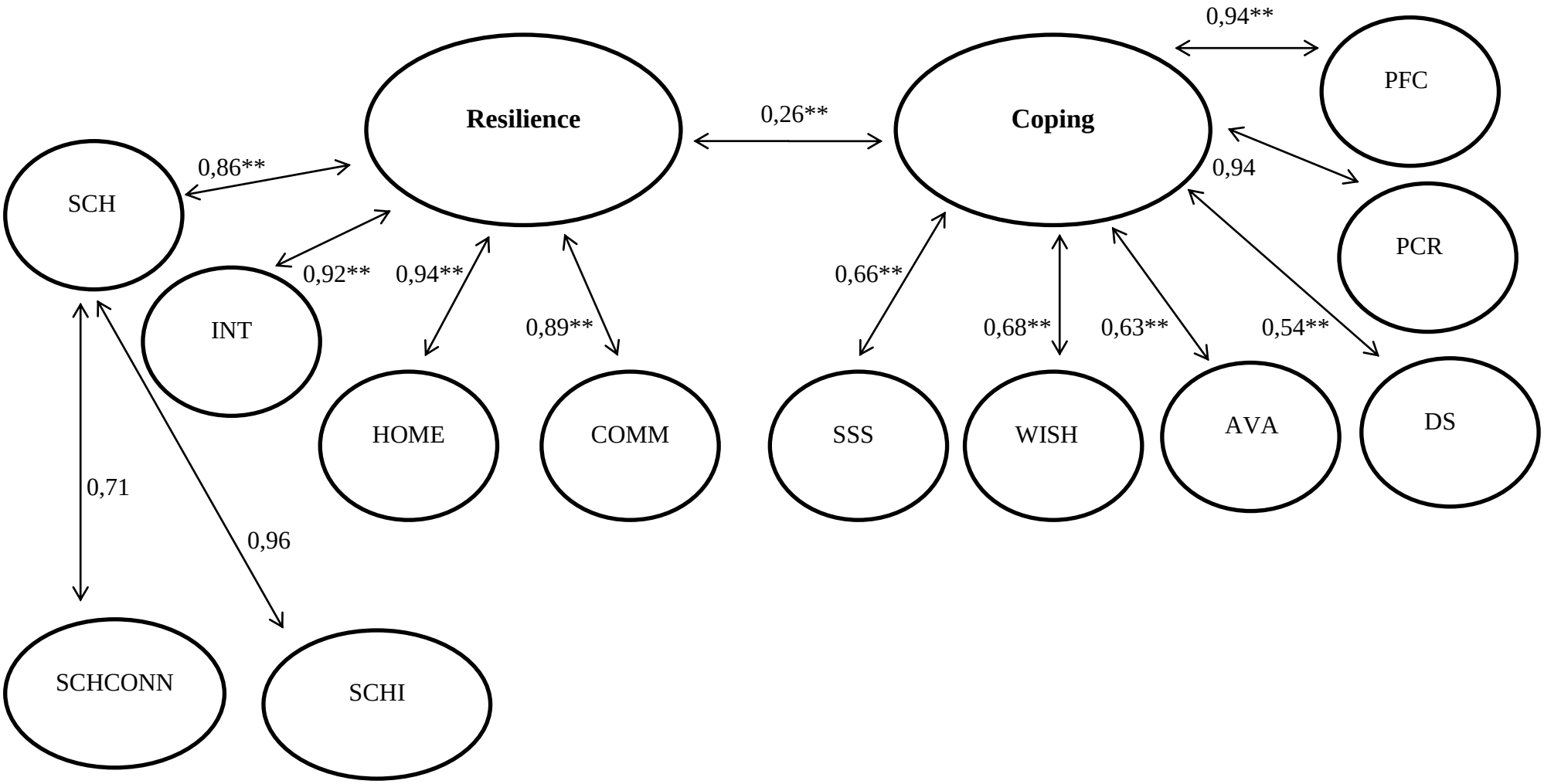
| | Estimate | S.E. | Est./S.E. | Two-Tailed P-Value | R-Square |
|---|---|---|---|---|---|
| **PFC BY** | | | | | |
| A16 | 0,42** | 0,06 | 6,90 | 0,00 | 0,18 |
| A1 | 0,33** | 0,07 | 5,01 | 0,00 | 0,11 |
| A47 | 0,64** | 0,05 | 13,8 | 0,00 | 0,41 |
| A35 | 0,52** | 0,06 | 8,67 | 0,00 | 0,28 |
| A23 | 0,57** | 0,05 | 11,48 | 0,00 | 0,33 |
| A6 | 0,50** | 0,06 | 8,65 | 0,00 | 0,25 |
| A49 | 0,58** | 0,05 | 11,59 | 0,00 | 0,34 |
| A43 | 0,63** | 0,05 | 13,88 | 0,00 | 0,40 |
| A50 | 0,53** | 0,05 | 9,93 | 0,00 | 0,28 |
| A44 | 0,57** | 0,05 | 11,44 | 0,00 | 0,33 |
| A54 | 0,47** | 0,06 | 8,30 | 0,00 | 0,23 |
| **PCR BY** | | | | | |
| A2 | 0,36** | 0,07 | 5,42 | 0,00 | 0,13 |
| A10 | 0,29** | 0,06 | 4,58 | 0,00 | 0,09 |
| A41 | 0,57** | 0,05 | 12,52 | 0,00 | 0,33 |
| A45 | 0,57** | 0,05 | 11,41 | 0,00 | 0,33 |
| A34 | 0,57** | 0,05 | 11,43 | 0,00 | 0,32 |
| A19 | 0,47** | 0,06 | 8,44 | 0,00 | 0,22 |
| A24 | 0,46** | 0,06 | 8,24 | 0,00 | 0,21 |
| A29 | 0,49** | 0,05 | 9,14 | 0,00 | 0,24 |
| A17 | 0,64** | 0,05 | 13,33 | 0,00 | 0,41 |
| A31 | 0,54** | 0,05 | 10,31 | 0,00 | 0,29 |
| A8 | 0,52** | 0,05 | 9,67 | 0,00 | 0,27 |
| A37 | 0,18** | 0,07 | 2,51 | 0,01 | 0,03 |
| **DS BY** | | | | | |
| A9 | 0,44** | 0,077 | 5,73 | 0,00 | 0,20 |
| A52 | 0,55** | 0,078 | 7,03 | 0,00 | 0,21 |
| A42 | 0,51** | 0,075 | 6,81 | 0,00 | 0,27 |
| A32 | 0,50** | 0,077 | 6,52 | 0,00 | 0,24 |
| A20 | 0,51** | 0,078 | 6,60 | 0,00 | 0,25 |
| A53 | 0,62** | 0,072 | 8,55 | 0,00 | 0,15 |
| A25 | 0,49** | 0,076 | 6,39 | 0,00 | 0,26 |
| A12 | 0,46** | 0,076 | 6,06 | 0,00 | 0,30 |
| A39 | 0,39** | 0,082 | 4,70 | 0,00 | 0,38 |
| **AVA BY** | | | | | |
| A5 | 0,27** | 0,09 | 3,06 | 0,00 | 0,07 |
| A48 | 0,36** | 0,08 | 4,69 | 0,00 | 0,13 |
| A40 | 0,60** | 0,08 | 7,90 | 0,00 | 0,35 |
| A21 | 0,51** | 0,08 | 6,73 | 0,00 | 0,26 |
| A36 | 0,23** | 0,09 | 2,62 | 0,01 | 0,05 |
| A27 | 0,29** | 0,09 | 3,23 | 0,00 | 0,08 |
| A15 | 0,51** | 0,08 | 6,31 | 0,00 | 0,26 |

| | | | | | |
|---|---|---|---|---|---|
| **WISH BY** | | | | | |
| A51 | 0,56** | 0,07 | 7,66 | 0,00 | 0,31 |
| A46 | 0,61** | 0,07 | 9,22 | 0,00 | 0,37 |
| A33 | 0,64** | 0,06 | 10,77 | 0,00 | 0,41 |
| A11 | 0,53** | 0,07 | 7,43 | 0,00 | 0,28 |
| **SSS BY** | | | | | |
| A22 | 0,71** | 0,04 | 16,343 | 0,00 | 0,50 |
| A7 | 0,65** | 0,06 | 11,846 | 0,00 | 0,42 |
| A14 | 0,36** | 0,07 | 5,085 | 0,00 | 0,13 |
| A38 | 0,72** | 0,04 | 16,877 | 0,00 | 0,51 |
| A30 | 0,50** | 0,06 | 8,131 | 0,00 | 0,25 |
| A13 | 0,63** | 0,05 | 12,105 | 0,00 | 0,40 |
| A18 | 0,66** | 0,05 | 13,003 | 0,00 | 0,44 |
| A28 | 0,71** | 0,05 | 14,200 | 0,00 | 0,50 |
| A4 | 0,56** | 0,06 | 9,25 | 0,00 | 0,31 |
| **SCHI BY** | | | | | |
| B6 | 0,69** | 0,05 | 14,93 | 0,00 | 0,48 |
| B7 | 0,77** | 0,05 | 16,52 | 0,00 | 0,60 |
| B8 | 0,64** | 0,05 | 12,04 | 0,00 | 0,41 |
| B9 | 0,73** | 0,05 | 13,80 | 0,00 | 0,53 |
| B10 | 0,76** | 0,04 | 19,89 | 0,00 | 0,58 |
| B11 | 0,61** | 0,05 | 11,90 | 0,00 | 0,37 |
| B12 | 0,66** | 0,05 | 12,53 | 0,00 | 0,44 |
| B14 | 0,50** | 0,06 | 8,37 | 0,00 | 0,25 |
| **COMM BY** | | | | | |
| B16 | 0,77** | 0,04 | 20,27 | 0,00 | 0,60 |
| B18 | 0,74** | 0,04 | 16,76 | 0,00 | 0,55 |
| B19 | 0,78** | 0,04 | 18,48 | 0,00 | 0,61 |
| B20 | 0,73** | 0,05 | 16,09 | 0,00 | 0,53 |
| **HOME BY** | | | | | |
| B15 | 0,67** | 0,05 | 13,14 | 0,00 | 0,45 |
| B21 | 0,42** | 0,06 | 6,64 | 0,00 | 0,18 |
| B23 | 0,61** | 0,05 | 13,06 | 0,00 | 0,37 |
| B48 | 0,75** | 0,04 | 18,03 | 0,00 | 0,57 |
| B49 | 0,84** | 0,03 | 25,89 | 0,00 | 0,71 |
| B50 | 0,84** | 0,03 | 26,69 | 0,00 | 0,70 |
| B51 | 0,70** | 0,04 | 17,24 | 0,00 | 0,49 |
| B52 | 0,84** | 0,03 | 26,59 | 0,00 | 0,70 |
| B53 | 0,67** | 0,05 | 14,77 | 0,00 | 0,45 |
| B54 | 0,74** | 0,04 | 20,40 | 0,00 | 0,55 |
| B55 | 0,63** | 0,04 | 14,57 | 0,00 | 0,40 |
| B56 | 0,60** | 0,05 | 12,81 | 0,00 | 0,36 |
| **INT BY** | | | | | |
| B24 | 0,56** | 0,05 | 10,92 | 0,00 | 0,31 |
| B27 | 0,67** | 0,05 | 14,29 | 0,00 | 0,45 |
| B28 | 0,69** | 0,04 | 17,53 | 0,00 | 0,47 |
| B29 | 0,65** | 0,05 | 14,67 | 0,00 | 0,43 |
| B30 | 0,67** | 0,04 | 15,88 | 0,00 | 0,45 |
| B31 | 0,57** | 0,05 | 11,56 | 0,00 | 0,33 |
| B33 | 0,57** | 0,05 | 11,44 | 0,00 | 0,33 |

| | | | | | |
|---|---|---|---|---|---|
| B34 | 0,68** | 0,04 | 17,30 | 0,00 | 0,47 |
| B35 | 0,61** | 0,05 | 13,58 | 0,00 | 0,37 |
| B36 | 0,57** | 0,05 | 11,02 | 0,00 | 0,33 |
| B37 | 0,58** | 0,06 | 10,61 | 0,00 | 0,34 |
| B38 | 0,60** | 0,05 | 12,62 | 0,00 | 0,36 |
| B39 | 0,60** | 0,05 | 11,80 | 0,00 | 0,36 |
| B40 | 0,60** | 0,05 | 13,20 | 0,00 | 0,37 |
| B41 | 0,64** | 0,04 | 14,56 | 0,00 | 0,41 |
| **SCHCONN BY** | | | | | |
| B2 | 0,66** | 0,06 | 10,28 | 0,00 | 0,44 |
| B3 | 0,67** | 0,06 | 11,78 | 0,00 | 0,49 |
| B5 | 0,88** | 0,06 | 14,68 | 0,00 | 0,77 |
| **COPE BY** | | | | | |
| PFC | 0,94** | 0,04 | 26,90 | 0,00 | 0,88 |
| PCR | 0,95** | 0,04 | 26,94 | 0,00 | 0,90 |
| DS | 0,54** | 0,06 | 9,58 | 0,00 | 0,30 |
| AVA | 0,63** | 0,08 | 8,30 | 0,00 | 0,40 |
| WISH | 0,68** | 0,07 | 10,44 | 0,00 | 0,46 |
| SS | 0,66** | 0,04 | 15,20 | 0,00 | 0,43 |
| **SCH BY** | | | | | |
| SCHI | 0,96** | 0,04 | 23,91 | 0,00 | 0,92 |
| SCHCONN | 0,71** | 0,05 | 13,28 | 0,00 | 0,50 |
| **RES BY** | | | | | |
| SCH | 0,86** | 0,05 | 18,21 | 0,00 | 0,74 |
| COMM | 0,89** | 0,03 | 28,32 | 0,00 | 0,79 |
| HOME | 0,94** | 0,02 | 42,13 | 0,00 | 0,89 |
| INT | 0,92** | 0,02 | 46,39 | 0,00 | 0,85 |
| **COPE WITH** | | | | | |
| RES | 0,26** | 0,06 | 4,04 | 0,00 | - |
| **A29 WITH** | | | | | |
| A19 | 0,30** | 0,06 | 4,64 | 0,00 | - |

** p < 0 ,01

As seen in Table 4, a statistical significant but tenuous correlational relationship was found between the two constructs. Furthermore, the R-square values obtained for each of the factors were found to be of statistical significance. Problem Focused Coping (0,90) was found to explain the highest variance of the CCSC, whilst the School Individuals (0,92) factor explained the most with regard to the RYDM. With regard to the least percentage of variance, which can still be interpreted as high, Distraction Strategies (CCSC; 0,30) and School Connectedness (RYDM; 0.50) were found. In Figure 3 below, the statistical correlations are indicated between the scales as well as the subscales of the measures.




** p < 0 ,01

Figure 3: Statistical correlations of CCSC and RYDM factors

As seen from Figure 3 above, a significant but tenuous correlational relationship was found between coping and resilience, more so between the factors thereof. In essence model 1 supports a theoretically based argument that a relationship exists between coping behaviour and resilience processes. This agreement can be supported by the views of authors that conceptually link the two constructs. Firstly, Marais (2010) equates the two constructs by stating that both coping and resilience refer to the ability of the individual to adapt positively and develop favourably, despite being faced with difficult circumstances and extreme challenges. Secondly, Agaibi and Wilson (2005) coined the term resilient coping, which refers to the process of handling exceptional stressors and adversities as a multifaceted and complex phenomenon, characterized by a set of complex human behaviours by the individual. Finally, Richardson (2002) sees resilience as the process of coping with stressors and adverse conditions in such a manner that could lead to resilient characteristics.

## Discussion

This study employed a quantitative investigation into the nature of coping behaviour and resilience processes, as well as the relationship between these two constructs within a middle-childhood sample, residing in an at-risk, deprived socio-economic community.

As far as the nature of these constructs is concerned, a literature based discussion of each construct was presented. Coping was defined as the individual's response to a certain stressor, whether it be psychological, emotional, or physical, in order to diminish the psychological burden thereof (Snyder & Dinoff, 1999). Resilience refers to the ability of the child to adapt positively, and achieve expected developmental outcomes, despite being faced with severe adversity or risk (West.Ed, 2002). Coping was found to consist of a six-factor structure and resilience of a five-factor structure, as described earlier. As for coping, the factors can be labelled: (1) Problem Focused Coping; (2) Positive Cognitive Restructuring; (3) Distraction Strategies; (4) Avoidance Strategies; (5) Wishful Thinking; and finally (6) Support Seeking Strategies. Resilience consisted of five-factors, namely: (1) School Individuals; (2) Community Environment; (3) Home Environment; (4) Internal Assets; and lastly (5) School Connectedness. This measurement model was used as the baseline model in order to test other models.

The literature discussed in this study provided a theoretical basis from which one would expect a significant correlational relationship between the constructs coping and resilience. Aspects such as social support and other internal aspects, as well as certain external aspects would be likely to correlate positively across the two measuring instruments,

as found by de Boo and Wicherts (2009) as well as Kliewer and Sandler (1993) both using the CCSC measurement of coping. However, no statistically significant correlational relationships were found among the measured constructs.

Although the reasons for the tenuous correlational relationship between the constructs are not clear, attempts will be made to explain it. Firstly it could be speculated that the results obtained from the CCSC and the RYDM could be influenced by the fact that the measurements used were not standardized for use with South African children, although they were found valid for use in this research group in the original study of Marais (2010). Cultural equivalence could be lacking in the responses of participants given to the questions, which could indicate that they understood and interpreted the measured concepts differently from what is measured or intended by the questions. Thus, the socio-cultural context, in which the participants of this study operated, i.e. their emic perspective, was not considered in assessing their competence regarding coping behaviour and resilient processes (Clauss-Ehlers, 2008; Mahoney & Bergman, 2002). Unfortunately such contextual sensitivity was not given enough consideration in this study of an already existing data-set and an over-optimistic interest in the two theoretical constructs guided the investigation, which led to incorrect assumptions concerning the correlational relationships among scales and subscales.

Secondly, the exceptionally high reliability coefficients of $\rho = 0{,}98$ for both the CCSC and the RYDM could indicate that both these measures obtained such similarity in the responses of the participants that the variance was low. One even wonders about the possibility of redundancy of items and due to the very high reliability indices (Clark & Watson, 1995). It is also possible that these scales were confounding of each other which mean that there was such similarity between their variables for this group of participants that their independent contributions to a correlational relationship could not be determined (Colman, 2006).

As far as the measurement model identified from the analysis of the CCSC and the RYDM is concerned, the view of Folkman and Moskowitz (2004) comes to mind that:

> Coping is a complex multidimensional process that is sensitive to the demands and resources of the environment, to personality dispositions that influence the appraisal of the stressors and to the appraisal of the individual's available resources (p. 02).

Thus it seems feasible that the CCSC as a measure of coping behaviours (dispositional coping) in children, could be expanded to include aspects of resilient or

resilience promoting behaviour, such as the socio-ecological assets represented by the RYDM.

Skinner and Zimmer-Gembeck (2012) present convincing arguments for the expansion of both the coping and resilience frameworks to include, amongst others, aspects of both constructs. They present a model depicting coping as a multi-level adaptive system including various developmental processes and culminating in adaptive adjustment or resilience. They argue in favour of the multi-dimensional nature of adaptive processes including both coping and resilient features (also see Tugade, 2012; Zautra & Reich, 2012).

Litt, Tennan, and Affleck (2012) call for the broadening of the operationalization of the coping construct. These authors argue that coping; can either by measured as trait or dispositional characteristics, which traditionally indicated how people usually respond when under stress. Although theoretically useful, the dispositional view of coping offers little information about what a person will actually do during stressful experiences. Litt and colleagues use the interesting concept "coping signatures" (2012, p. 395) to describe coping behaviours that could be operationalized. They conclude that coping measures should reflect the true spirit of Folkman and Lazarus (1985), as well as others, that "coping is transactional in that the person and the environment are viewed as being in dynamic mutually reciprocal bio-directional relationships" (p. 572).

Finally, de Boo and Wicherts (2009) in their interesting study using the CCSC as a measure for cognitive and behavioural coping, also included a measure of social behaviour or competence (much like the RYDM). They argue that social competence is a broader concept of social functioning that includes social behaviour, and view social competence as an important variable that influences children's coping responses (see Kliewer & Sandler, 1993). Furthermore, de Boo and Wicherts (2009) found significant positive relationships between adequate social behaviour and coping strategies of the CCSC (unlike the current study in which only a tenuous relationship was found). They argue that supportive social resources (as measured by the RYDM) guided children to regulate their behaviour and emotions during stress, to be flexible in the use of coping strategies and to apply a wide range of such strategies. Taylor (2011) found supporting results and more in her powerful work. Based on their findings and in line with developmental and coping theories, de Boo and Wicherts (2009) call for a theoretical

framework and operationalized model of coping in childhood that includes the use of socio-ecological resources, such as described above.

In the above discussion the findings of this study were considered and explained. A statistically significant relationship between the measurements of coping and resilience was theoretically expected, but only a tenuous relationship was found, hence the speculated reasons for that were presented. A measurement model with good statistical fit, incorporating features of both the coping (CCSC) and resilience (RYDM) models used in this research was identified, indicating the possible extension of the CCSC to include resilient processes of the RYDM. These processes of resilience will draw upon the conceptualization proposed by Ungar (2011a; 2011b) that one needs to focus equally on the environment as well as internal strengths and abilities of the individual. Hence a combination of internal strengths, as measured by the CCSC, coupled with environmental assets of the RYDM, is proposed by the researcher. Theoretical arguments supporting such an operationalized extension of the coping construct were presented. The limitations of this study will furthermore be described.

## Limitations of the study

Since the data was collected in 2010, no follow-up consultations were possible for this particular sample, due to the fact that participants have moved on (e.g. left the School in which the data was collected) and no particulars exist. Due to the use of secondary data, the lack of contact between the researcher and the participants/context may be seen as a possible limitation. The group of investigation may be viewed as relatively small ($N$=262) and a larger sample and the possible participation of more schools in the area might have been more beneficial to the research.

Neither the CCSC nor the RYDM are standardised measures within a South African context. Furthermore, information regarding the CCSC as well as the RYDM is relatively scarce within a South African context, or African context for that matter. No previous research could be traced in which the authors report the factor structure of either the CCSC or the RYDM. The proposed questionnaires were translated from English to Afrikaans, in order to reflect the language of the participants. This translation process may have overshadowed contextual determinants, which induced misunderstandings on behalf of the participants regarding the responses to the questions provided.

## Contributions of the study

This study will contribute to the knowledge base of Psychology, particularly with regard the coping behaviours and resilience processes of middle-childhood participants, more specifically those residing in high-risk communities around South Africa. This study will also aid practitioners and clinicians in understanding the coping strategies mostly employed by youth participants when faced with risk and adversity, and subsequently shed light on the resilience processes involved. A measurement model regarding coping behaviours could be conceptualised from the results of this study.

## Recommendations for future research

Future studies regarding coping and resilience may need to focus on longitudinal outcomes or studies that vary across the developmental stages of the participants. Follow-up studies on the same participants will be able to provide further insight into how these children continue to deal with adversity they are faced with on a daily basis. Further studies exploring the relationship between the two constructs are required. The quantitative development as well as validation of standardised coping and resilience measures within a South African context, as well as language-, culture-specific measures is a definite opportunity for future research (Friborg et al., 2005).

## Conclusion

This study focused on the nature of coping and resilience, as well as the relationship between these two constructs within a South African youth sample. The CCSC, in conjunction with the RYDM, was administered in order to collect quantitative data from 262 middle-childhood participants residing on the borders of the Gauteng Province. Statistical analysis was conducted by means of IBM SPSS Statistics 21 (IBM Corporation, 2012) and Mplus 7.11 (Muthén & Muthén, 2012), in order to answer the research question identified. Statistical analyses such as means, standard deviations (SD), reliability coefficients (ρ), Confirmatory Factor Analysis (CFA), as well as Structural Equation Modelling (SEM) guided the results section of this study. Reliability coefficients (ρ) were found to be very high, and thus acceptable for the measuring instruments as well as the subscales thereof.

An eleven-factor hypothesized measurement model proved to be the best statistical fit to the data, with coping consisting of six factors and subsequently resilience of five factors. Overall five measurement models were statistically tested in order to calculate statistical fit with the data-set. However, a significant but tenuous relationship was found between the two

constructs. Several speculations were discussed for the lack of correlations between coping and resilience, namely (1) that both are very complex constructs; (2) cultural equivalence was not determined; (3) the conceptual similarity observed between the CCSC and the RYDM, as indicated by a ρ value of 0,98 (4) the expansion of coping as a construct through the inclusion of behavioural and social aspects, as taken from the RYDM was proposed. Finally, a coping measurement model could be conceptualized from the statistical model identified in this study, consisting of the CCSC factors while merging some aspects of resilience, especially the socio-ecological aspects proposed by Ungar (2011a; 2011b), amongst others.

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