School-Related Stress and Outcomes among Students with Health Impairments in Addis Ababa: The Moderating Role of Psychological Capital

By:

Birhanu Nebiyou

Doctoral Dissertation

June 2020

Addis Ababa, Ethiopia

School-Related Stress and Outcomes among Students with Health Impairments in Addis Ababa: The Moderating Role of Psychological Capital

By:

Birhanu Nebiyou Muluneh

A Dissertation Submitted to the Department of Special Needs Education of Addis Ababa University in Partial Fulfillment of the Reqirements for the Degree of Doctor of Philosophy in Special Needs Education

Supervisor:

Professor R. Sreevalsa Kumar

Department of Special Needs Education

College of Education and Behavioral Studies

Addis Ababa University

June 2020

Declaration

I, Birhanu Nebiyou Muluneh, declare that this doctoral dissertation entitled "*School-Related Stress and Outcomes among Students with Health Impairments in Addis Ababa: the Moderating Role of Psychological Capital"* is my own original work and all sources used in this research have been appropriately cited.

Birhanu Nebiyou [signature] February 5, 2020

Name of the student Signature Date

Certificate

I, Dr. R. Sreevalsa Kumar, Associate Professor of Psychology at Chinmaya University, Kerala, India, hereby certify that the dissertation entitled "*School-Related Stress and Outcomes among Students with Health Impairmentin in Addis Ababa: the Moderating Role of Psychological Capital"* is an original research accomplished by Birhanu Nebiyou Muluneh for the partial fulfillment of the degree of Doctor of Philosophy in Special Needs Education under my guidance and supervision. I approve this dissertation for submission to final evaluation.

Dissertation Supervisor Name Signature Date

Dr. R. Sreevalsa Kumar [signature] 5.2.20 05/02/2020

Addis Ababa University

College of Education and Behavioral Studies

Department of Special Needs Education

School-Related Stress and Outcomes among Students with Health Impairments in Addis Ababa: The Moderating Role of Psychological Capital

Birhanu Nebiyou Muluneh

Approval of Board of Examiners

1. Chairperson

Name	Signature	Date
Daniel Desta		29.06.2020

2. Supervisor

Name	Signature	Date
Prof. R. Sreevalsa Kumar	23.6.20	23-06-2020

3. Internal Examiner

Name	Signature	Date
Tenu Tavdie		29/06/2020

4. External Examiner

Name	Signature	Date
Dr. Yemataw Wondie		29/06/2020

Acknowledgements

First, I would like to thank my supervisor, Professor R.S. Kumar, for his continual support, excellent guidance and constant encourageent through the entire process of the study. His expertise, insight, and timely feedback were hugely invaluable to me. This dissertation could not have been completed without his enormous support and assistance.

My heartfelt gratitude also goes to Dr. Belay Hagos (Associate Professor), Professor Belay Tefera and Professor Tirussew Teferra (Laureate in Education) for their valuable remarks across different phases of this research project. Their tremendous inputs have greatly contributed to develop and enrich the study. I am immensely grateful to my friends, Tekalign Deksissa and Yigermal Nigussie, for providing me unreserved support and encouragement throughout my study. My sincere thanks also go to to my colleagues, students in my PhD cohort, and the many kind friends and well-wishers who have supported and encouraged me all the way through the demanding times of my PhD study.

Last but not least, I would like to express my deepest thanks to all my family members for their huge support and encouragement throughout the course of this study. Most importantly, I'm very much thankful to my mom, Melkam Agidew, for her kindhearted support and prayer throughout my life. My special thanks and appreciation go to my wife, Tigist Faris, for her immense emotional support and great sacrifices during the most difficult times through this long journey of my PhD study. I'm infinitely grateful to my dearest children, Marcon and Fidel, for being a wonderful source of joy and inspiration in my whole life.

Table of Contents

List of Tables

List of Figures

Acronyms and Abbreviations

AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
CR	Construct Reliability
DM	Diabetes Mellitus
HD	Heart Disease
IDEA	Individuals with Disabilities Education Act
MANOVA	Multivariate Analysis of Variance
PsyCap	Psychological Capital
PCQ	Psychological Capital Questionnaire
SDQ	Strengths and Difficulties Questionnnaire
SEM	Structural Equation Modeling
SPSS	Statistical Package for Social Sciences
SWHIs	Students with Health Impairements
SWOHIs	Students without Health Impairements
TASH	Tikur Anbessa Specialized Hospital
TDS	Total Difficulties Score

Abstract

The current study was carried out to investigate the association of school-related stress and psychological capital with academic achievement and behavior problems in students with health impairements as well as the the possible moderating influence of psychological capital in the school-related stress and outcomes relationships. In addition, the study examined differences in school-related stress, psychological capital, academic achievement and behavioral problems between students with and without health impairments. The study involved 233 students with health impairments and 250 students without health impairements in Addis Ababa. Instruments used for the study include the Demographic Questionnaire, Perceived School-Related Stress Scale, Psychological Capital Questionnaire, Strengths and Difficulties Questionnaire and school record reviews. Descriptive statistics, structural equation modeling, multi-group structural equation modeling, one-way MANOVA and independent samples t-test were utilized to anlyze the data. Results revealed that school-related stress was significantly and negatively associated with academic achievement and positively with behavior problems. Psycholgical capital was significantly and positively associated with academic achievement and negatively with behavior problems. Higher levels of psychological capital had a significant moderating role in the relationships between school related stress and both outcomes of academic achievement and behavior problems. The results also indicated that students with health impairments had higher school-related stress, lower psychological capital, lesser academic achievement and greater behavior problems compared to students without health impairments. Conclusions, implications and directions for future research are provided.

Keywords: *school-related stress, psychological capital, academic achievement, behavior problems, moderating role, students with health impairments.*

Chapter One

Introduction

This chapter depicts the background, statement of the problem, objectives, operational definition of variables, significance, delimitations and theoretical and conceptual frameworks of the sudy.

1.1 Backgroud of the Study

In recent years, school-related stress has received growing interest among researchers. This occurs mainly due to the rising incidence of school-related stress and its adverse effects on students' academic performance, behavior and school adjustment (Alva & Reyes 1999; Dunne et al., 2010; Hussain, Kumar, & Husain, 2008). Too much school-related stress can have detrimental impact on mental and physical functioning of students (Hjern, Alfven, & Östberg, 2008).

In this study, stress is conceptualized based on the transactional theory of stress (Lazarus & Folkman, 1984). According to this theory, stress appears to emerge from the interaction between the person and his/her environment. An individual could experience stress when he/she considers environmental demands as exceeding his/her capacity to cope. School-related stress, the focus of the present study, is defined as a perceived pressure resulted from school-related demands and activities that surpass one's adaptive resources (Haugland, Wold, & Torsheim, 2013).

School children and adolescents expend considerable part of the day in school and what happens in school has a large stake on them. Several studies have indicated that school-related concerns are major sources of stress in school children and adolescents (e.g., Huan, See, Ang, & Har, 2008; Kouzma & Kennedy, 2004; Lohman & Jarvis, 2000). In the school context, students face stressful events such as schoolwork demands, worries about school achievement, difficulties in peer relationships and conflict with teachers and parents

concerning effort and achievement at school (Hjern et al., 2008; Murberg & Bru, 2004). The school setting is, therefore, an ideal location to implement intervention aimed at addressing stress in students (Eccles & Roser, 2011). If left unaddressed, stress related to school activities could potentially impair students future career development plans and productive passage to adulthood (Eccles, Brown, & Templeton, 2008; Mortimer, Zimmer-Gembeck, Holmes, & Shanahan, 2002)

Students with health impairments (SWHIs) are one of the designated groups legally mandated to get the same learning opportunities in education. Health impairment is one category of disabilities listed under the Individual with Disabilities Education Act (IDEA) of 2004. According to IDEA, health impairment refers to having restricted attentiveness and preparedness pertaining to the academic setting as a result of chronic illneses that could influence performance in education detrimentally (Farrell, 2008). The law stated under IDEA allows SWHIs due to chronic health problems like students with diabetes mellitus and heart disease to receive accommodations and special education services. This is important because many students with these health disorders experience extreme fatigue, poor endurance, trouble paying attention in class, peer relationship problems, and encounter difficulties in following teacher instructions and doing effectively on examinations (Thies, 1999).

The numbers of SWHIs accessing the general education classroom have enormously increased over recent years (Nabors & Lehmkuhl, 2004). This is mainly due to improvements in medicine and surgery that have enabled children and adolescents having chronic illnesses to live longer and prosper well into adulthood (Halfon & Newacheck, 2010). Health conditions previously considered life threatening are now treated as chronic illnesses. For that reason, many more children with chronic health conditions have started to join schools. Sexson and Madan-Swain (1995) reported that many teachers and other school personnel are not well aware of appropriate ways of helping this growing student population with varied

learning needs. As a result, schools have met increasing challenges of addressing the different educational requirements of SWHIs (Shiu, 2001). Thus, it is imperative to examine school-related problems of SWHIs to develop school programs aimed to support and facilitate successful functioning of this growing student population (Sexson & Madan-Swain, 1995).

SWHIs may experience increased levels of school-related stress in comparison to students without health impairments (SWOHIs) (Seiffge-Krenke, Weidemann, Fentner, Aegenheister, & Poeblau, 2001). This is in part due to additional stressors that encountered school children and adolescents that are uniquely specific to their chronic health condition and related consequences. Some of the most familiar health-related stressors faced by SWHIs include recurrent pain, difficulties to perform regular activities and life roles, uncertain prognosis, restrictive treatment regimens, frequent medical visits and hospitalizations (Boekaerts & Roder, 1999). Chronic health conditions may also present stressors that are related to loss of life freedoms associated with poor health and fear related to the increased likelihood of death (Falvo, 1999). Moreover, they often do face worrisome trouble of keeping a balance between demands of managing their chronic health condition and schooling requirements (Thies, 1999). Thus, SWHIs may confront a more difficult situation in learning and are more likely to expereince elevated levels of stress than their classmates without health impairments.

SWHIs are also subjected to encounter more academic difficulty than SWOHIs. For instance, Fowler, Johnson, and Atkinson (1985) revealed that SWHIs had lower examination scores compared with SWOHIs. Pinquart and Tuebert's (2011) meta-analysis study showed that SWHIs perform poorly in academic activities such as writing and mathematics than their peers without health impairements. SWHIs have also a grater likelihood of falling behind in academicwork, repeating grades and permanently leaving school (Shaw, Gomes, Polotskaia, & Jankowska, 2015). SWHIs often miss more school than their classmates associated with

illness symptoms and medical care (Chan, Piira, & Betts; Gorodzinsky, Hainsworth, & Weisman, 2011; Thies, 1999). Moreover, Shaw and McCabe (2008) indicated that school attendance problems could reduce time spent on learning and socializing with peers and may contribute to poor academic achievement.

Loads of studies also demonstrated that specific groups of SWHIs such as students with diabetes mellitus (DM) (Gath, Smith & Baum, 1980; Holmes, Dunlap, Chen, & Cornwell, 1992; Meo et al., 2013) and heart disease (HD) (Uzark et al., 2008; Wray & Radley-Smith, 2010) were more likely to perform poorly in academicwork than their peers without health impairments. For example, a meta-analysis concluded that students with DM performed significantly lower on multiple standardized achievement measures including reading and writing when compared to students without DM (Naguib, Kulinskaya, Lomax, & garralda, 2009). Shillingford et al. (2008) indicated that students with HD are at an elevated risk to reduced academic achievement in comparison to same-aged peers without health impairements.

In addition to academic difficulties, SWHIs may possibly exhibit increased behavior difficulties in comparison to SWOHIs. Several empirical studies showed that SWHIs displayed more behavior problems than SWOHIs (e.g., Boekaerts & Roder, 1999; Hysing, Elgen, Gillberg, & Lundervold, 2009; Zashikhina & Hagglof, 2007). Furthermore, Pinquart and Shen (2011) reported that SWHIs showed higher rates of internalizing than externalizing problems. SWHIs have been also found at increased risk for peer victimization and developing sense of disaffection from schoolmates (La Greca, 1990). Compared to SWOHIs, specific illness groups such as students with DM (e.g., McCarthy, Lindgren, Mengeling, Tsalikian, & Engvall, 2002) and HD (e.g., Elisabeth et al., 1993) showed elevated behavior problems. Irwin and Elam (2011) revealed that many teachers have no adequate knowledge

of managing SWHIs in the classroom. This may further exacerbate the school difficulties of SWHIs.

SWHIs may also be prone to decreased levels of positive psychological resources. For instance, a study found that SWHIs have reduced positive psychological capacities including lesser self-esteem and self-concept (Lavigne & Faier-Routman, 1992) in comparison to peers without health impairments. SWHIs also showed reduced attainments in positive outcomes such as life satisfaction (Santos et al., 2013), psychological adjustment (Cadman, Boyle, Szatmari, & Offord, 1987; Geist, 2003) and psychological well-being (Santos, de Matos, Simoes, & Machado, 2015) compared to peers without health impairments. Though, there exist a few studies that examine differences in positive personal resources of students with and without health impairments, comparative studies between the two sub-groups of students with respect to psychological capital are lacking.

In Ethiopia, previous studies conducted on children and adolescents having chronic health conditions largely focussed to risk factors and complications of the illness (e.g., Alemseged et al., 2012; Misganaw, Haile Mariam, Ali & Araya, 2014; Muluneh et al., 2012). Although being relevant for prevention and management of such illnesses, these lines of studies may be less relevant for the school-related domains of life in students with these conditions. Nevertheless, to date, less attention is paid to the school difficulties of SWHIs in school context. The paucity of research on school-related problems of SWHIs might have contributed to the limited attention aimed at improving support services deliverd to SWHIs in the school environement. Therefore, a research that assesses the various dimensions of school functioning reflected in school-related stress, psychological capital, academic achievement and behavior problems in SWHIs is needed in the Ethiopia context.

School-related stress has been shown to be associated inversely with a host of school-related outcomes such as students' academic achievement (Kaplan, Liu, & Kaplan, 2005),

motivation in learning (Eccles & Midgley, 1989), academic engagement (Phelan, Yu, & Davidson, 1994) and school completion (Hess & Copeland, 2001). School-related stress has been also positively associated with behavior problems (Bjorkman, 2007; Windle & Windle, 1996), mental health problems (Suldo, Shaunessy, & Hardest, 2008) and poor physical health (Natvig, Albrektsen, Anderssen, & Qvarnstrom, 1999; Torsheim & Wold, 2001). In sum, school-related stress of students tends to have a harmful impact on various school outcomes. However, studies on the relationships of school-related stress with academic achievement and behavior problems among SWHIs are scant.

In Ethiopia, there is dearth of research on the associations between school-related stress and outcomes. The available few studies explored stress in general samples of school adolescents. For example, Mulatu (1997) indicated that school-related stress had significant and negative association with academic achievement and positive association with behavior problems. In addition, Demeke (2015) revealed that school-related stress significantly predicted increased depressive symptoms in school adolescents. However, research focusing on the link between stress and outcomes among SWHIs in school context seem to be overlooked. Therefore, the study aimed to examine school-related stress and its relationships with academic achievement and behavior problems in SWHIs.

Educational researchers and practitioners have focused formerly on the deficit model, in particular the problems and the weaknesses of the students, while neglecting their positive strengths and qualities (Larson, 2000). This has engulfed the literature worldwide focussing more on the incapabilities and limitations in contrast to positive attributes and personal resources (Lopez & Snyder, 2009). Similarly, researches on adolescent students in Ethiopia, emphasizes more on their deficits than their strengths such as psychosocial and educational problems, disciplinary problems, drug use and abuse and sexual abuse and neglect (Belay &

Yekoyealem, 2015). Furthermore, Belay and Yekoyealem (2015) pointed out that the strengths and developmental assets of adolescents have been seriously overlooked.

In the last two decades, the thriving of positive psychology has changed the focus from fixing weaknesses to building competencies (Seligman & Csikszentmihalyi, 2000). Therefore, the research emphasis shifted from the deficit model towards strengths-based approach to stress. Thus, it appears timely to look at the role of positive resources rather than deficits in dealing with stresss. One such positive psychological resource is psychological capital (Luthans, Youssef, & Avolio, 2007).

Psychological capital (PsyCap) has emerged fom positive organizational behavior (Luthans et al., 2007; Nelson & Cooper, 2007), which is largely originated from positive psycholgy theory and research (Peterson & Seligman, 2004). PsyCap is an individual's positive psychological state of development that comprises of self-efficay, hope, resilience and optimism (Luthans, et al., 2007). Each of the four positive positive capacities fulfill the criteria for positive organizational behavior of being state like and open to development, being grounded in theory and research with valid measures and have a beneficial influence on attitudes, behaviors and performance (Luthans, 2002a; Luthans et al., 2007). Previous studies suggested that individual's PsyCap levels can be promoted with providing short-term training programs (Luthans, Avey, Avolio, Norman, & Combs, 2006) as well as online sessions (Luthans, Avey, & Patera, 2008). PsyCap intervention has been also proved to improve employee's performance (Luthans, Avey, Avolio, & Peterson, 2010).

Over the past few years, abundant researches have studied the link between PsyCap and employees behavior attitudes and performance (Avey, Luthans, & Youssef, 2010) Specifically, PsyCap has been shown to positively influence job performance, commitment, satisfaction, and citizinship behaviors (Avey, Reichard, Luthans, & Mhatre, 2011), mastery orientation and innovation (Luthans, Youssef & Rawski, 2011), psychological well-being

(Shakarami, Davarniya, Zahrakar, & Hosseini, 2014), and subjective pleasure and life satisfaction (Culbertson, Fullagar, & Mills, 2010). PsyCap has also been demonstrated to be strongly and inversely related to unfavoarable oraganizational outcomes such as job stress, anxiety, deviance, and distrust (Avey et al., 2011), and turnover intentions and job search behaviors (Avey, Luthans & Jensen, 2009), burnout (Cheung, Tang, & Tang, 2011) and incivility (Roberts, Scherer, & Bowyer, 2011).

In recent years, PsyCap is receiving considerable attention in educational settings and researchers have begun to show increasing interest to study its impact on student outcomes. For example, a study by Tjakraatmadja and Febriansyah (2007) indicated that PsyCap had a significant positive relationship with academic achievement. Similarly, Luthans, Luthans and Jensen (2012) investigated the association of PsyCap with academic performance and concluded that PsyCap was a significant predictor of students' grade point average. Moreover, a study has showed that students who scored higher academic achievement had significantly higher levels of PsyCap than students who achieved lower academic result (Jafri, 2013). Jafri (2013) asserted that students who possess higher levels of PsyCap have more belief in their abilities, more determination, better execution of tasks with appropriate plan, a strong capacity to cope with challenging conditions and a positive view of themselves and the world which would enable them to perform well academically. Research also indicated that PsyCap has been related negatively to behavior problems in students (Wang, Zheng, & Cao, 2014).

Prior studies have investigated several physical, social, and psychological factors that are considered to be useful in buffering against the negative impacts of stress on a range of student outcomes. For instance, social support (Natvig et al., 1999), learned resourcefulness (Akgun & Ciarrochi, 2003) and physical exercise (Haugland et al., 2003) were reported to moderate the harmful influence of stress and improve school-related outcomes in general

student populations. However, there exist scarce researches focused on moderating factors of stress in SWHIs.

Stress moderating factors for SWHIs are particularly important as SWHIs may face many challenges in school context. The recently identified core construct of PsyCap is theoretically thought to be beneficial to combating stress (Avey et al., 2009). It may potentially provide individuals with a necessary repertoire of positive psychological capacitiies to better cope with stress. PsyCap has been shown to be a significant moderator in the relationships between work-related stress and outcomes among employees in work environments (Abbas, Raja, Darr, & Bouckenooghe, 2014; Cheung et al., 2011; Roberts et al., 2011).

Previous empirical investigations have also indicated that the components of PsyCap operating as a moderator protecting the students against the harmful impact of school-related stress on student outcomes. For example Natvig et al. (1999) found that self-efficacy had moderated the connection between school-related stress and psychosomatic feelings among Norwegian students. A research has also demonstrated that hope played a moderating role in the associations of stressful situations with life satisfaction and behavior problems in school adolescents (Valle, Huebner, & Suldo, 2006). Similarly, Optimism moderated the link between daily hassles and psychological well-being in South Korean primary school students (Noh & Shin, 2014). Finally, García-Izquierdoa, Ríos-Risquezb, Carrillo-Garcíab, and Sabuco-Tebard (2014) revealed the significant buffering impact of resilience in the relations of emotional exhaustion and psychological-well-being of university students. Accordingly, the synergistic effect of each component of psychological capacities of students may essentially have moderating function in buffering against the adverse consequence of school-related stress on school-related outcomes.

So far, a few studies have been conducted on the moderating influence of the combined positive psychological capacities represented as the core construct of PsyCap in the relationships between stress and school outcomes of students. In one available recently published study, the potential moderating effect of the construct of PsyCap in the the relationship between stress and academic achievement on general school students has been examined in India (Gautam & Pradhan, 2018). However, studies examining the stress moderating effect of PsyCap as a core construct on school-related outcomes of SWHIs are lacking. Thus, this study aimed to examine the association between school-related stress and outcomes (i.e., academic and behavior outcomes), as well as the potential moderating role of PsyCap in the school-related stress and outcomes relationships among SWHIs including students with DM and HD in Addis Ababa, Ethiopia.

1.2 Statement of the Problem

SWHIs are exposed to a number of stressors ranging from the worrying demands of their schoolwork to challenges in managing interpersonal relations in the school setting. The rising trend of school-related stress among students in the last few years has become a growing worldwide concern for educators, parents, and mental health professionals (Hjern et al., 2008; Huan et al., 2008; Lee & Larson, 2000; McAndrew, Akande, Turner, & Sharma, 1998; Moksnes, Espnes, & Haugan, 2014). In Ethiopia, studies on stress have received very little attention. The handfuls of studies that explored students stress in the school context (e.g., Demeke, 2015; Mulatu, 1997) have focused on general samples of school students and little is documented about the school-related concerns of SWHIs. Thus, this study tried to investigate school-related stress of SWHIs in the Ethiopian context.

Despite the heightened concerns of reduced school functioning in SWHIs, studies comparing school functioning reflected in school-related stress, PsyCap, academic achievement and behavior problems of students with and without health impairements are

limited. In Ethiopia, the lack of available nationwide or population based data on normative rates of school-related stress, behavior problems and other indicators of school functioning would make it difficult to interpret the results and figure out the degree of difficulties in school performance among SWHIs. It is, therefore, essential to examine differences in school-related stress, PsyCap, academic achievement and behavior problems between students with and without health impairments to identify the extent of the problems in this at risk subgroup of students and provide direction for designing school-based intervention programs.

The link between school-related stress and outcomes of academic achievement and behavior problems among general samples of students has been demonstrated in many studies (e.g., Bjorkman, 2007; Dunne et al, 2010; Windle & Windle, 1996). However, less emphasis has been devoted thus far to the consequence of school-related stress on academic achievement and behavior problems of SWHIs. Thus, the study aimed to examine the relationship between school-related stress and academic achievement and behavior problems in SWHIs.

The core construct of PsyCap has considerably more influencing power than its individual dimensions of self-efficay, hope, resilience and optimism. Few studies have examined the relationship between PsyCap and academic achievement in a university context (e.g., Luthans et al., 2012). However, there is a lack of research addressing the relationships of PsyCap as a higher order construct and school-related outcomes in the school setting. Therefore, the study also considered to address the association of PsyCap and school outcomes of academic achievement and behavior problems in SWHIs.

The moderating roles of PsyCap in the association between job stress and work-related outcomes among employees in organizations have been well-established (e.g., Abbas, et al., 2014; Cheung et al., 2011; Roberts et al., 2011). Although few studies exmined the

moderating role of PsyCap in general samples of highschool students, studies on the stress buffering role of PsyCap in SWHIs, a group facing increased stressors in school are lacking. Therefore, this research intended to examine the moderating role of PsyCap in the relationship between school-related stress and outcomes of academic achievement and behavior problems among SWHIs in the Ethiopian context. Consequently, it is expected that the study could offer insight for seeking a more positive understanding of SWHIs and illustrates the necessity of taking a strengths-based approach in working with and supporting these students. Thus, the study attempted to address the following research questions:

- Is there significant relationship between school-related stress and school-related outcomes (i.e., academic achievement and behavior problems) among SWHIs?
- Is there significant relationship between PsyCap and school-related outcomes among SWHIs?
- Does PsyCap have a significant moderating role in the relationships between school-related stress and outcomes of academic achievement and behavior problems among SWHIs? That is, does the relationship between school-related stress and outcomes (i.e., academic achievement and behavior problems) differ significantly for low levels and high levels of PsyCap groups of SWHIs?
- Are there significant differences in school-related stress, PsyCap, academic achievement and behavior problems between students with and without health impairments?

1.3 Objectives of the Study

The general objective of the study was to investigate the association between school-related stress and outcomes (i.e., academic achievement and behavior problems) whilst examining the role of PsyCap as a moderator in the relationships between school-related

stress and outcomes among SWHIs in Addis Ababa. More specifically, the study was conducted to address the following research objectives:

- To examine whether school-related stress is significantly associated with school-related outcomes (i.e., academic achievement and behavior problems) among SWHIs.
- To examine whether PsyCap is significantly associated with school-related outcomes among SWHIs.
- To examine whether PsyCap significantly moderates the relationships between school-related stress and outcomes of academic achievement and behavior problems among SWHIs.
- To examine whether school-related stress, PsyCap, academic achievement and behavior problems significantly differ between students with and without health impairments.

1.4 Operational Definitions of Variables

- *School-related stress*- refers to the subjective experience of pressure by students in relation to the school activites including conflicts with peers, excessive schoolwork , fear of failing in tests and exams and conflicts with parents as measured by the adapted scale of the Perceived School-Related stress scale (Murberg & Bru, 2004)
- *Psychological Capital*- refers to a person's positive psychological resources characterized by a combination of self-efficacy, hope, resilience and optimism as measured by the adapted instrument of the 24 items Psychological Capital Questionnaire (PCQ-24) (Luthans, Avolio, Avey & Norman, 2007).
- *Academic achievement*- refers to students' average marks of all subjects of a semester obtained from school records.
- *Behavior problems*- refer to a range of problem behaviors manifested by students that involve emotional symptoms, hyperactivity, conduct problems and peer problems as

measured by the adapted measure of the Total Diificulties Scale of the Strengths and Difficulties Questionnaire (Goodman, Mltzer & Bailey, 1998)

1.5 Significance of the Study

Results from the present study are anticipated to provide valuable contribution for knowledge, policy and practice. Regarding to knowledge, the study would add to the literature new insights on differences in levels of school-related stress, PsyCap, academic achievement and behavior problems between students with and without health impairments. Findings of the study may also expand the existing knowledge in the relationships between school-related stress and school-related outcomes, as indicated by both academic achievement and behavior problems using sample of SWHIs. The results of the study would provide useful information for school administrators, special needs educators, counselors, and parents about the impact of school-related stress on school-related outcomes of SWHIs. Moreover, an empirical investigation of PsyCap to reduce and or reverse (i.e., moderating role) negative effects of possible influence of school-related stress on school-related outcomes would offer a potentially viable approach for supporting SWHIs in schools. Thus, an exploration of PsyCap may be helpful in determining why some SWHIs may feel overwhelmed, while others thrive, in reaction to demands and challenges of school life. Finally, the results of this study can ascertain future research directions to researchers in this area.

The findings of the study may also help practitioners in the school setting to pay relatively greater attention to school difficulties of SWHIs and develop specific stress prevention and intervention programs. The result could also help in guiding special needs educators, teachers and educational psychologists and counselors in designing school based specific behavioral and education intervention plans that will improve school-related outcomes (i.e., improving academic achievement and reducing behavior problems) in SWHIs

in particular and students with disabilities in general. The finding from this study may also help school practitioners in developing and implementing PsyCap interventions to safeguard the detrimental impacts of stress on outcomes of academic achievement and behavior problems in the school context. Above all, the findings of this study may draw the attention of teachers to school difficulties of SWHIs in the regular school setting and suggest possible assistance that could be offered to them.

Beyond contributing to knowledge and practice, findings from the current study may also contribute for policy development. Policy makers may use the finding for effective planning of stress prevention and reduction programs and could integrate the program into the academic curriculum to alleviate stress of SWHIs in the school environment. Education planners may adjust curriculum contents, improve the quality of teacher's instructional methods and reduce excessive tests and too much home works. The school may exert efforts to improving the relationships among peers as well as the teacher-student relations. Educational policy makers may encourage schools to conduct more recreation activities, and help students gain enriched social skills. More specifically, policy makers may empower schools to enhance students' strengths and positive psychological capacities to cope with their school-related concerns. As a result, policy makers and curriculum planners use the results of this study to integrate PsyCap development into school programs through short trainings or by incorporating comprehensevely across the curricula. It is suggested that PsyCap is open to improvement and teachers could incorporate PsyCap development lessons into their academic programs, pedagogy, and curricula, more specifically targeting for at-risk students such as SWHIs and other disabilities.

1.6 Delimitation of the Study

This study focused on examinining the association between school-related stress and school-related outcomes of academic achievement and behavior problems and the possible

moderating role of PsyCap in these associations among SWHIs as well as examining differences in the study variables between students with and without health impairements. The study area was delimited to Addis Ababa, which is the capiatal city of Ethiopia. SWHIs were recruited only from Tikur Anbessa Specialized Hospital. SWHIs who were attending outpatient follow up services in other hospitals located in Addis Ababa were not included. Among the list of other specific health impairments category, the study participants were delimited only to students with DM and HD. Lastly, the study restricted age of participants from 12- 19 years on the assumption that school related concerns would be more challenging during this period given the distinctive developmental context.

1.7 Theoretical and Conceptual Frameworks of the Study

Two theoretical frameworks, the transactional stress theory (Lazrus & Folkman 1984) and the agentic perspective of social-cognitive theory (Bandura, 2008, 2011), were used to provide a working model for understanding the relationship between predicting variable (i.e., school-related stress) and criterion variables (i.e., academic achievement and behavior problems) and the impact of the moderating variable (i.e., PsyCap) upon this relationships. The transactional theory views stress as a complex relations between persons and their environments. According to this approach, stress could occur depending on the individual's mental interpretation of the apparent stressor and his/her available coping resources. Thus, a certain school demand may be perceived as stressful by one student while the same demand may be perceived as non-stressful by another student. This depends on the student's cognitive evaluation of the circumstances in which the perceived demands outweigh his/her coping capabilities. By adopting transactional theory of stress, studies showed that students who reported higher levels of perceived stress are at increased risk for negative school outcomes, such as lower academic achievement (Piekarska, 2000) and higher behavior problems (Eppelmann et al., 2016).

PsyCap is grounded on the agentic view of social-cognitive theory (Bandura, 2008, 2011). Social-cognitive theory is founded on model of triadic reciprocal determinism in which personal factors, environment situations, and behavioral events all function as interrelated and important elements that bidirecionally influence each other. Bandura (2001) describes agency as a thoughtful act, with its main characteristic being the ability to invent actions for particular purposes. In this view, human beings can affect as well as be affected by their life circumstances. The agentic view of social-cognitive theory postulates that persons operate as anticipative, planful, self-evaluating and proactive regulator of their feelings and behaviors.

In exercising personal agency, individuals apply their power to manipulate their functioning and surroundings. The crucial features in exercising personal agency are planning, forethought, self-evaluation, motivation and self-regulation (Bandura, 2001). Individuals utilize this basic competence to influence themselves in order to instigate, control and maintain their own behavior. These components are also inherent in the positive construct of overall PsyCap. The four psychological resources (i.e self-efficacy, hope, optimism and resilience) have a common component of positivity among them (Avey, Wernsing, & Luthans, 2008). In this sense, the underlying common element running through the four components of PsyCap is the "positive appraisal of circumstances and probability for success based on motivated effort and perseverance" (Luthans, Avolio et al., 2007, p. 550).

On the basis of the theoretical and empirical evidence reviewed above, a conceptual model was developed as illustrated in Figure 1. It was anticipated that school-related stress would relate negatively with academic achievement and positively with behavior problems. It was also posited that PsyCap would be associated directly and positively with academic achievement and negatively with behavior problems. It is also expected that PsyCap would moderate the destructive influence of school-related stress on school-relarted outcomes for

SWHIs such that high levels of PsyCap could counteract the negative effects of school-related stress on students' academic achievement and behavior problems. Figure 1 shows the conceptual model of the study.

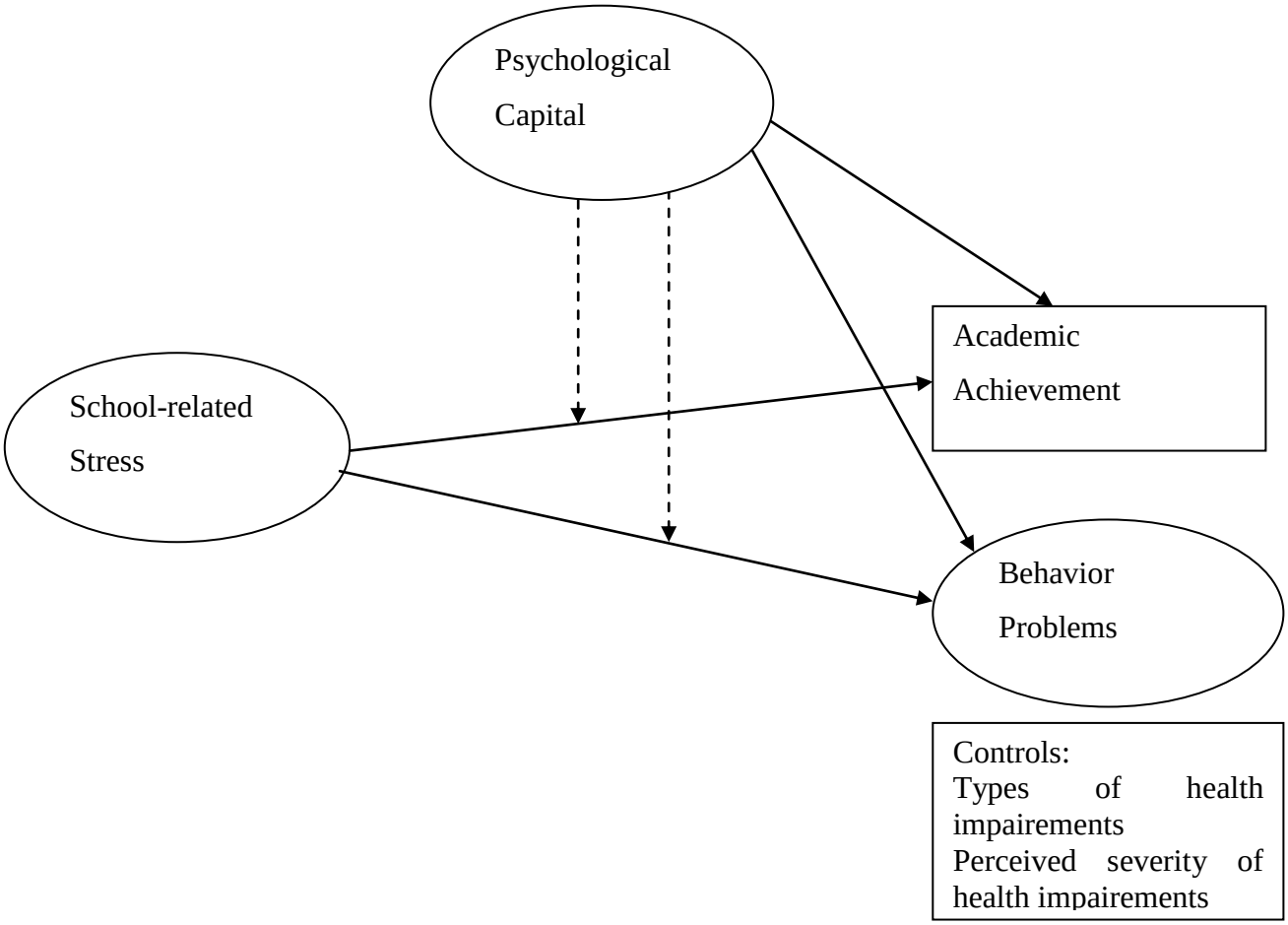


Figure1. Conceptual Model

Note: ——→ *indicates the main effect and* - - - - - - → *(dotted arrow) indicates the moderating effect.*

Chapter Two

Review of Related Literature

This chapter presents review of previous studies related to school-related stress, academic achievement, behavior problems and PsyCap of students with and without health impairments. First, general overviews about SWHIs, who are the target group of this study, are reviewed. Next, the theoretical models of stress are presented followed by the description of the concept of school-related stress. Further segments of the literature focus on the relationships of school-related stress and PsyCap with academic achievement and behavior problems. Subsequently, the moderating effects of PsyCap on the school-related stress and outcomes relationships are provided. Finally, structural equation modeling, the main data analytic approach for the study, is introduced.

2.1 Overview of Students with Health Impairments

Health impairement is one of the categories of disabilities given legal endorsement under the IDEA of 2004. IDEA defined health impairment as a health condition that results in reduced alertness in the the academic setting due to chronic health problems and detrimentally influences a child's performance in education (Farrell, 2008).

Chronic health conditions are prolonged medical problems that have limiting impacts on daily life activites (Shaw, Glaser, Stern, Sferdenschi, & McCabe, 2010). Some of the most common chronic illnesses in school children and adolescents include asthma, diabetes, epilepsy and heart conditions (Santos, Ferreira, Simo˜es, de Matos, & Machado, 2014). Students with chronic illnesses have no only similar developmental and everyday stressors as their typically developing peers but also have an additional burden of dealing with their chronic illnesse or disability (Michaud, Suris, Viner, 2007). The management of any chronic condition for adolescent students, who experience a period of speedy physical changes followed by significant individuation and socialization processes, add up to a great challenge

for the student, family and the school personnel and health-care providers (Burns, Sadof, & Kamat, 2006).

The global prevalence rates of chronic illness in children and adolescents vary greatly depending on definitions and methodology used ranging from 3.5% to 35.3%. (van der Lee, Mokkink, Grootenhuis, Heymans, Offringa, 2007). The proportion of chronic illness in children and adolescents has progressively increased in the past few decades (Epping-Jordan, Bengoa, Kawar, & Sabaté, 2001; Halfon & Newacheck, 2010), mainly due to medical advances which have enabled them to live longer. Diseases that wrere once deadly are at present well treated and children stay alive for an extended period of time than some 20 or 30 years ago (Eskedal et al., 2005; Halfon & Newacheck, 2010; Mokkink, van der Lee, Grootenhuis, Offringa, & Heymans, 2008). In particular, early identification and diagnosis, improved methods for treatment and management of many previously terminal illneses have contributed for improved health outcomes for millions of children and adolescents with chronic health problems (Van Cleave, Gortmaker & Perrin, 2010).

Health impairements are present in varying degrees in nearly all children with chronic health conditions. Barlow and Ellard (2006) divided the prevalence estimates of children having chronic illnesses into three groups based on the extent of activity limitations caused by the condition. The percentages are: 66% have a mild condition (little bother or limitation of activity), 29% have moderate severity (some activity limitations) and 5% have severe severity (persistent activity limitations).

In Ethiopia, the prevalence of SWHIs is unknown. Studies that assessed the prevalence of chronic diseases are scant and commonly look at adolescents and adults collectively. In addition, those few studies are conducted in hospital or community settings. Although a nationwide examination on occurrence of chronic diseases has not been made, a study conducted in Jimma, Southwest Ethiopia on 4,469 adolescents and adults whose age

group ranged from 15 to 65 found an overall prevalence of chronic disease of 8.9% (Muluneh et al., 2012).

A chronic health condition may cause limitations and disruption of daily activities, recurrent hospitalizations, and adjustment in one's mode of living because of strict treatment requirements (Boekaerts & Roder, 1999; Clay, Cortina, Harper, Cocco, Drotar, 2004). For example, the detection of diabetes demands regular check up of blood glucose levels, insulin regulation, restrictions on diet, exercise, daily activities and the risk of severe physical complications (McCarthy et al., 2002). Children with HD may have to undergone surgery and depend on lifelong medication and care and are at risk of to recurrent infections and heart failure and may even death (Marino et al., 2009).

Children with health impairments are just one of the designated groups that have been allowed to receive special education programs (Farrell, 2008). According to IDEA of 2004, children with health impairments are legally mandated to be offered an Individulized Eduaction Program. Furthermore, the legislation under section 504 of the Rehabilitation Act of 1973 permits student with a disability irrespective of the nature or severity of the child's disability, to proper education and without charge (Wright & Wright, 2011). Thus, SWHIs need extra services and assististance further than what is regularly presented in a general education classroom.

The following lists of conditions are target groups of the present study and two of the most common health impairments seen in the classroom. The review about each condition is intended to provide basic information and awareness about the specific chronic health conditions.

Students with DM: Diabetes mellitus is one of the vastly prevailing chronic medical conditions among children and adolescents signified by the presence of unbalanced blood glucose levels in the body due to deficits in insulin production, insulin function or both

(American Diabetes Association, 1998). DM is classified in two types, which are: Type 1 DM (insulin dependent diabetes) and Type 2 DM (non-insulin dependent diabetes). Type 1 DM is a condition in which the insulin manaufacturing cells in the pancreas stopped functioning and the secreation of insulin becomes insufficient (Farrell, 2008). Type 2 DM is a condition that is acquired when the body is unable to use the insulin that it does produce (Yi-Frazier, Hilliard, Cochrane & Hood, 2012). In recent years, Type II diabetes is becoming more common in children and adolescents in Africa emanating from increased consumtion of sugared and fatty diets and doing fewer physical exercises (Darkwa, 2011).

Diabetes often results in acute effects because of hypoglycemic or hyperglycemic episodes. Hyperglycemia occurs when blood glucose is abnormally high, while hypoglycemia occurs when blood glucose is lower than normal. Both high and low body blood glucose conditions can produce acute illness, unconsciousness, coma, seizure and death, if treatment is not provided (Rovet, Ehrlich, Czuchta, & Akler, 1993). When diabetes is not managed effectively, there is the potential for serious long-term health consequences on the individual (e.g., blindness, kidney disease, circulatory problems) (Helgeson, Snyder, Escobar, Siminerio, & Becker, 2007).

Research findings revealed that students with DM had significantly decreased academic achievement than their classmates without DM (Dahlquist & Källén, 2007; Meo et al, 2013; Parent, Wodrich, & Hasan, 2009). A meta-analysis showed that students with DM scored significantly lower results assessed by multiple standardized achievement measures including reading and writing when compared to students without DM (Naguib et al., 2009). Students with DM are also prone to cognitive difficulties such as verbal skills, concentration, perception, ability to recall, psychomotor efficiency, decision-making and overall intellectual functioning (Clay, 2004). Generally, low performance on achievement measures implies that students with DM have difficulty learning independently within the school environment.

Students with DM have a higher probability of encountering behavioral and psychosocial problems than peers without DM. For example, McCarthy et al. (2002) reported that students with DM had significantly higher number of school absences and behavior problems than their peers and siblings. Kim, Park, and Yoo (2015) indicated that students with DM had more internalizing and externalizing as well as overall behavior problems than their peers without DM. Even with regular school presence, children with DM could miss attending lessons because of leaving classroom to have a snack, monitoring blood glucose or taking insulin (Wodrich, Hasan, & Parent, 2011). Helgeson et al. (2007) reported that students with DM had greater social difficulties, and disturbed eating behavior compared with students without DM. The illness symptoms associated with acute complications of the condition can affect the frequency and/or quality of participation in usual student's social activities. Reynolds and Helgeson (2011) indicated that students with DM had greater incidence of depression, anxiety, and psychological distress in comparison to peers without DM.

Students with HD: Heart disease is any conditions that distort the structure or function of the heart. Heart conditions can be congenital or acquired after birth (Cohen, Mansoor, Langut, & Lorber, 2007). Medical interventions for children with heart conditions include medication or surgery to deal with the defect and malfunction of the heart. Heart problems have different levels of chronicity and are often classsified into mild, moderate and severe conditions (Cohen et al., 2007). The impact of the illness on school could vary depending on the severity of the disease and its associated difficulties (Karsdorp, Everaerd, Kindt, & Mulder, 2007).

Students with HD have an increased risk of reduced school performance. Studies pointed out that students with HD had a higher chance for decreased academic achievement (Uzark et al., 2008; Wray & Radley-Smith, 2010), reduced scores in standardized intelligence

quotient test, delays in language development, executive functioning problems, deficits in fine and gross motor skills (Miatton, De Wolf , Francois, Thiery & Vingerhoets, 2007) and psychosocial maladjustment (Wright & Nolan, 1994) compared to peers without HD. Students with heart conditions may experience higher number of absent days than their peers and may present with symptoms such as fatigue or labored breathing (Wray & Radley-Smith, 2010).

Students with HD have reduced psychosocial functioning. For example several studies reported that students with HD exhibited considerably higher behavior problems in relation to controls with no chronic illnesses (Elisabeth et al., 1993; Karsdorp, et al., 2007). A study also found heightened psychological distress, anxiety, depression and decreased self-esteem in students with HD than did age-matched students without HD (Cohen et al. 2007; Gupta, Giuffre, Crawford & Waters, 1998). Children with HD have greater feelings of inferiority and impulsivity (Kramer, Awiszus, van, Halteren, & Classen, 1989). In addition, Shillingford et al. (2008) reported that students with HD displayed significantly higher inattentiveness and hyperactivity than the general school population.

2.2 Models of Stress

The concept of stress has been described in many ways in the research literature. Based on the viewpoint of the study, stress may denote to the apparent impact of destructive stimulus, bodily and mental tension, physical reactions, emotional disturbance and subjectively perceived threats. The most widely accepted definition view stress as a relational phenomenon between the environmental triggering events and the individual (de Anda et al., 1997). According to McNamara (2000), stress is mostly explained from three theoretical perspectives: the medical, environmental and psychological models.

2.2.1 Medical Model

In the medical model, stress is described as a non-specific reaction of the body to any demand for change (Selye, 1978). According to Selye, when an individual experiences physical and emotional stimuli (stressors), bodily changes arise in response to the stress. The reaction can be assessed by a number of indicators, such as increased heart beat, widening of pupil and elevated blood pressure. In Selye's (1951) stress process model of the general adaptation syndrome, human stress responses go through three phases. In the alarm phase, a first instant response, the body gathers capacity and resources to react to the stressor. The next phase is resistance where the heightened stimulation is kept and accompanied by adjustment to the triggering stimuli. But, if the stress fails to decline, the body's resources and energy diminished, leading to the last sstage of exhaustion in which the possibility for negative outcomes rises.

2.2.2 Environmental Model

In the environmental model, stress is depicted as outside threats of immediate harm or aversive environmental situations that endanger, confront, surpass, or hurt the physical or mental capabilities of the person (Cohen, Kessler, & Gordon, 1995). In this framework, stress is determined by the demand that met the individual and the corresponding amount of strain associated with it. Changes taking place within the social or physical environment may present challenges to the individual. Environmental perspectives underline the significance of objectively assessing stressful life events and circumstances free from possible interferences such as individual's cognitive evaluations of the stimuli or the body responses to the stresful situation (Grant et al., 2003). Even if both physiological and environmental stress have been associated to undesirable outcomes for adolescents, neither viewpoints of stress satisfactorily elucidate why some adolescents who experience these forms of stress fail to experience the harmful effect others have shown (Suldo et al., 2008).

2.2.3 Psychological Model

Psychological models focus on the link between the stressful conditions a person meet and his/her succeeding physical reaction and mental apparaisal (Caltabiano, Sarafino, & Byrne, 2008). Lazarus and Folkman (1984) defined stress as a complex process involving an interaction between the subject and the environment that is interpreted as very difficult or greater than his/her adaptive capabilities. In their view, the stress one experiences is not in a situation or in a person but rather in the transaction between the situation and the person. The critical feature in this approach is the person's psychological evaluation of the stressful circumstances and the potential for action. According to Lazarus and Folkman (1984) individuals apply two forms of appraisal to evaluate conditions. Primary appraisal is the initial evaluation of whether the situation is stressful or not. Secondary apparaisal is the evaluation of one's coping capacity and positive attributes to meet the stressful demands.

Lazarus (1999) explained that the more certain an individual is in in his her ability to to surmount threats, the higher likelihood the person is to feel challenged rather than endangered and vice versa. The transactional model of stress is viewed as the most commonly used conceptualization of stress (Grant et al., 2003). In the present study, stress was conceptualized from the perpective of Lazarus and Folkmans' (1984) transactional approach's definition of stress which explains interms of the interplay between the person and his/her milieu.

2.3 School-Related Stress

Students use a large portion of their day time in school. Owing to academic demands, expectations and pressures on a daily basis, students are exposed to stress in the school (de Anda et al., 2000). Researchers found that the major stress in school adolescents stem from stress related to school (de Anda et al., 1997, 2000; Kouzma & Kennedy, 2004). For instance, Lohman and Javris (2000) revealed that the main cause of stress reported by students was

school-related problems. In 1997, a study was conducted by de Anda and his associates on a sample of fifty-four students from middle school in Los Angeles area to examine the nature of stressors encountered most frequently in their environment and the levels of stress felt by the students. The respondents reflected school-related concerns as the highest in frequency followed by conflicts with siblings and fathers.

Similarly, Kouzma and Kennedy (2004) conducted a study on self-reported stress of 423 Australian senior high school students ranged from 16-18 years old and found that school-related stressors were of most concern. These included worry over examination and results, school work pressure such as studying for examinations and too much need to perform well which is enforced by teachers and parents. Kouzma and Kennedy (2004) suggested that students may benefit from stress management techniques to deal with possible threatening problems within the school setting. Jones (1993) argued that the high percentage of school-related stress experienced by students is likely to emanate from the considerable proportion of their time spent in school environment.

Prior studies have made an effort to underscore particular stressors that may face students in the school atmosphere, in order to sort out potential problems to be addressed through intervention (Frydenberg, 1997; Kouzma & Kennedy, 2004). Murberg and Bru (2004) posited that the multiple stressful factors in school may well be grouped into four broad categories: school achievement, interaction with peers, schoolwork and, relationships with teachers and/or parents.

2.3.1 School Achievement Stressors

School achievement stressors may possibly include stressors comprising of tests and evaluation results, and students' expected targets and attainments (de Anda et al., 2000; Kouzma & Kennedy, 2004). School adolescents cite school achievement stressors such as fear related to poor academic achievements, failure in tests and examinations, time

management worries, inability to set realistic academic targets and anticipated goals as their major stressful situations (de Anda et al., 1997; Murberg & Bru, 2004; Suldo, Shaunessy, Thalji, Michalowski, & Shaffer, 2009). As students progress to higher grades, they might also consider the schooling requirements as more competitive and challenging and provide more importance to success in school activities (Hjern et al., 2008).

Kumar and Side (2015) examined academic stress and coping mechanisms in students with and without disabilities in Ethiopia. The samples involved include 117 students with disabilities and 103 students without disabilities drawn from Addis Ababa University. Data were collected using self-report instruments. Independent sample *t*-test and one way analysis of variance were employed for data analyses. Results showed that students with visual impairements reported significantly higher general academic stress than students without disabilities. Results also indicated that moderate level of stress and the use of problem focused coping techniques were reported by both groups of students.

2.3.2 Peer Relationship Stressors

Peer relationship difficulties are the main cause of stress for lots of students (Kouzma & Kennedy, 2004). Stress within peer relationship can come from concerns about not having enough friends (Pincus & Friedman, 2004), frequent rejection and bullying when one student is ridiculed, threatened and physically harmed by other students (de Anda et al., 1997). Negative peer relationships have been linked with academic and behavior problems, reduced social competence and self-esteem, depressed mood and school dropout in students (French & Concrad, 2001; Haynie, et al., 2001; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Poor peer interaction in the early stages of studens time at school can significantly predict social and academic challenges later in life. Wenzel (1989) emphasized that adolescent students' in school were more worried with social than academic parts of their life. Thus, it appears sound

to presume that the quality of peer interactions in school can be related to students' poor academic achievement and higher behavior problems.

2.3.3 Schoolwork Stressors

Another potential source of school-related stress for students in the school environment pertains to the students' school-related tasks and academic demands. Clemmitt (2007) found that excessive homework, tests and constant pressure of studying for examinations and lack of assistance for doing homework are the most significant factors that cause school-related stress. Demeke (2015), in his study of Ethiopian students in Dire Dawa City Administration, revealed that that schoolwork stressor was the greatest source of stress among students in primary, secondary and preparatory schools whose age ranged between 13-18 years. A study demonstrated that perceiving higher demands of academic work were associated with greater stress (Ollfors & Andersson, 2007).

2.3.4 Teachers and/or Parents Relationship Stressors

Teacher relationship related stressors. High-quality helpful interactions between teachers and students are essential to the proper development of students at school (Gregory & Weinstein, 2004; Hamre & Pianta, 2001). Good teacher relations are associated with various adaptive outcomes in students, such as positive feelings toward school, improved school adjustment, enhanced self-esteem and better academic achievement and decline depressive symptoms (Macklem, 2008). On the contrary, poor attachment to teachers' are linked to more behavior problems and lower academic achievement in students (Baroody, Rimm-Kaufman, Larsen, & Curby, 2014).

Helms (1996) examined the sources and responses of school-related stress in students with and without disabilities in United States of America. Participants comprised of 249 students with disabilities (i.e., learning and intellectual disabilities) and 7, 200 grade 4-12

students without disabilities. The School Situation Survey which consisted of 34 items and seven sub-scales was administered to the students to measure the sources (i.e., teacher interactions, peer interactions, academic stress and academic self-concept) and responses of school-related stress (i.e., physiological, emotional and behavioral reactions). Results showed that students with disabilities had significantly elevated stress in teacher and peer relationships, whereas students without disabilities had greater academic stress and stress related to academic capability. Students with disabilities indicated greater stress reactions (on all the three measures) regardless of grade level.

Murray and Greenberg (2001) examined the association of teacher-student interaction and school adjustment among 289 fifth- and sixth-grade students involving with 96 students with disabilities (comprising of 18 students with emotional disturbance, 20 students with health impairement, 40 students with learning disabilities and 18 students with mild-intellectual disabilities) and 193 students without disabilities. Results demonstrated that students with disabilities had more discontent with their teachers' intearctions, worse attachment with school, and felt more unsafe at school than did students without disabilities. Findings also revealed that students' affiliations with teachers and school attachment were significantly and negatively related with dissatisfaction with teachers and delinquent behaviors and positively with general school competence for students with and without disabilities.

Parent relationship related stressors. It is every parents wish to see their children achieving success in academics and other parts of life. Parents can turn into a source of stress on students while they try to guide their children. For instance, poor parental attention in student's performance can generate feelings of rejection and is therefore become stressful; at the same time excessive parental pressure on students to perform well may lead to parental conflicts and contribute to feelings of stress (Hale, 1998; Huan et al., 2008). A study has

shown that that poor parent-child connection manifested by too much conflict is related with greater risks in psychosocial and behavior difficulties (Buysse, 1997).

2.4 School-related Stress of Students with Health Impairments

Chronic health problems can affect school activities of students with multitude of ways. For instance, SWHIs remain absent from school more frequently than their classmates without health impairments (Shaw & McCabe, 2008). Boice (1998) found that SWHIs may experience difficulties with concentration and mental functioning due to certain medications and stress related to their illness. A study showed that SWHIs are more at-risk to the experience of elevated levels of school-related stress (Seiffge-Krenke et al., 2001). Seiffge-Krenke's et al. (2001) study compared stress and coping strategy of students with and without health impairments in Germany. SWHIs reported greater school-related stress and displayed a more maladaptive coping method to manage school stressors than their peers without health impairments.

SWHIs were found to have smaller friends, be exposed to greater peer rejection and were seen as more detached and less sociable than their peers without health impairments (Forgeron et al., 2010). A study showed elevated levels of mistreatment by peers among children and adolescents with health impairments compared to children and adolescents without health impairments (Sentenac et al., 2012). Students who have health impairments may likely be ridiculed for the mere reason of living with the condition or for conforming to the needed treatment procedures (Bukowski & Anita, 2000). Ridiculing them may happen due to different diets, visiting the nurse's room for check up and treatment, failing to take part in physical education practice sessions, or the prohibition to eat sugary meals. Making mockery of them may perhaps cause psychological problems such as anxiety, withdrawal, anger and aggression in SWHIs (Underwood, 1997). According to Van Lier et al. (2012),

peer victimization in SWHIs is associated with poor academic achievement, externalizing and internalizing behavior problems.

Balancing of competing priorities is another challenge for SWHIs. For example, students with DM may avoid mealtime break injections because of prioritizing social time over managing their health condition (Swift, 1997). Thies (1999) asserted that when students become severely sick, schooling is not considered as a main concern and when these same students feel well, health is not viewed as as an issue in their learning.

Many SWHIs have trouble in admitting and clearly talking about their health problem (Pless & Roghmann, 1971). They do all they can to keep away from revealing their impairement fearing that they may become labeled and stigmatized. This may push them to distance themselves from participating in peer activities for strange justification, or experience sudden medical problems within the school (e.g., diabetic coma, cardiac failure) which may put their peers and teachers in a complicated situation (Good, 1991; Michaud et al., 2007).

2.5 School-Related Outcomes of Students with Health Impairments

SWHIs experience chronic pain that can impact their school-related activities and outcomes. For example, chronic pain in SWHIs can impact school performance through disrupting sleep, reducing concentration in the classroom and posing trouble in dealing with the requirements of classroom tasks (Chan et al., 2005; Gorodzinsky et al., 2011). Furthermore, symptoms of chronic illness or undesirable effects of the treatment can bring on tiredness, weariness, bad-temperedness, and physiological problems that diminish motivation among SWHIs (Thies, 1999). SWHIs miss out more school days compared to SWOHIs (Shaw & McCabe, 2008)). According to Thies (1999), school attendance problems can hamper establishing positive social interaction and may lead to academic difficulties.

SWHIs may be subjected to increased difficulties in school performance. For example, Pinquart and Teubert (2011) conducted a meta-analysis of articles comparing the educational, physical and social performance of students with and without health impairments. The meta-analysis included the results of 954 studies and 104,867 SWHIs in total. The highest numbers of participants involved were students' with cancer, athma, diabetes, arthritis epilepsy and obesity. The participants mean age was 11.17 years (SD=2.76). Results showed that SWHIs had lower levels of academic functioning such as decreased performance in writing and mathematics tasks than their peers without health impairments. SWHIs also showed lower physical and social functioning compared to their matched comparison peers.

Fowler et al. (1985) studied academic achievement and school absenteeism in students with and without health impairments in North Carolina State. Families of 270 children with 11 specific chronic health conditions (ages 5-18) were involved in the study: heart disease (n=63), diabetes (16), epilepsy (n=37), hemophilia (n=34), arthritis (n=14), blood disorder (n=18), bowel disease (n=16), lung disease (n=17), cystic fibrosis (n=15), sickle cell disease (n=21), and spinal bifida (n=19). School data was reviewed to take the child's latest academic performance scores and number of days not attended in the last school year. Results indicated that SWHIs missed more school days (average16 days absent) in the previous year compared with SWOHIs (7 days absence). Independent sample *t* test analysis revealed that SWHIs scored significantly lower on achievement tests compared with their peers without health impairments. Furthermore, the study demonstrated that 30% of SWHIs had repeated one grade and 34% were receiving special services in the school.

Pinquart and Shen (2011) carried out met-analysis to study behavior problems in students with and without health impairments. The meta-analysis included the findings of 569 studies that involved 51,422 SWHIs. The mean age of the respondents was 10.6 years and

54.1% of them were boys and 45.9% were girls. Results indicated that SWHIs had increased rate of internalizing, externalizing and general behavior problems compared with SWOHIs.

Hysing et al. (2009) examined behavior problems in students with and without health impairments in Norway. The participants were 537 SWHIs comprising of students with asthma, students with neurogical disorders and students with other chronic health problems including students with HD and DM and a comparison group of 6469 SWOHIs. The Strengths and Difficulties Questionnaire were utilized to measure behavior problems. Findings showed higher level of behavioral problems and elevated risk of psychological problems in SWHIs than SWOHIs.

Zashikhina and Hagglof (2007) investigated behavior problems and depression among students with and without health impairments in Northern Russia. The participants comprised of 148 students with diabetes, asthma and seizure disorder and 301 comparison samples who had no health impairments. Students and their parents filled the measures of the variables. The findings of the study highlighted that SWHIs displayed higher levels of behavior problems and depression than a control group of SWOHIs.

2.6 School-Related Stress and Outcomes

2.6.1 School-Related Stress and Academic Achievement

A large body of research has documented the linkages between school-related stress and academic achievement. For example, Alam (2016) showed that increased school-related stress was related with decreased academic achievement in highschool students. Similarly, Windle and Windle (1996) indicated that school-related stress predicted more depression, less academic result and higher behavior problem. Similarly, Kaplan et al. (2005) conducted a longitudinal study to assess the relationships between stress occurring at school and academic performance. The study used a sample of 1034 students at middle school and 3 years after at high school and employed multiple regressions to analyze the data. The finding

revealed that greater stress in students significantly predicted reduced school achievement three years later.

Piekarska (2000) did a study to findout the interactions among school-related stress, academic performance and anxiety in students at community schools in Poland. The participants were 271 students found between 13 and 14 years of age. The Pearson's correlation coefficient analyses results revealed that school-related stress had a significant and negative association with students' grades. The results alo indicated that stress in students had a significant and positive interaction with anxiety. The findigs suggested that a rise in school-related stress was attached to heightened student's anxiety and declined academic results.

Lee, So, and Sung (2015) studied the relationship betweeen stress and academic achievement in Korean students. The participants comprised of 74,186 students ranging from 7^{th} to 12^{th} grades. Multiple logistic regressions were used to analyze the data. The results indicated students with greater school-related stress demonstrated decreased school achievement. The results suggested stress is a significant factor that would play a role to a drop in educational performance.

Mulatu (1997) carried out a study on perceived stress, coping and adjustment in 766 students between grades 6^{th} to 11^{th} at Jimma town found in South West Ethiopia. Structural equation modeling was employed in order to analyze the data gathered from students, their parents and school reports. Result indicated that perceived stress had negative relationship with academic performance and positive relationship with emotional and behavioral problems. On the other hand, increased uses of engagement coping and greater psychosocial resources were associated with diminished emotional and behavioral problems and enhanced academic performance.

In general, stress related to school has been shown to have negative association with academic results in general samples of school adolescents. Few studies, however, found results contradictory to expectations. For example, Shaunessy, Suldo, Hardesty, and Shaffer (2006) found that stress was not a significant predictor of students' grades for highly-performing students in the International Baccalaureate programs. Result showed that regardless of the high stress students experience in the International Baccalaureate program, the academic performance of students is much better than those students in the general education program. Similarly, Suldo et al. (2008) concluded that perceived stress did not predict low GPA in exclusively advancing students. The findings of these two studies contrast results of previous studies mainly because of their samples that were special subgroups of high achieving students who may possibly boast superior psychological resources.

2.6.2 School-Related Stress and Behavior Problems

A substancial body of research has highlighted that school-related stress is linked with behavior problems in school students. For example, Windle and Windle (1996) assessed the associations between stress and outcomes of behavior problems and academic functioning in adolescent students. The participants were 733 high school students in New York. The regression analysis results revealed that stress was a significant predictor of elevated emotional and behavioral problems and poorer academic performance.

Bjorkman (2008) also studied the connection between stress related to school and internalizing and externalizing behaviors in samples of 268 public junior high school students from suburban Illinois. Multiple regressions were conducted with the school-related stress as predictor and behavior problems as criterion variables. The finding of the study demonstrated that school-related stress did significantly predict both internalizing and externalizing challenging behaviors. The results of this study outlined that school-related stress is an

important variable to think about while studying the likely associating factors with behavioral functioning.

Natvig et al. (2001) examined associations between school stress, social support and bullying behavior among 885 students between the ages of 13-15 years in Norway. Data were collected using measures individually administered to each student and multiple logistic regression analysis was employed. The finding revealed that greater school-related stress experience was significantly linked with greater levels of bullying behavior and more support from teachers and peers was associated with reduced bullying.

Simillarly, Eppelmann et al. (2016) examined the links among school specific stress, coping and behavior problems of students in Germany. The total sample consists 350 (189 female and 161 male) grade 11^{th} highschool students. Self report data on perceived stress, coping, as well as emotional and behavioral problems were gathered. The findings of the study indicated that stress related to school problems was significantly related with increased emotional and behavioral problems. Furthermore, the relations of stress and behavior problems was partly mediated through avoidance coping.

A study by Kim, Conger, Elder and Lorenz (2003) investigated the causal relationship between stress and behavior problems in Midwest United States of America. The study employed longitudinal research design and involved a sample of 451 students ranging from grades 7^{th} to12^{th}. The regression analysis results revealed that stressful life events at one point predicted problem behaviors one year later.

Holmes, Yu and Frentz (1999) assessed the associations of stressful life events and behavioral problems in 107, 8 to 16-year-old students with diabetes and 83 students without diabetes in a metropolitan area of United States of America. The results indicated stressful life events of were significantly correlated with behavior problems. In addition, the study

showed that stressful life events significantly predicted increased behavior problems after controlling for demographic predictors of age, gender, race, and socio-economic status.

2.7 Psychological Capital

2.7.1 Conceptualization of Psychological Capital

The concept of PsyCap has evolved from positive psychology literature (Luthans, Youssef, et al., 2007; Nelson & Cooper, 2007). Positive psychology is concerned focusing on people's strengths rather than on their weaknesses (Seligman, 1998). The intent of this positive psychology is to foster a shift in focus from obsession only with fixing weaknesses and dysfunctions to the building of competencies and enhancement of positive qualities (Luthans & Youssef, 2004; Seligman & Csikszentmihalyi, 2000).

More recently, the research paradigm in psychology and education has moved away from a deficit perspective to a positive perspective which focuses on positive human strengths and resources (Larson, 2000). PsyCap is one of the new research areas that attempts to find out what works instead of what does not. It originated from the positive organizational behavior (Luthans, Youssef, et al., 2007; Nelson & Cooper, 2007), which is largely drawn from the theory and research in positive psychology. Positive organizational behavior is defined as, "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (Luthans, 2002a, p. 59). A psychological resource capacity within the defined positive organizational behavior should include the following criteria: (a) it must be based on theory and research (b) should be state-like, rather than trait-like, hence (c) should be open to development (d) it can lead to increased performance (Luthans 2002a, 2002b; Luthans et al., 2007). The capacities drawn from positive psychology that have been identified to meet the positive organizational behavior inclusion criteria are self-efficacy, hope, optimism, and resilience (Luthans, 2002a, 2002b;

Luthans et al., 2007). Together, these four capacities make up PsyCap (Luthans, Luthans, & Luthans, 2004; Luthans et al., 2007). The term PsyCap was first coined by Luthans (2002a) and is defined as:

> An individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success (Luthans, Youssef, et al., 2007, p. 3).

PsyCap is a form of capital that focuses on personal development (Luthans et al., 2004). PsyCap is differentiated from traditional forms of capital (i.e., economic, human, and social capital). Traditional economic capital points to financial assets; human capital include experience, education, skills, knowledge and ideas; social capital indicates relationships and networks; and PsyCap comprises self-efficacy, hope, optimism, and resilience (Luthans, Youssef, et al., 2007).

PsyCap has been shown both conceptually and empirically to be a higher order core construct (Avey et al., 2010). Many empirical studies have showed discriminant and convergent validity among the sub-constructs of PsyCap (e.g., Avey et al., 2010; Luthans, Avolio, et al., 2007; Youssef & Luthans, 2007). Individuals with greater amounts of the combined resources of the four components of PsyCap as a higher order core construct perform at higher levels than those with high levels of one component alone (Luthans, Youssef, et al., 2007).

Researches have clearly indicated that the higher order core construct of PsyCap strongly predicted employees' attitudes, behavior and performance than any one of the four

components by itself (Avey et al., 2011; Luthans, Avolio, et al., 2007). There is also growing evidence that PsyCap is significantly and positively linked with mastery orientation and innovation (Luthans et al., 2011), perceived employability (Chen & Lim, 2012), psychological well-being of employees (Avey et al., 2010; Culbertson et al., 2010) and negatively related to dimentions of burnout-emotional exhaustion and depersonalization (Cheung et al., 2011), incivility (Roberts et al., 2011), absenteeism (Avey, Patera, & West, 2006) and turnover (Avey et al., 2009).

Several studies demonstrated that PsyCap is subjected to change and development. For example, Luthans et al. (2006) made a study on the effect of micro-intervention of PsyCap on management students and practicing managers and indicated that the intervention of PsyCap significantly improved participant's PsyCap. Luthans et al. (2008) has also revealed that PsyCap of employees can be developed through relatively short online training interventions. Luthans et al. (2010) showed that PsyCap intervention brings noticeably improved performance in employees. This shows that PsyCap intervention can improve both individuals PsyCap as well as their job performance.

2.7.2 The Components of Psychological Capital

The four specific PsyCap elements include: self-efficacy, hope, optimism and resilience.

Self-efficacy. Self-efficacy is described as an individual's belief concerning his/her ability to perform specific tasks successfully (Bandura, 1997). It is founded on social cognitive theory. According to Bandura (1997) self-efficacy improves when one (i) displays task-mastery by successfully accomplishing a given task; (ii) learns vicariously or through a role model by observing significant others execute the task (iii) gets the trust and belief of important and respected persons to accomplish a given task and receives supportive reactions and comments on progress and (iv) develops the belief that he/she is mentally and/or physically in good shape to effectively perform the task. An individual with lesser efficacy

have a tendency to exert a reduced amount of effort and give up on difficult tasks, but a person with greater efficacy show better interest and motivation, which leads to improved performance (Diseth, 2011; Sungur & Güngören, 2009). In an educational environment, self-efficacy has been documented as a good predictor of students' academic performance (Chemers, Hu, & Garcia, 2001; Valentine, DuBois, & Cooper, 2004).

Hope. The psychological capacity of hope draws from Snyder's (2000) hope theory. It is defined as a desire accompanied by expectation of belief in fulfillment. Hope is comprised of three components: goals, agency (goal-directed energy) and pathways thinking (planning to meet goals) (Snyder et al., 1991). Snyder (2002) demonstrated that persons with greater hope are able to generate multiple goals in various parts of their life. Persons with higher hope have greater interest, motivation and energy to achieve the goals of their life (Snyder, 2002). Hope is one of the most investigated positive psychological variables, and has strong theory, research, and empirical measurements (Luthans, 2002a, 2002b; Snyder al., 1991; Snyder et al., 1996; Luthans, Avolio, et al., 2007). In addition, studies have indicated that more hope predicted higher academic achievement in school children and adolescents, and college students (Curry, Snyder, Cook, Ruby, & Rehm 1997; Gilman, Dooley, & Florell, 2006; Snyder et al., 1991).

Optimism. Optimism is the tendency to look at the positive side of any situation and expect the best possible outcome from any condition in progress (Carver & Sheier, 2002). Optimism is grounded on attribution theory which is concerned with how individuals explain successes and defeats. Seligman (1998) posited that an optimistic person attributes his/her success to his/her skills, traits, or characteristics whereas a pessimistic individual provides his/her successes to chance or the circumstance. Furthermore, optimistic individuals explain their failures as occurring due to some particular challenges, whereas pessimistic individuals explain their failures for reasons of deficits in skills, traits or characterstics (Seligman, 2006).

Researchers have shown that individuals with a more optimistic explanatory style will outperform those individuals that have a pessimistic explanatory style in the academic setting (Huan, Yeo, Ang, & Chong, 2006; Seligman, 2006).

Resilience. Resilience refers to the capacity to positively react or adapt well in difficult conditions (Masten & Reed, 2002). Educational researchers were interested in studying at risk youth, and their ability to positively adapt to contexts of significant adversity or risk. Greater resilience has been shown to be related with increased academic achievement in students (Borman & Overman, 2004). That is, students with more resilience appear to perform better academically. Likewise, a study showed that students with higher resilience had fewer behavior problems (Sun & Shek, 2012).

2.8 Psychological Capital and School-Related Outcomes

Educational scholars have commonly looked at the impact of traditional capitals including financial, human, and social capitals on school achievement. These forms of capital have been analyzed by looking at the individual's financial, human and social capital or the families' financial, human and social capital, and even the schools financial, human and social capital (Parcel & Dufur, 2001; Schickedanz, 1995). For example, the financial capital of school and families has been linked to academic achievement in students (Parcel & Dufur, 2001), human capital of parents, and teachers were found to have an influence on academic performance (Marks, Cresswell, & Ainley, 2006), and the social capital of individuals, families, and schools were all shown to be associated with school results (Stewart, 2008; Polluck, 2004; Yan & Lin, 2005). These researches have shown that the capital of parents, teachers, and schools all factor into academic achievement in varying degrees. With this interest in other forms of capital, and the scarcity of research on PsyCap within academic contexts, it seems like a fruitful line of research to continue the PsyCap research into the educational organizations.

Liran and Miller (2017) carried out a study to investigate the association between PsyCap and educational adjustment among university students. The study consists of 250 second and third year BA degree students at the University of Haifa in Israel. Self-report measures were administered to collect data on students' PsyCap and academic adjustment. The collected data were analyzed by applying Pearson Correlation Coefficient and SEM analyses. Correlational analyses results indicated that PsyCap had strong and positive relationship with students' adjustment in education. Moreover, SEM analyses results revealed that PsyCap was strongly and positively associated with academic adjustment and thus PsyCap explained the larger portion (74%) of the variation in students' adjustment.

Datu and Valdez (2016) assessed the association of PsyCap with students' academic and well-being outcomes. A sample consisting 606 Filipino high school students were participated in the study. SEM analysis findings demonstrated that PsyCap positively and strongly predicted educational engagement, flourishing, happiness, and positive mood. The findings suggest that PsyCap could play a positive influence on a range of students' academic and well-being outcomes.

A study conducted by Shakarami, Davarniya, Zahrakar, and Hosseini (2014) assessed the associations among PsyCap, psychological hardiness, and spiritual intelligence and psychological well-being of students. The samples included 377 college students in Iran. Data gathered with measures of self-ref-reports were examined by Pearson Correlation Coefficient and simultaneous multivariate regression analyses. The results displayed that PsyCap was positively and considerably related with students' psychological well-being. In addition, simultaneous regression analysis results showed that PsyCap, psychological hardiness, and spiritual intelligence significantly predicted changes in psychological well-being of students.

Empirical studies have demonstated that PsyCap influences quite a lot of positive school-related outcomes among students including academic achievement (Jafri, 2013; Luthans et al., 2012; Tjakraatmadja & Febriansyah, 2007), creativeness (Tsai, Lee, & Hsu, 2012), and productive coping strategies (Khan, Siraj, & Li, 2011). However, these studies predominantly concentrated on the influence of PsyCap in higher education settings.

2.8.1 Psychological Capital and Academic Achievement

Considerable studies have shown relations between the individual constituents of PsyCap (i.e., hope, optimism, self-efficacy, and resilience) and academic achievement (e.g., Bandura, 1996; Masten & Reed, 2002; Seligman, 2006; Snyder, 2002). However, few studies have been conducted in the educational environment to assess the impact of PsyCap as a combined construct on academic achievement. For example, Tjakraatmadja and Febriansyah's study (2007) took a sample of 110 management students at a university in Indonesia and showed that students with greater levels of PsyCap had greater grade point averages.

Luthans et al. (2012) studied the link between PsyCap and academic performance in university students. The sample comprised of 95 undergraduate business school students at a medium-sized Midwestern university in United States of America. Multiple regression anlysis findings revealed that PsyCap had significant relationship with students' grades.

Furthermore, Jafri (2013) investigated PsyCap in two groups of students categorized as high and low achieving students. Participants were 240 college students studying in Bhutan. Results revealed that high achieving students had significantly greater level of PsyCap than low achieveing students. The study suggested that students with higher levels of PsyCap possess greater capacities to manage difficult circumstances which could contribute to better capability to do well academically.

Though, almost all of the available studies showed the positive influence of PsyCap on students' academic achievement (e.g., Jafri, 2013; Luthans et al., 2012; Tjakraatmadja & Febriansyah, 2007), one study found inconsistent results (Tjakraatmadja, Hendarman, & Amriel, 2011). The study took 105 samples of college students from Bandung Institute of Technology in Indonesia. Result revealed that PsyCap did not influence GPA. Generally, even if little studies have attempted to investigate the relationship between PsyCap and academic achievement among students in higher education settings, there lacks a reserarch examining the association of PsyCap and academic achievement, particularly on samples of SWHIs in school settings. Thus, one aim of the study was to assess the link between PsyCap and academic achievement among SWHIs in school settings.

2.8.2 Psychological Capital and Behavior Problems

Previous researches have demonstrated the association between components of PsyCap and behavior outcomes of students (Hagen, Myers, & Mackintosh, 2005; Sun & Shek, 2012). However, research on the composite core construct of PsyCap and its relationship with students' behavior is very limited. Prior research on the association between PsyCap and behavioral problems in students appears to be limited to only one empirical study (Wang et al., 2014). The study involved 596 students randomly recruited from six public schools in Hangzhou of China. The finding demonstrated that PsyCap had significant and negative relationships with behavior problems. This showed that higher levels of students' PsyCap were found to be correlated with a fewer rates of behavior problems. Thus, another objective of the study was to assess the association between PsyCap and behavior problems among SWHIs in the school setting.

2.9 Psychological Capital as Moderator of Stress

Even if research on PsyCap as a moderator of stress in education setting is almost none, there are ample studies that have examined the moderating role of the various

components of PsyCap in the association between stress and student outcomes. For example, Lai (2009) investigated optimism as a moderator in the interaction between stressful events and mental health in a sample of 345 high school students in China. Results of multiple linear regression analyses revealed that optimism moderated the relationship between stress and mental health of students.

Furthermore, Noh and Shin (2014) examined the relations between students' perceptions of daily hassles, optimistic thinking and psychological well-being in South Korea. A sample composed of 474 grade six students took part in the research. Result indicated that students' optimistic thoughts had a significant perceived stress moderating influence on psychological well-being. Particularly, highly optimistc students' demonstrated increased well-being inspite of mounting levels of stress from daily hassles.

Similarly, García-Izquierdoa et al. (2014) investigated the the moderating role of resilience in the connection between burn out and psychological well-bing of university students in Spain. A stepwise regression analysis indicated that the positive personal resource of resilience significantly buffered the stressful consequence of emotional exhaustion on students' the psychological well-being.

A longitudinal study performed by Valle et al. (2006) assessed the influence of hope in the link between stressful life events and well-being in students. The study participated a sample consisted of 699 students recruited from three middle and two high schools in southeastern USA. The findings indicated that the relations between students' stressful life events and life satisfaction and behavior problems were significantly modified by their psychological strength in hope.

Natvig et al. (1999) examined the interactions among school distress, self-efficacy, and psychological health of students in Norway. In the research, 862 students between the ages 13-15 years were involved. Findings of the multiple logistic regression analyses

revealed that greater school-related stress was significantly associated with greater risk of psychological problems. In addition, the link between students stress experience at school and psychological health were moderated by students' collective self-efficacy as well as by the specific school-related self-efficacy.

A number of studies have identified the stress buffering role of PsyCap in employees' outcomes at workplaces. For example, a study accomplished by Cheung et al. (2011) analyzed the associations of PsyCap, stress, and work outcomes of teachers in China. The respondents were 264 teachers taken from five schools in Hangzhou district. Results demonstrated higher levels of PsyCap significantly modified the effects of emotional stress on teachers' job burnout and satisfaction. A research carried out by Roberts et al. (2011) also investigated the interaction among job stress, PsyCap and incivility in employees. The study took a sample of 390 industry workers. The findings showed that PsyCap modifies the connection between work-related stress and uncivil behaviors, indicating that the link is weaker for workers with greater PsyCap and stronger for those less in PsyCap. Abbas et al. (2014) assessed what role PsyCap could play in the associations among perceived politics in organizations and job outcomes among employees in Pakistan. Participants were 231 hired employees working in different companies. The findings revealed that PsyCap buffered the influence of perceived politics on both outcomes of job performance and satisfaction.

The psychosocial characteristics of school setting is in various aspects similar to a work setting and the burdens that a school impose on students are equivalent to those encountered by individuals working at organizations such as intense workloads, meeting cut-off date, and performance (Hijern et al.,, 2008; Modin, Östberg, Toivanen, & Sundell, 2011; Natvig et al., 1999). Generally, based on the findings of the moderation studies of PsyCap in employee populations and the stress-buffering role of separate components of PsyCap in student populations, it is expected that PsyCap may also function as a moderator in the link

between school-related stress and school-related outcomes in school students. Nevertheless, empirical studies assessing the moderating influence of PsyCap in the association between school-related stress and outcomes on a sample of student population are lacking.

In one available study on the subject, Gautam and Pradhan (2018) took 210 incidentally selected general samples of high school students whose age ranged from 14-18 from rural areas of government schools in India. The researchers used self-developed psychological capital scale to measure PsyCap, a stress inventory, assessing physical, emotional and mental stress, as measure of stress and an average mark obtained by a student in one academic session to measure academic achievement and they analyzed the data using regression analysis. The findings showed that PsyCap moderates the adverse effects of stress on academic achievement. Nonetheless, more research is needed to look at the function of PsyCap as a moderator in the link between school stress and outcomes across a variety of student populations and settings. Thus, the current research attempted to address the gap in the literature by examining the potential moderating role of PsyCap in the relationship between school-related stress and outcomes among SWHIs, employing the more rigorous statistical technique of structural equation modeling.

2.10 Structural Equation Modeling

This section provides general idea of structural equation modeling (SEM), a data analyzing technique that has been employed to evaluate the associations among the variables in this study.

2.10.1 Basics

SEM is a **"**multivariate technique combining aspects of factor analysis and multiple regression that enables the researcher to simultaneously examine a series of interrelated dependence relationships among the measured variables and latent constructs as well as between several latent constructs" (Hair, Black, Babin, & Anderson, 2010, p.546). SEM

specifies the associations of variables on the basis of existing theory and research (Kline, 2005). It is an important statistical technique utilized to develop and test theory and construct validation (Anderson & Gerbing, 1988).

SEM offers many advantages compared to other commonly used multivariate analysis techniques used in research such as multiple regressions and path analysis. For instance, SEM permits simultaneous examination of associations within multiple independent and dependent variables (Tabachnick & Fidell, 2013). This capability for simultaneous analysis makes SEM analysis better than multiple regression analysis in which only two or more independent variables relationship with single dependent variable can be tested at a time (Awang, 2012). Hence instead of testing the hypothesized relationships one by one, SEM allows all the relationships among the model to be tested simultaneously. SEM also represents hidden concepts in the complex and dependent interactions and exerts the capacity to minimize measurement errors in the process of estimation (Kline, 2005). Furthermore, SEM helps investigators to analyze and compare several competeing models (Byrne, 2016). Finally, SEM enables to examine moderating and mediating effects in a specified model (Schumacker & Lomax, 2010).

The Overall SEM model is composed of measurement model and structural model (Anderson & Gerbing, 1988). A measurement model depicts the relations between a latent variable and its indicators (Hair et al., 2010). A good measurement model requires reliability and validity of the measures and constructs (Tabchnick & Fidell, 2013). Performing confirmatory factor analysis (CFA) is a main technique for validating the measurement model (CFA) (Byrne, 2016). Anderson and Gerbing (1988) assert that the psychometric soundness of the the latent variables are precondition for evaluating the relationships amongst the latent variables. The structural model delineates the relations within the latent variables (Kline 2011). It identifies the pattern in which a specific latent variable directly or indirectly

influence variation in the values of some other latent variables in the specified model (Schumacker & Lomax, 2010).

2.10.2 Structural Equation Modeling Procedures

The most important processes in the development of an SEM include: model specification, identification, estimation, suitability assessment and re-specification (Byrne, 2016; Kline, 2005).

The first step, model specification, involves specifying the hypothesized model to be tested using structural equations and/or diagrams (Kline, 2005). The assumed relationships between the observed and latent variables and the associations among the latent constructs represent the equations in the hypothesized model. The second step in SEM analysis, model identification, illustrates the process of ensuring the presence of at least one unique solution for each parameter estimate in the presumed model (Byrne, 2016). The third step is model estimation. Model estimation entails finding out the value of the unknown parameters and the errors involved in the value (Anderson & Gerbing, 1988). The fourth step is model evaluation. This is the process of evaluating the degree of fit between the proposed model and the data through goodness-of-fit indices (Kline, 2005). The last step is model respecification. This is the system of performing model modification following specification indicators to improve the fit of the model (Anderson & Gerbing, 1988; Hair et al., 2010).

2.10.3 Evaluation of Goodness-of- Fit

Goodness-of-fit (GOF) assessment is very essential to make sure the suitability between the theoretical model and the empirical data and permits the comparison of the efficacy of multiple competing models (Byrne, 2016). Several fit indices have been put forward to evaluate models, and there has been extensive debate among researchers as to which ones are the best (Tabachnick & Fidel, 2013). This dispute has prompted a consensus that it is always sensible to report combination of several fit statistics (Hair et al., 2010).

Generally, model fit measures can be grouped in to three major categories: absolute, incremental and parsimony fit indices (Byrne, 2016; Hair et al., 2010; Kline, 2011).

Absolute Fit Measures: Absolute fit measures assess the degree of fit between the overall model and the sample data (McDonald & Ho, 2002) and do not use another model as basis for comparison (Kline, 2005). Fit indices included in this category comprise the chi-square ($\chi 2$) test, goodnesss of fit index (GFI) and the root mean square error of approximation (RMSEA). Chi-square is a test assessing the difference of significance between the matrix of implied variance and covariance and empirical sample variance and covariance (Hu & Bentler, 1999). A non-significant $\chi 2$ value ($p > .05$) indicates the good fit of the model with the sample data (Hair et al., 2010). Even though this statistical measure is the most prominent one to determine model fit, it's over sensititivity to sample size is pinpointed as a major drawback of the measure (Fornell & Larcker, 1981; Hu & Bentler, 1995). RMSEA, another absolute fit statistic, measures approximation error between the observed covariance and covariance of the hypothesized model (Meyers, Gamst, & Guarino, 2013). According to Hu and Bentler (1999), RMSEA value of less than .06 signifies a good fit. GFI is the third absolute goodness-of-fit measure. GFI determines the relative extent of variance and covariance jointly exaplained by the model (Tabachnick & Fidell, 2013). GFI values range from 0 (showing bad fit) to 1 (showing perfect fit), where a value of .90 and greater is suggested as an indicator of good fit (Kline, 2005; Schumacker & Lomax, 2010; Byrne, 2016).

Incremental Fit Measures: Incremental fit measures assess the proportionate improvement in fit by comparing the generated model to possible baseline or null models estimated with the same data (Anderson & Gerbing, 1988). The commonly used incremental fit indices include the Normed Fit Index (NFI), Tucker-Lewis Index (TLI), also named as the Non-Normed Fit Index (NNFI), and the Comparative Fit Index (CFI). NFI reflects the extent

to which the hypothesized model fits compared to the null model (Byrne, 2016). NFI values equal to or greater than .95 signifies good model fit (Kline, 2005). The main shortcoming of this measure is that it is susceptible to sample size underrating the goodness of fit of a model with small samples (Hu & Bentler, 1995). The TLI is conceptually similar to NFI, but varies in that it compares the normed chi-square values for the null and specified model and puts into consideration complexity of a model (Hair et al., 2010). TLI values equal to or greater than .95 reflect a good model fit (Hu & Bentler, 1999). CFI compares the the covariance matrix estimated by the model with the observed covariance matrix (Meyers et al., 2013). CFI values range from 0 (worse fit) to 1 (perfect fit), with values .95 or above demonstrates good model fit (Hu & Bentler, 1999).

Parsimony Fit Measures: The third category of model fit indices is parsimonious fit indices. Parsimony fit measures evaluate the fit of the model in relation the number of estimated coefficients required to achieve the level of fit (Hair et al., 2010). The normed chi-square ($\chi 2/df$) is the commonest parsimonious fit measure used for evaluating SEM model (Cangur & Ercan, 2015). The $\chi 2/df$ ratio values less than 3.0 have been suggested as acceptable values (Kline, 2005).

Chapter Three

Methods

This chapter presents the research methods employed to collect and analyze data in order to address basic research questions and/or objectives of the study. Specifically, the chapter describes the study design, site, participants, instruments and procedures and methods of data analysis.

3.1 Study Design

The purpose of the present study was to investigate the relationship between school-related stress and outcomes (i.e., academic achievement and behavior problems) and the moderating influence of PsyCap in the school-related stress and outcomes relationships among SWHIs. The study employed correlational and cross-sectional research designs. Correlational research design was chosen as the research posited to determine the various relationships among the study variables of interest. Cross-sectional research design was found to be suitable to the present study to gather the data once and and find answer to the basic research questions.

3.2 Study Site

The study was conducted in Addis Ababa, which is the capital city of Ethiopia. Addis Ababa is the biggest city and main urban center in the country. Addis Ababa is located in the centre of the country at an altitude of 2,400 meters above sea level and has an area of 250 square kilometers. The city is administratively divided into 10 sub-cities, 28 districts and 306 sub-districts. Based on the 2007 census projections, carried out by the Central Statistical Agency of Ethiopia in 2013, the total population of Addis Ababa for the year 2017 was estimated to be near 3,434,000, of whom 1,625,000 were male and 1,809,000 female (with a male to female ratio of .9:1.1). All of the population was urban inhabitants. Addis Ababa holds greater number of hospitals, health centers and schools.

3.3 Participants

The study participants were SWHIs (i.e., students with DM and HD) attending at primary, secondary and preparatory schools in Addis Ababa. Eligible participants were recruited from registries of diabetes and heart disease outpatient clinics at Tikur Anbessa Specialized Hospital (TASH). TASH is the oldest and largest hospital in the country and serves both as tertiary teaching hospital and the last destination of health service referrals across the country. The hospital gives health services for hundreds of thousands patients per year. Children and adolescents with DM and HD were receiving both inpatient and outpatient services at the diabetic and cardiac clinics of the hospital respectively. The diabetic clinic for children and adolescents at TASH were run twice weekly on Monday and Wednesday. The cardiac clinics were rendering follow up services for children and adolescents with HD every day from Monday to Friday. The main reasons for recruitment of the eligible samples from the hospital setting were to easily identify SWHIs from patient registries and contact them during their follow-up visit and clinic appointments at both diabetic and cardiac clinics of the hospital.

Inclusion Criteria: SWHIs were eligible for incusion if they met the following criteria: age 12 to19 years, grades from 5^{th} to 12^{th}, live and learn in Addis Ababa and must be diagnosed at least six months earlier than data collection with either DM or HD and should attend and/or follow up at the outpatient diabetes and cardiac centers of the hospital respectively. Exclusion criteria were: SWHIs less than 12 years and older than19 years old, having other recognized disabilities, newly diagnosed DM and/or HD for less than six months duration, and living and learning outside of Addis Ababa.

A total of 629 SWHIs, 299 with DM and 330 with HD, met the inclusion criteria. Chochran's formula (1977) of sample size determination was employed to determine sample

size for the study. The formula for representative sample proportions of large population is presented as follows:

$n_0 = Z^2 p q / e^2$

Where, n =sample size

p = Estimated percentage of sample proportion (.5)

e= Marginal error/ the level of precision (.05)

Z= the z- score associated with selected degree of confidence (95%)

Since the source population was finite, the sample size was adjusted with the following formula:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where, n = sample size for finite population (the required sample for the current study)

n_0= sample size for large population ($n_{0=}$ 384)

N= population size (N=629 for the present study)

The sample size calculated for the current sudy was 238; with adjustment of 10% no response rate, the final calculated sample size was 262. Stratified random sampling technique with proportionate distribution was employed to get the reqired sample size from both DM and HD groups. Strata were formed on the basis of health impairment category and participants from each stratum were selected using simple random sampling technique. Accordingly, 125 participants with DM and 137 participants with HD totaling to 262 participants were selected for the study. Out of the selected 262 SWHIs, 239 participated in the study; 18 (7%) were not reachable and 5 (2%) refused to participate.

Though there exists little agreement on the sufficiency of sample size for SEM analysis, Kline (2011) recommended a minimum sample size of 200. Hoe (2008) explained

that a sample greater than 200, as a rule of thumb, is understood to offer sufficient statistical power for data analysis with SEM. The sample size of the current study based on health impairment type is summarized in Table 1 below.

Table 1

Sample Size

Impairment Type	No. of Eligible Participants	Expected Sample Size	Final sample
Diabetes Mellitus	299	125	115
Heart Disease	330	137	118
Total	629	262	233

A comparison group of SWOHIs was recruited from primary, secondary and college preparatory schools in Addis Ababa. In the 2017/2018 academic year, a total of 615, 824 students were attending primary, secondary and college preparatory education in the city. Among these, 339, 416 of them were regular students found in government schools, according to the data obtained from Education Bureau of Addis Ababa City Administration. SWOHIs were recruited for the study matching for age, sex, and grade level of the SWHIs group. To ensure that this comparison group did not include SWHIs and other disabilities, the questionnaire that was administered to this group included an additional question asking whether the student had a chronic illness and recognized other disabilitities.

To draw a sample of SWOHIs, three government schools were selected purposefully in Addis Ababa owing to their ease of accessibility to the researcher and representation of diverse student population. The schools selected were Nigat Kokeb Primary School, Birhan Guzo Secondary School and Dejazmach Wondirad Preparatory School. The sample size for the comparison group was determined based on matching (1:1) with age, sex and grade of samples of SWHIs group. Stratified random sampling method was utilized to select

comparison samples of SWOHIs from the three chosen schools. The bases of stratification were grade level and similarity in age and sex with samples of SWHIs. From each grade level, the sample of SWOHIs was drawn using simple random sampling technique. In general, a total of 262 SWOHIs selected as comparison group. Among the selected 262 SWOHIs, 254 (97%) participated in the study. Eight (3%) of selected SWOHIs did not participate in the study mainly because of lack of interest and failure to return a signed parent consent form.

3.4 Instruments of Data Collection

3.4.1 Instruments

Data were collected through self-administered questionnaire. The participants completed an instrument pack consisting of the demographic questionnaire and three self-report measures which included the Perceived School-Related Stress Scale (Murberg & Bru, 2004), Psychological Capital Questionnaire (Luthans, Avolio, et al., 2007) and the Strengths and Difficulties Questionnaire (Goodman et al., 1998). Additionally, school record review was conducted for obtaining students' semester average marks.

3.4.1.1 Demographic Questionnaire

The Demographic Questionnaire was prepared by the researcher for the current study to collect demographic information of the participants. The Demographic Questionnaire, which was completed by the participants, included items pertaining to participants' age, sex, grade, religion, family income, and type and perceived severity of health impairment. SWOHIs were provided to complete the Demographic Questionnaire that omitted the items enquiring about type and perceived severity of health impairment. The type and perceived severity of health impairements were considered as potential confounding variables that would affect the relationships specified in the model and thus were treated as controls during the SEM analysis.

3.4.1.2 Perceived School-Related Stress Scale

To assess school-related stress, the adpated Perceived School-Related Stress Scale developed by Murberg and Bru (2004) was used. The perceived school-related stress Scale has 16 items assessing students' stressful situations at school. The perceived school-related stress scale includes 4 subscales: difficulties with peers at school (5 items; e.g., difficulties with your friends at school), worries about school achievement (5 items; e.g., being worried about grades), schoolwork pressure (3 items; e.g. thinking that schoolwork has been too demanding) and parent and/or teacher conflicts (3 items; e.g., difficulties with your teachers). Respondents reported the extent of stressfulness of each situation indicated in the measure over the last month. The items were rated on a 6-point scale ranging from 0 (no stress) to 5 (severe stress). Total school-related stress score was obtained by summing the reported scores for each of the 16 item, with higher scores indicating high school-related stress.

The factor structure of the Perceived School-Related Stress Scale had been previously explored using factor analysis with grades 8, 9 and 10 secondary school students in Norway (Murberg & Bru, 2004). The scale exhibited good internal consistency reliability as well as convergent and discriminant validity. In the original scale, the internal consistency reliability coefficients of the sub-factors of the scale ranged from .61 to .80 and the Cronbach's alpha value for the overall school-related stress scale was .83 (Murberg & Bru, 2004). In the present study, the internal consistency reliability of the overall scale was .90 and Cronbach's alpha values for the subscales ranged from .78 for schoolwork pressure to .88 for difficulties with peers.

3.4.1.3 Psychological Capital Questionnaire

The Psychological Capital Questionnaire with twenty four items (PCQ-24) was adapted and used to assess students' PsyCap in the present study. PCQ-24 was originally developed for measuring employees' PsyCap in work settings (Luthans, Avolio, et al., 2007)

and then adapted and employed for assessing students' PsyCap in academic settings in prior studies (e.g., Jafri, 2013; Lutahns et al., 2012; Tjakraatmadja et al., 2011). The items of PCQ were rated on a six point scale ranging from 1 (strongly disagree) to 6 (strongly agree). PCQ comprises of four subscales, with each subscale consisting of six items, namely (1) Self-efficacy (e.g., I feel confident to represent my class in meetings with teachers and management), (2) Hope (e.g., I can think of many ways to reach my current academic goals), (3) Resilience (e.g., I feel I can handle many things at a time related to my academics), and (4) Optimism (e.g., I always look on the bright side of things regarding my academics). Total scores of the four subscales are summed together to generate the overall PsyCap score. Items 13, 20 and 23 are negatively worded and were reverse scored.

The possible overall PsyCap score ranges from 24-144, with higher scores signifying greater PsyCap. Luthans et al. (2008) showed the Cronbach's alpha coefficient of the overall PCQ to be .93 and internal consistency coefficients of the four sub-scales were found to be .92, .87, .83, and.77 for self-efficacy, hope, resilience and optimism respectively. In the present study, the alpha values for each of the four subscales (.87 for self-efficacy, .88 for hope, .87 for resilience and .86 for optimism) as well as the overall PsyCap measure (.92) demonstrated good reliability.

The higher order factor structure of the overall PsyCap measure has shown strong factor analytic fit and adequate convergent and discriminant validity as demonstrated by confirmatory factor analyses (e.g., Luthans, Avolio, et al., 2007). Furthermore, results of a series of competing confirmatory factory analyses performed with maximum likelihood methods with diverse samples and in various contexts provided strong support confirming the higher order factor structure as the best fit model of the overall PsyCap measure (e.g., Avey et al., 2010; Luthans et al., 2010; Görgens-Ekermans & Herbert, 2012; Wang et al., 2014).

Permission to use PCQ-24 free of charge for the present study was obtained from Mind Garden, Inc. (www.mindgarden.com).

3.4.1.4 Semester Average Score

Average marks secured by students' for one school semester were used to assess academic achievement. These scores were collected from the students' school records. Higher scores indicate higher academic achievement.

3.4.1.5 The Strengths and Difficulties Questionnaire

The Strengths and Difficulties Questionnaire (SDQ), self-reported form, was utilized to measure behavior problems of students (Goodman et al., 1998). SDQ was developed by Goodman in the mid 1990's as a behavioral attributes screening instrument in children and adolescents. SDQ has three report forms: self, teacher and parent rating forms. SDQ consists of 25 items and enquires about the presence of positive and negative behavior attributes over the previous 6 months. The 25 items are further divided into five sub-scales with each sub-scale comprising of five items. These sub-scales include: (1) Emotional Symptoms Scale (e.g., ''I worry a lot.''), (2) Conduct Problems Scale (e.g., ''I fight a lot. I can make other people do what I want.'') (3) Hyperactivity Scale (e.g., "I'm restles; I cannot stay still for long."), (4) Peer Problems Scale (e.g., ''Other children or young people pick on me or bullied me."); and (5) Prosocial Behavior Scale (e.g., "I am helpful if someone is hurt, upset or feels ill."). Every item was rated on a 3-point scale with 0 (not true), 1 (somewhat true), and 2 (certainly true) such that the possible total scores of each sub-scale ranged from 0 to 10 points.

All items added, except the items about prosocial behavior, generated a total difficulties score, with a range of 0–40. Responses for negatively phrased items were rated from 0 to 2 and positively phrased items were scored inversely from 2 to 0. In this approach, greater scores show greater behavior problems.

In the original study, the internal consistency reliabilities of the self-report SDQ and its sub-scales were assessed using Cronbach's alpha coefficient (Goodman et al., 1998). It was reported .82 for the total difficulties scale, .75 for emotional symptoms, .72 for conduct problems, .69 for hyperactivity, .61 for peer problems and .65 for prosocial behavior. In the current study, a Cronbach's alpha of .84 was obtained for the total difficulties scale. The sub-scales of SDQ have demonstrated adequate internal consistencies as follows: emotional symptoms (Cronbach's α =.74), conduct problems (Cronbach's α = .72), hyperactivity (Cronbach's α = .74), peer problems (Cronbach's α = .73), and prosocial behavior (Cronbach's α = .74).

SDQ has been translated in over 83 different languages and can be used free of charge for research purposes (Hoosen, Davids, de Vries & Shung‐King, 2018). Several studies showed adequate convergent and discriminant validity for the SDQ across informants and settings (e.g., Goodman, 2001; Goodman, Lamping & Ploubidis, 2010; Hoosen et al., 2018; Puffer et al., 2012).

3.4.2 Validation of Instruments

First, the researcher asked the authors of the instruments for authorization to use the measures for research purposes. The request was performed through authors' email for Perceived School-Related Stress Scale and the email address of *Mind Garden, Inc.* for PCQ-24 and SDQ can be downloaded from *Youth in mind* website (http://sdqinfo.org) free of charge for research purposes. Once the authorization was granted, the next step was the translation and back translation of the tools by four language experts. Initially, the instruments were translated from English to Amharic independently by two doctoral students from the departments of foreign languages and literature at Addis Ababa University. Next, the translated Amharic versions were again back-translated into English by two other independent translators from similar educational program and department (i.e., doctoral

students from the departments of foreign languages and literature, Addis Ababa University) who didn't see the original version of the instruments. Then, the two translated versions were compared to make sure that the translations were as accurate and complete as possible regarding content and meaning and a final version resulted. Finally, the translated instruments were submitted to a panel of five expert reviewers, who were students in the doctoral program at School of Psychology and Department of Special Needs Education in Addis Ababa University, for their judgment of relevance and appropriateness of the instruments for the purpose of the study. On the bases of the suggestions provided by expert reviewers, some changes were made in the language format of the measures. Accordingly, the content validity of the instruments was ensured.

The final versions of the Amharic translated instruments were pilot-tested before the main data collection. For conducting the pilot test, 80 students including 40 SWHIs and 40 SWOHIs were recruited. The SWHIs involving of 20 students with DM and 20 students with HD were selected through proportionate stratified random sampling technique from the diabetic and cardiac clinics of Zewditu Hospital. SWOHIs were also selected using stratified random sampling technique from three government schools in Addis Ababa: namely, Hamle 1 primary school, Misrak Goh secondary school and Abiyot Kirs college preparatory school.

The purpose of the pilot test was to improve item clarity, relevance and feasibility of the questionnaires. Out of the 80 respondents who had been selected to participate in the study, 74 of them (36 SWHIs and 38 SWOHIs) completed the questionnaire which indicated a high rate of reponse (92%). According to the results of the pilot test, rewording and amendment of some items used in the Amharic translations were made. Due to the small sample size included in the pilot test, confirmatory factor analyses (CFAs) were not performed to analyze the construct validity of each measure. However, for the purpose of assessing the reliability of the instruments, Cronbach's alpha coefficient test was performed

using SPSS version 23 for measures of school-related stress, PsyCap, and behavior problems. The Cronbach's alpha values for each measure and subscales during pilot test and main study are presented in table 2.

Table 2

Internal Consistency Reliability of Instruments (Cronbach's Alpha Values)

No.	Scale	No. of Items	Cronbach's Alpha	
			Pilot Test	Main Study
1	Perceived School-Related Stress Scale	16	.86	.90
	Peer-related stress	5	.84	.88
	School achievement-related stress	5	.83	.88
	School work related stress	3	.73	.78
	Parent/teacher related stress	3	.72	.78
2	Psychological Capital Questionnaire	24	.87	.92
	Self-efficacy	6	.83	.87
	Hope	6	.84	.88
	Resilience	6	.83	.87
	Optimism	6	.81	.86
3	Total Difficulties Scale/ SDQ	20	.80	.84
	Emotional Symptoms	5	.72	.75
	Conduct Problems	5	.70	.72
	Hyperactivity	5	.71	.74
	Peer problems	5	.70	.73

Normally, Cronbach's alpha values range between 0 and 1 (Nunally & Bernstein, 1994). George and Mallery (2010) had suggested the following criteria to be used as rules of thumb for describing internal consistency: if the value of alpha (α) is ≥ .9 = Excellent, ≥ .8 =

Good, ≥.7 = Acceptable, ≥.6 = Questionable, ≥.5 = Poor, and <.5 = Unacceptable. As it is shown in table 2, results of the reliability analysis of the data for the the pilot test and main study revealed that all of the measures had alpha value of .70 and greater and were considered acceptable. An alpha value equal to and exceeding .70 indicates adequate internally consistency of the instruments and good measures of the constructs used in the study (Hair et al., 2010; Nunally & Bernstein, 1994). In general, the reliability analysis results showed that the instruments used for this study were reliable.

3.5 Procedures of Data Collection

After the instruments were compiled, letter of contact was taken from the Department of Special Needs Education of Addis Ababa University. Next, permission to undertake the study was obtained from the Institutional Review Board of College of Health Sciences of Addis Ababa University at Tikur Anbessa Specialized Hospital. Participants were contacted during their medical follow up visit and appointments in the outpatient centers. Initially, the purpose, importance and use of the study were clearly communicated to participants and their parents and then written informed consent from parents and assent from students was obtained. Participants were informed that they have the right to participate or decline to participate or withdraw from the study at any point and time. Partcipants were also assured of anonymity and confidentiality of the collected information. After informed consent and assent were obtained, all the instruments were administered individually to each participant. For the sake of data collection, the researcher recruited three research assistants and thorough training was given to them on how to administer the measures and collect data. Careful supervision was done by the researcher throughout the data collection process which took place during the 2017/18 academic year.

Regarding the comparison group of students, Premission to carry out the study was gained first from school principals at each school and subsequently from their homeroom

teachers. Then, participants were informed about the purpose of the study. Participants were also guaranteed that participation was completely voluntary, anonymous and confidential. After parent and participant consent was received, the questionnaire pack was distributed and filled out in the classrooms during regular class time at the approval of teachers.

3.6 Methods of Data Analysis

This section describes statistical analysis methods employed to answer research questions and preliminary actions that were taken to prepare the data for analyses. The gathered data for the study was coded, entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0 and Analysis of Moment Structures (AMOS) version 23.0 software programs (see Arbuckle, 2014).

3.6.1 Statistical Analysis

Descriptive statistics including frequencies, percentages, mean and standard deviation were computed to summarize demographic characterstics of the partcipans and the variables of the study. SEM with AMOS was conducted to determine the association between predictor variables (i.e., school-related stress and PsyCap) and outcome variables (i.e., academic achievement and behavior problems). AMOS is the most commonly used SEM analysis software program for research (Airbuckle, 2014) and considered user-friendly and relatively easy to specify models, compared to other software programs used for SEM analysis such as LISREL, Mplus, and EQS (Garson, 2015). To examine the potential moderating effects of PsyCap in the association between school-related stress and school-related outcomes, multi-group SEM analysis was employed. The type and severity of health impairment were considered as potential confounders and controlled during SEM analysis. Since the primary focus of this study was examining the associations among school-related stress, PsyCap and academic achievement and behavior problems of SWHIs, only data for students in the health impairements group were used for SEM and the subsequent multi-group analyses.

To find out if students in the health impairments group differed from the comparison group of students with no health impairments with regard to the predictor variables measures of school-related stress and PsyCap, independent samples *t*-test was carried out. To examine differences between students with and without health impairments pertaining to measures of the study outcome variables (i.e., academic achievement and behavior problems), one-way multivariate analysis of variance (MANOVA) was employed. Version 23.0 SPSS was utilized for analyses of the descriptive statistics, independent samples *t*-test and one-way MANOVA.

3.6.2 Data Cleaning and Preparation

Before analyses were carried out, the collected data were checked for missing values, outliers, normality, linearity, and multicollinearity. This screening procedure is very essential to prepare the data for multivariate analyses. This activity was performed using SPSS version 23 software program.

3.6.2.1 Missing Data

Schumacker and Lomax (2010) suggest that less than five percent missing data on any single item within a large sample provides little concern. Thus, a single-imputation method of mean substitution is recommended (Kline, 2011). Additionally, it is vital to assess the kind of missing data to identify whether the missing values occurred randomly or non-randomly (Pallant, 2011). In other words, if the missing values are arbitrarily dispersed within the items of the questionnaires, then such data can be ignored, however, if the missing values are markedly concentrated within specific parts of the questionnaires, then it creates great problems to make generalization on the basis of results (Tabachnick & Fidell, 2013). The final dataset was checked for missing data. There were 239 cases of SWHIs and 254 cases of SWOHIs in the dataset. In this study, five cases with missing data for one or more entire

measures were identified (three cases from SWHIs group and two cases from the SWOHIs group) and these cases were removed from the data file. The remained data set consisted of 236 cases of SWHIs and 252 cases of SWOHIs.

3.6.2.2 Outliers

Outliers are defined as **"**observations with a unique combination of characteristics identifiable as distinctly different from the other observations*"* (Hair et al., 2010, p. 62). Identifiying and managing of outlies is very important in view of the fact that it may critically distorts the normality of the the data and seriously affect statistical analysis (Kline, 2011). For that reason, both univariate and multivariate outliers were assessed in this study. Univariate outliers were examined by analyzing frequency distributions of z-score of the data as recommended by Tabachnick and Fidell (2013). According to Tabachnick and Fidell (2013), cut-off scores of $z \leq \pm 3.29$ are considered as acceptable range of values. All the cases were well underneath that threshold. To observe multivariate outliers, Mahalanobis distance and Box plot method was applied. As a result, five cases (three from SWHIs group and two from SWOHIs group) were removed from the data file due to the presence of multivariate outliers. This process left 233 cases of SWHIs and 250 cases of SWOHIs for further analysis.

3.6.2.3 Normality

Analysies of skewness and kurtosis values of the study variables were carried out to determine normality of the data. George and Mallery (2010) suggested that skewness and kurtosis values within +/- 2 indicate normal distribution of the data. In this study, the skewness scores range from .080 to .792 and kurtosis values range from .179 to 1.284 in absolute value (see table 3). The results showed that all skewness and kurtosis values fall within an acceptable range signifying that the data is fairly normal.

Table 3

Normality Assessment Using Skewness and Kurtosis

	Variable	Mean	Standard Deviation	Skewness	Kurtosis
1.	Perceived School-related Stress	2.37	.64	-.132	-1.131
2.	Psychological Capital	3.69	.93	-.080	-1.284
3.	Academic Achievement	60.43	9.12	.792	.179
4.	Behavior Problems	.63	0.31	.198	-.676

3.6.2.4 Linearity

Linearity indicates the steady change of slope representing the pattern of association between an independent and a dependent variable (Hair et al., 2010). In the present study, linearity was checked through doing curve estimation regression between different pairs of predictor and criterion variables. In curve estimation, various relationships between an independent and a dependent variable like linear, inverse, quadratic, cubic, compound, growth and exponential relations were estimated. To go ahead with analysis, all the associations between an independent and a dependent variable are required to be sufficiently linear. The results of the analysis indicated that that all the relationships between predictor and outcome variables were adequately linear (i.e., all p values were less than .01) (see Appendices B1-B4).

3.6.2.5 Multicollienearty

Multicollinearity is a condition in which two or more independent variables turn out to be highly correlated with each other (Pallant, 2011). According to Pallant (2011), multicolliearity can be assessed by tolerance and VIF (Variance Inflation Factor) values. Tolerance values more than .10 and VIF values lesser than 3.0 can signify the absence of multicollinearity (Kline, 2011). In this study, the collinearity diagnostic analysis between the

independent variables showed tolerance value above .10 and VIF value lower than 3.0 (see Appendices B5-B8), indicating the absence of multicollinearity in the data. Furthermore, Pearson moment correlation coefficient analysis results indicated that the independent variables correlation coefficient values were less than +/- 0.85. Correlation cofficients (*r*) greater than +/- .85 are indicative of potential multicollinearity problems (Kline, 2005).

In a nutshell, based on the preliminary data analysis, ten questionnaires filled by the respondents (i.e., six cases from SWHIs and four cases from SWOHIs categories) were eliminated owing to missing and outlying values. Accordingly, data from 483 respondents were found valid and used for the study. Thus, the completed and valid data obtained from 233 (89%) of SWHIs group and 250 (92%) of SWOHIs group were used for analysis of the study.

Chapter Four

Results

This chapter presents the results of the study under several headings following the order of the research questions and/or objectives of the study. First, demographic characterstics of the respondents and descriptive statistcs of the study variables are described. Frequency, percentage, mean and standard deviation were used to summarize demographic profiles of the respondents and the study variables. Second, the results of CFA followed by SEM are reported. Initially, CFA was carried out to examine construct validity of the measurement model and after that SEM was employed to assess the associations between predictor and criterion variables. Third, results of multi-group SEM analysis are presented. Multi-group SEM analysis was applied to determine the impact of moderating variable in the model. Finally, results of group differences on the study variables are reported. Independent sample *t* test and MANOVA were performed to explore potential differences in study variables of interest between students with and without health impairments.

4.1 Demographic Characteristics of the Students with Health Impairments

In this study 233 students with health impairments have participated. In order to provide clear demographic information about participants of the study, data about respondents' personal profile such as age, sex, grade, religion, family income, type and severity of health impairment were collected. The demographic profiles of SWHIs are summarized in Table 4. The ages of participants ranged from 12 to 19 with a mean of 15.5 years (*SD*=2.32). The sample consisted of 110 (47.2%) males and 123 (52.8%) females. This shows that the sex ratio of the sample is quite balanced. With respect to participants' grade, 114 (48.9%) were in the upper cycle of primary school (grade 5-8), 58 (24.9%) were in secondary school (Grade 9-10) and 61 (26.2%) were in preparatory schools (grade 11-12).

Table 4

Demographic Characteristics of Students with Health Impairments

Demographic Variable		Mean	SD
Age		15.5	2.32
		Frequency (n)	Percentage (%)
Gender			
	Male	110	47.2
	Female	123	52.8
Grade			
	5	31	13.3
	6	27	11.6
	7	32	13.7
	8	24	10.3
	9	33	14.2
	10	25	10.7
	11	32	13.7
	12	29	12.4
Religion			
	Orthodox	149	63.9
	Muslim	45	19.3
	Protestant	36	15.5
	Others	3	1.3
Family Income			
	Low	73	31.3
	Medium	134	57.5
	High	26	11.2
Type of health impairment			
	Diabetes mellitus	115	49.4
	Heart Disease	118	50.6
Perceived severity of health impairment			
	Mild	76	32.6
	Moderate	113	48.5
	Severe	44	18.9

The majority of participants were Orthodox Christians (63.9%) followed by Muslims (19.3%) and protestants (15.5%) respectively. Students with DM and HD accounted for 49.4% and 50.6% of the sample respectively. This shows that students in both groups of health impairments are represented by that proportionate sample sizes in the study. Most of the participants were from medium income families (57.7%). Almost half of the respondents (48.5%) reported their perceived severity level of health impairment as moderate. For the demographic characteristics of SWOHIs, see appendix B9.

4.2 Descriptive Analysis of the Variables

Descriptive statistics including means and standard deviations of the study variables are presented in Table 5.

Table 5

Descriptive Statistics of the Variables

Variables	Minimum Possible Score	Maximum Possible Score	*Mean (M)*	*SD*
School-related Stress	0	80	2.37	.64
Psychological Capital	24	144	3.69	.93
Academic Achievement	0	100	60.43	9.12
Behavior Problems	0	40	.63	.31

Note: SD=Standard Deviation

The mean scores and standard deviations of the predictor, moderating and outcome variables of the study were as follows: School-related stress (*M*=2.37, *SD*= .64), psychological capital (*M*=3.69, *SD*=.93), academic achievement (*M*= 60.43, *SD*= 9.12) and behavior problems (*M*=.63, *SD*=.31).

4.3 Structural Equations Modeling Analysis

This study was conducted following the two-stage approach recommended by Anderson and Gerbing (1988) in SEM analysis. During the first stage, the measurement model demonstrating the extent to which a specific group of observed variables are indicative of a particular latent variable was assessed by the use of CFA. In the second stage, the structural model determining the multiple associations between the variables was examined.

4.3.1 Measurement Model

In this study, CFA was first conducted for each measure of the latent constructs separately to evaluate how good observed variables are related to latent variables and then the whole measurement model comprising of all the variables in the study was assessed to verify its goodness of fitness and construct validity. The CFA was performed with AMOS 23.0 statistical package using maximum likelihood estimatinon method due to normal distributions of observations in the data (Kline, 2005). In AMOS graphic interface of a measurement model (see Figure 2), the large oval shapes represent the latent factors, the square shapes represent the measured variables, the small oval shapes represent the error term for each measured variable and double-headed arrows express covariance between latent variables (Arbuckle, 2014). Prior to the measurement model assessment, the data were cleaned from potential problems of missing data, multivariate outliers, normality, linearity and multicollinearity (see section 3.6.2).

To evaluate the model goodness of fit with the data, a combination of several fit indices were used. Applying multiple indices provides adequate information of model fit (Hair et al., 2010). Thus, in the current study, five model fit measures including Normed Chi-square (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) were employed to evaluate the measurement and also the structural model of the study. These measures of

model fit have been recommended by Kline (2011) and commonly reported in research (McDonald & Ho, 2002). The following guidelines were used for good fit: χ^2/df ratio values lower than 3.0 (Kline, 2005), GFI values above .90 (Hair et al., 2010), and RMSEA values less than .06, TLI and CFI values more than .95 (Hu & Bentler, 1999). Furthermore, the Akaike Information Criterion (AIC) and Expected Cross Validation Index (ECVI) were utilized to compare non-nested competing models with lower AIC and EVCI values reflecting the model with the better fit to the data (Blunch, 2008). The recommended cut-off score values for selected fit indices are summarized in Table 6.

Table 6

Recommended Values for Selected Fit Indices

Fit Indices	Recommended Value	Source
χ^2	NA	
df	NA	
χ^2/df	< 3.0	(Kline, 2005)
RMSEA	< .06	Hu and Bentler (1999)
GFI	> .90	Hair et al. (2010)
TLI	> .95	Hu and Bentler (1999)
CFI	> .95	Hu and Bentler (1999)
AIC	The smaller the better	Blunch(2008)
ECVI	The smaller the better	Blunch (2008)

The main purpose of conducting CFA is to examine construct validity of measurement models of latent constructs (Hair et al., 2010). Construct validity mainly includes convergent and divergent validity of measurement models. Convergent validity assesses how well indicators of a distinctive latent variable are supposed to converge or share a high percentage of variance in common (Anderson & Gerbing, 1988). In this study,

convergent validity was assessed through examining the magnitude of item factor loadings and their corresponding statistical significance, average variance extracted (AVE) and construct realiability (CR) of each factor. AVE demonstrates the amount of variance in a set of items explained by the latent factor while construct reliability reflects the overall internal consistency of a group of items indicating a latent variable (Hair et al., 2010). In the current study, convergent validity was evaluated by the following rules of thumb: an item factor loading ≥.5 and significant t-values ($p < .01$), AVE ≥.5 and CR ≥.7 (Fornell & Larcker, 1981; Hair et al., 2010; Kline 2011; Tabachnick & Fidell, 2013).

Assessment of discriminant validity is the other part of construct validity. Discriminant validity examines the degree of distinctiveness of a construct from other related constructs (Hair et al., 2010). In this study, discriminant validity was determined by comparing factor AVE values with the squared correlations between any two factors. Thus, when the AVE values were greater than the squared correlation values between any two factors, in that case, the factors were considered discriminant (Fornell & Larcker, 1981). In the subsequent section, CFAs results for each measure of the latent variables of the study including school-related stress, psychological capital and behavior problems and also the overall measurement model are presented.

4.3.1.1 Perceived School-Related Stress Scale

The proposed perceived school-related stress scale comprises of four-factors: peer-related stressor (PRS), school achievement-related stressor (SARS), school work pressure (SWP) and parent and/or teacher-related stressor (PTRS). PRS is reflected by five indicators (PRS 1-5), SARS is reflected by five indicators (SARS 1-5), SWP is reflected by three indicators (SWP 1-3) and PTRS is reflected with three indicators (PTRS1-3). CFA was performed to examine the four factors and the one factor model solutions of perceived

school-related stress scale (PSRSS) (Murberg & Bru, 2004) (see Appendix C1). The one factor model poorly fitted the data as reflected through the following model fit indicators (χ^2=655.947, *df* =104, χ^2/df = 6.307, RMSEA =.151, GFI =.664, TLI =.638, CFI = 0.686) while the four factor model fit the data adequately (χ^2 =115.922, *df* =98, χ^2/df = 1.83, RMSEA =.28, GFI =.943, TLI = .988, CFI = .990). Thus, fit statistics of the CFA demonstrated that the four factors model was a better fit to the data than the one factor model.

The CFAs results supported adequacy of the instruments convergent validity. The standardized factor loadings of all the items of the school-related stress measure were significant (p<.001) and good enough in excess of the acceptable threshhold value of >.50 (see Appendix B10). AVE and CR values were calculated by using the procedures formulated by Fornell and Larcker (1981). The results demonstrated that AVE and CR values for the four sub-factors of the construct were higher than .50 and .70 respectively, establishing the convergent validity of the four factors structure of PSRS model. To assess discriminant validity, squared correlations was examined and compared to AVE values. AVE values of each factor were more than the values of the squared correlations between the other factors, confirming the discriminant validity of the factors in PSRSS measurement model (see appendix B11). Thus, the four subscales of perceived school-related stress represent one underlying construct, that is, school-related stress.

4.3.1.2 Psychological Capital Questionnaire

CFA was conducted for both one-factor model measuring one overall factor and four factor model and second order factor model of PsyCap measure (Luthans, Avolio, et al., 2007). The one factor measurement model of PsyCap did not fit the data satisfactorily (χ^2 =1168.650, *df* =252, χ^2/df = 4.64, GFI=.610, TLI= .596, CFI =.631, RMSEA=.125). CFA results showed both the four factor model comprising six items in each factor (i.e., self-

efficacy, hope, resilience and optimism) ($\chi 2$ =291.853, *df* =246, $\chi 2/df$ = 1.186, GFI=.906, TLI= .979, CFI =.982, RMSEA=.028) and second order factor model of PsyCap measure ($\chi 2$ =291.926, *df* =248, $\chi 2/df$ = 1.177, GFI=.906, TLI= .980, CFI =.982, RMSEA=.028) demonstrated good model fit. However, the ACI and ECVI indices for the second order factor model (AIC=395.926, ECVI=1.707) reflected a slightly better model fit than the four factor measurement model of PsyCap (AIC=399.853, ECVI=1.724). This proves that the proposed second order factor model represented with four sub factors (see appendix C2) offers a better fitting model than the one factor and the four factor models.

Further analyses of the CFA results showed that the items standardized factor loadings were all significant (p <.001) and above the minimum threshold of .50 (see appendix B12). The four sub-factors had AVE and CR values greater than .50 and .70 correspondingly, demonstrating good convergent validity. Moreover, analysis of discriminant validity showed that AVE values of each factor was higher than the squared associations between the sub-factors, confirming discriminant validity amongst the four sub-factors of the construct (see appendix B13).

4.3.1.3. Strengths and Difficulties Questionnaire

CFA was conducted both for the two-factor model comprising of internalizing and externalizing problems and the hypothesized four-factor model of Total Difficulties Scale (TDS) of SDQ. The model fit parameter estimates demonstrated the following for the two factors TDS ($\chi 2$ =186.453, *df* =165, $\chi 2/df$ = 1.130, RMSEA =.24, GFI =.930, TLI =.975, and CFI =.978) and for the four factor structure TDS ($\chi 2$ =186.162, *df* =164, $\chi 2/df$ = 1.135, RMSEA =.24, GFI =.931, TLI =.974, and CFI =.977). Indicators of goodness of fit for the two models were almost similar, signifying that they had approximately equal explanatory power. Further analysis of non-nested model comparisons using AIC and EVCI test revealed

that four-factor model (AIC=276.453, EVCI=1.192) showed slightly better fit than the two-factor model (AIC=278.162, EVIC= 1.199). Therefore, the four factor model of TDS was preferred as good fitting model (see appendix C3). Furthermore, the four-factor model provided a significantly better solution with respect to divergent validity of the measure than the two factor model.

The CFA results indicated that all the standardized parameter estimates of the measured variables of the sub-factors of TDS were significant ($p < .001$) and had achieved the minimum recommended factor loading value of .50. In addition, CR values for the four sub-factors were above the recommended threshold (.70), demonstrating good construct reliability, though AVE values were slightly lesser than the recommended value of .50 (see appendix B14). However, modest correlations between each items of the four sub-factors suggested its convergent validity. Discriminant validity of TDS was established as each sub-factor was characterized by a relatively higher AVE values than the squared inter-factor correlations of the construct (see appendix B15).

4.3.1.4 Overall Measurement Model

After validity and reliability of the measurement scales of each construct of the hypothesized model in the study has been verified, further CFA was undertaken to assess the adequacy of overall measurement model. All measures of model variables of school-related stress, PsyCap, total difficulties score and semester average scores of students were allowed to intercorrelate simultaneously to represent the whole measurement model. Figure 2 shows the measurement model of the study using AMOS pictorial representation.

First, the original conceptualization of the measurement model with the original 16 indicators of perceived school-related stress, 24 indicators of psychological capital and 20 indicators of total difficulties score and the observed variable of total marks average were subjected to CFA. The CFA output of the initial measurement model demonstrated that the

model poorly fitted with the data. ($\chi 2$ = 3750.269, *df*=1707, $\chi 2/df$=2.197, RMSEA = .072, GFI=.604, TLI= .616 and CFI = .630). This showed that RMSEA, GFI, TLI and CFI values were all lower than the suggested parameters indicated in table 6.

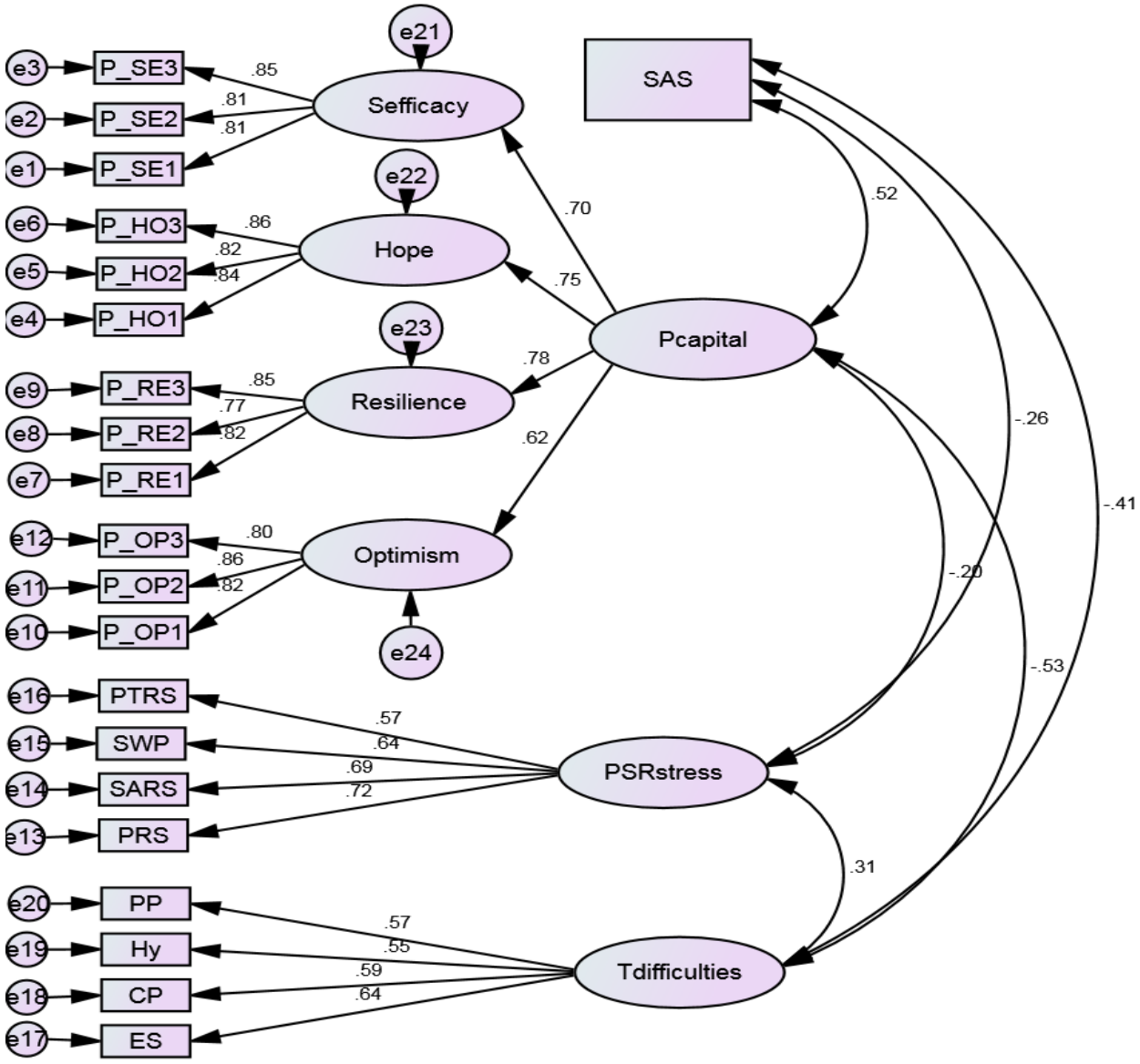


Figure 2: Measurement Model

Note: SAS=Semester Average Score, Pcapital=Psychological Capital, PSRstress=Perceived school related stress, Tdifficulties= Total Difficulties Scale.

To improve model fit, item-parceling strategy was used for each construct. Two ways of item parceling strategies (subset-item-parcel and all-item-parcel approaches) were implemented (Matsunaga, 2008). For psychological capital, with subset-item-parceling technique, three parceled indicators for each individual factor (i.e., self-efficacy, hope, resilience and optimism) were created following the procedure recommended by Russell, Kahn, Spoth, & Altmaie (1998). Accordingly, items with the maximum and minimum factor loadings were summed to different parcels sequentially. The mean score for two items in the same parcel was used as the score of the parceled indicator. In addition to parcelling, second-order factor model was employed as a best model solution for psychological capital. For perceived school-related stress and total difficulties scales, parcelling all items into a single parcel strategy was employed. Therefore, for school-related stress, the composite scores of the four perceived school-related stress sub-scales were used as four parceled indicators and for total difficulties score, the summed scores for each of the four sub-scales (i.e., emotional symptoms, conduct problems, hyperactivity and peer problems) were used as four parceled indicators.

After adjustments made to the initial measurement model to improve model fit, the second CFA was carried out to determine its goodness-of-fit. During the second CFA, psychological capital was considered as second order construct with 12 parceled indicators and the four sub-scales of perceived school-related stress scale and total difficulties scale were taken as observed indicators of the latent constructs (see Figure 2). The findings of the second measurement model showed substantial improvement and fitted to the data in every respect of the parameters suggested in Table 6: ($\chi2$= 207.059, *df*= 180, $\chi2/df$= 1.150, RMSEA= .025, GFI= .922, TLI= .984, and CFI= .986). All the fit indices have met the suggested threshold value of a good fit displayed on Table 6. Both AIC and EVCI values indicated that the second model with the adjustments made (AIC=309.059, EVCI=1.332)

showed a better fitting and more parsimonious model than the initial model (AIC=3996.269, EVCI=17.225). Therefore, the model has been successfully verified to fit the data suitably. Table7 illustrates fit statistics for the initial and final measurement model.

Table 7

Fit Statistcs for the Initial and Final Measurement Model

Overall Measurement Model	Fit Measures							
	$\chi 2$ (*df*)	$\chi 2$ /*df*	RMSEA	GFI	TLI	CFI	AIC	EVCI
Initial Model	3750.269 (1707)	2.197	.072	.604	.616	.63	3996.269	17.225
Final Model	207.059 (180)	1.150	.025	.922	.984	.986	309.059	1.332

Since the second measurement model offered a very good fit, the construct validity involving both convergent and discriminant validity of the model was assessed with CFA. The results showed that all indicators were found to have high factor loadings (exceeding .50) and were significant ($p < .001$) (see Table 8). The higher the factor loadings with the resultant significant t-values, the more compelling proof that the observed variables represent the underlying latent constructs (Bollen, 1989). The AVE value for psychological capital has met the recommended cut-off point (greater than .50). However, AVE values were less than 0.5 for school-related stress and total difficulties score. The CR values of psychological capital and school-related stress were above .70 where as total difficulties scale had a CR value of .68 (see Table 9). According to Hair et al. (2010), CR values above .60 are considered acceptable where as CR values above .70 are considered to be good. In other words, CR values for the constructs were all above the acceptable threshhold.

Table 8

Standardized Factor Loadings of the Three Latent Variables in the Overall Measurement Model

Constructs/Factors	Indicators	Factor Loadings	t values	P
Perceived School-related Stress				
	PRS	.72	Scaling	
	SARS	.69	8.055	***
	SWP	.64	7.753	***
	PTRS	.57	7.094	***
Psychological Capital				
Self Efficacy	Parcel 1	.81	Scaling	
	Parcel 2	.81	12.825	***
	Parcel 3	.85	13.384	***
Hope	Parcel 1	.84	Scaling	
	Parcel 2	.82	14.202	***
	Parcel 3	.86	14.936	***
Resilience	Parcel 1	.82	Scaling	
	Parcel 2	.77	12.398	***
	Parcel 3	.85	13.614	***
Optimism	Parcel 1	.82	Scaling	
	Parcel 2	.86	13.647	***
	Parcel 3	.80	12.908	***
Total Difficulties	ES	.64	Scaling	
	CP	.59	6.339	***
	Hy	.55	6.112	***
	PP	.57	6.243	***

*Note: Scaling indicates fixed parameters, of which values are 1 and therefore path coefficient significance test was not necessary. *** indicates p<.001.*

Finally, discriminant validity of the variables was determined by comparing the AVE of each latent variable and squared correlation for the variables following the suggestion of Fornell and Larcker (1981). As shown in Table 9, results of the analysis demonstrated the discriminant validity of the variables specified in the measurement model, in which AVE for each construct was greater than the squared correlations involving the latent variables. Taken together, evidences support the goodness-of-fit, convergent as well as discriminant validity of the overall measurement model. Following evaluation of the whole measurement model for adequacy and construct validity, the data were all set for structural model analysis. Thus, the next phase was to carry out analysis of the structural model and present the major findings derived from SEM analysis and investigate the proposed associations in the conceptual model.

Table 9

Convergent and Discriminant Validity for Each Measures of the Variables in the Measurement Model

Variables	CR	PSRSS	PCQ	TDS	SAS
Perceived School-related stress Scale (PSRSS)	.753	**.434**			
Psychological capital Questionnaire(PCQ)	.804	.040	**.682**		
Total Difficulties scale (TDS)	.680	.098	.279	**.348**	
Semester Average Score (SAS)	-	.070	.268	.172	-

Note: CR= construct reliability, AVE values are indicated in bold in the diagonal and other values in the off-diagonal are the squared correlations.

4.3.2 Structural Model

The aim of the structural model analysis was to examine the predictor variables contribution and significance to the explanations of criterion variables. The structural model was depicted by removing double-headed arrows demonstrating covariations between the constructs and replacing with single-headed arrows representing regression weights (Kline, 2005). The structural model included unobserved or latent variables and their indicators and also associations between the study predictor and criterion variables. In this research, school-related stress and PsyCap were specified as predictor variables and academic achievement and behavior problems were represented as criterion variables (see Figure 3). The procedure of evaluation of the structural model incorporated assessment of model fit indices and standardized path cofficients. The goodness-of-fit of the structural model was determined by employing the same model fit measures and evaluation criteria applied for assessment of the measurement model (see Table 6). Maximum Likelihood Estimation procedure using AMOS was utilized to determine the path coefficients between the study variables.

Goodness-of-fit indices were first assessed to ascertain if the structural model fits the data well as suggested by many researchers (e.g., Anderson & Gerbing, 1988; Hair et al., 2010 2010; Tabachnick & Fidel, 2013). The analysis results of of the initial structural model produced good model fit: ($\chi 2$=246.758, *df*=215, $\chi 2/df$= 1.148, RMSEA=.025, GFI= .917, TLI= .981, CFI= .984). Once model fit statistics of the structural model were met, then coefficient parameter estimates of the structural paths were examined. The structural model of the study is presented in Figure 3. In the path diagram of the structural model, predictor variables of school-related stress and PsyCap had no single-headed arrows pointing toward them whilst criterion variables in the model had at least one single arrow heading towards them.

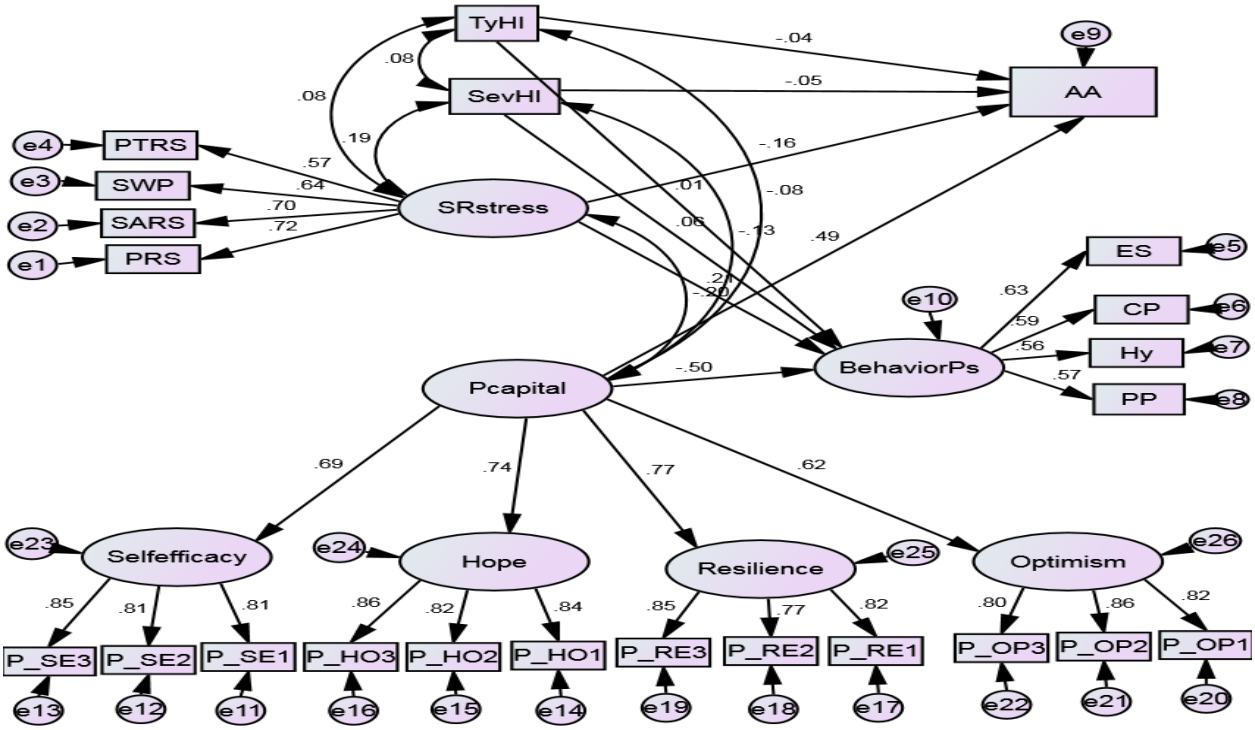


Figure 3: Structural Model

Each of the paths estimated in the structural model signifies the extent of the associations among the variables specified in the research model. Both standardized (β) and unstandardized structural path estimates (*t values and p values*) were used for analysis. A *t* value, also named the critical ratio, was derived by dividing each unstandardized path estimate to its standard error estimate. A t-value greater than 1.96 is significant at .05 level and a t-value greater 2.58 is significant at .01 level and a t-value greater than 3.29 is significant at .001 level (Suhr, 2006). The potential confounding effects of type and severity of health impairment in the relationship between variables specified in the model were controlled.

Table 10

Structural Model Results

No	Paths	Standardized Estimate (β)	t value	p value
1	SRS ⟶ AA	-.16	-2.27*	.016
2	SRS ⟶ BPs	.21	2.31*	.021
3	PsyCap ⟶ AA	.49	5.90***	.000
4	PsyCap ⟶ BPs	-.50	-4.65***	.000
5	TyHI ⟶ AA	-.04	-.70	-.702
6	TyHI ⟶ BPs	.007	.09	.926
7	SevHI ⟶ AA	-.053	-.89	-.895
8	SevHI ⟶ BPs	.058	.77	.440

Note: *p< .05, ***p<.01, ***p<.001 (two-tailed test)

As shown in Table 10, after controlling for the type and perceived severity of health impairments, the results of SEM analysis indicated that school-related stress was significantly and negatively associated with academic achievement (β= -.16*, *p<.05)* and positively with behavior problems (β=.21*, *p<.05).* Conversely, PsyCap was significantly and positively associated with academic achievement (β=.49***, *p<.001)* and negatively with behavior problems (β= -.50***, *p<.001).* Assessment of the results of of the structural model showed that the proposed conceptual model was supported by the data. The pathways from control variables of type and severity of health impairments to outcomes of academic achievement and behavior problems were all found statistically not significant.

Further analysis of the results indicated that school-related stress and psychological capital significantly predicted outcomes of academic achievement and behavior problems. Accordingly, school-related stress explained 12% (R^2= .12, p < .05) of the variation in academic achievement and 15% (R^2 = .15, p < .05) of the variation in behavior problems. On the other hand, PsyCap accounted for 31% (R^2 = .31, p < .001) of the variance in academic achievement and 33% (R^2 = .33, p < .001) of the variance in behavior problems.

4.4 Multi-Group Analysis

This section presents results of the moderating influences of PsyCap in the associations between school-related stress and outcome variables of academic achievement and behavior problems among SWHIs. Multi-group SEM analysis was performed to find out whether relationships hypothesized in the model differs based on the value of the moderator as suggested by Hair et al. (2010). The chi-squared difference ($\Delta\chi 2$) statistic was used for comparison of competing nested SEM models based on the suggestions of several researchers (e.g., Awang, 2012; Byrne, 2016; Garson, 2015; Hair et al., 2010).

In the present study, the moderating variable of PsyCap was primarily metric in nature. Therefore, median-splitting method was used to convert the metric scale into a non-metric or categorical scale. The median value of PsyCap for the whole sample of SWHIs was 3.75. Accordingly, two groups were produced on the basis of the median value of PsyCap in the whole sample data. The first group data file included respondents who scored PsyCap lower than the median and were labeled as low PsyCap group (n=117) and the second group data file had respondents who scored higher than the median and were labeled as high PsyCap group (n=116). Prior to testing for the potential moderating influence of PsyCap in the relationship between school-related stress and outcomes, measurement model invariance was assessed following the recommended procedures of Hair et al. (2010).

4.4 .1 Measurement Invariance

CFA was run with maximum likelihood estimation technique using AMOS to assess the measurement invariance. The multi-group measurement and structural model goodness-of-fit was assessed by using CFI and RMSEA, the most commonly utilized fit statistics for multi-group analysis (Byrne 2016; Hair et al., 2010; Tabachnick & Fidell, 2013). The joint criteria of CFI> .95 and RMSEA< .06 were employed to evaluate the adequacy of model fit of both multi-group measurement and structural models (Hu & Bentler, 1999).

Table 11

Measurement Invariance Test: Model Differences between the two Groups

Model	Model Fit Indices				Model Differences		
	$\chi 2$	*df*	CFI	RMSEA	$\Delta\chi 2$	Δdf	p
Low PsyCap	21.88	25	1.000	.000			
High PsyCap	18.74	25	1.000	.000			
Configural Invariance	40.62	50	1.000	.000			
Metric Invariance	43.77	56	1.000	.000	3.15	6	.79

Note: $\Delta\chi 2$ = Difference in $\chi 2$ values between the models; Δdf = Difference in number of degrees of freedom between the models.

Measurement invariance is a fundamental precondition in multi-group SEM analysis to determine whether the measures forming the measurement model denote the same thing to members of different groups (Hair et al., 2010). Unless and otherwise, the comparisons are not valid and group differences in standardized path coefficients of the measured variables would not be truly construed (Byrne, 2016). Even if a wide range and levels of equivalence assessments are available in the literature, the most frequently examined invariance testing in research constitutes configural and metric invariance (Hair et al., 2010). Configural invariance indicates the similarity of factor structures across the groups which can be

demonstrated by good fit indices in the multi-group measurement model (Brown, 2015). Assessment of the measurement model across the two groups (see Appendices C4-5) showed excellent fit for the model as it is displayed in Table 11 (CFI=1.000; RMSEA =.000), indicating that the model was configurally invariant.

After ensuring the presence of configural invariance, metric invariance test was carried out to assess the extent to which factor structure are equivalent across groups in the analysis of multi-group measurement model through CFA. According to Hair et al. (2010), metric invariance is met when the chi-square difference test between the constrained and unconstrained models indicates non-significant for the complete set of constructs. Accordingly, in the first model the latent factor loadings were allowed to be free and take on different values in each of the two models. In the second model, the constraints were set for the factor loadings to be equal across the two groups. As it is displayed in Table 11, the chi-square difference was non-significant (p=.79), leading to the conclusion that the two groups are invariant at the model level.

Table 12

Measurement Invariance test: Factor loading Differences between the two Models

Path	Unconstrained Model		Constrained Model		Indicator Differences		P value	Invariance result
	$\chi 2$	*df*	$\chi 2$	*df*	$\Delta\chi 2$	Δdf		
SRS<---SARS	40.62	50	40.64	51	.02	1	.888	Invariant
SRS <--- SWP	40.62	50	40.84	51	.22	1	.639	Invariant
SRS<--- PTRS	40.62	50	40.93	51	.31	1	.578	Invariant
BPs<---CP	40.62	50	42.51	51	1.89	1	.169	Invariant
BPs <---Hy	40.62	50	40.99	51	.37	1	.543	Invariant
BPs <--- PP	40.62	50	42.40	51	1.78	1	.182	Invariant

Further analysis of chi-square difference tests were conducted to examine whether each of the eight indicators reflect the two latent constructs equivalently for the two groups of PsyCap (low levels of PsyCap and high levels of PsyCap). On the basis of the results of the chi-square difference test analysis, all of the measurement indicators were non-significant ($p>.05$) between the constrained and unconstrained models as shown in Table 12, indicating full metric invariance for indicators of the constructs. Thus, the measurement model fulfilled the criteria for full metric invariance across the two PsyCap groups. In other words, all indicators factor loading estimates were invariant and can equivalently measure the latent variables in both groups of SWHIs (low levels and high levels of PsyCap).

4.4.2 Multi-Group Structural Models Analyses

Once configural and metric invariance was ascertained, multi-group structural analysis was performed to estimate the potential moderating influence of PsyCap in the associations between school-related stress and outcome variables of academic achievement and behavior problems. To perform multi-group analysis, first the unconstrained model was estimated where all path parameters were allowed to be varied across groups. Second, the constrained model was estimated where all path parameters were set to be equal across the two groups. In the third stage, the values in model fit between equally contarined model and the the unconstrained model was compared using chi-square difference test. If there occurs a significant difference ($p<.05$) between the two models, a moderating influence can be inferred as recommended by Hair et al. (2010). The structural models for low and high levels of PsyCap groups' models controlling for type and severity of health impairments are shown in Figures 3 and 4.

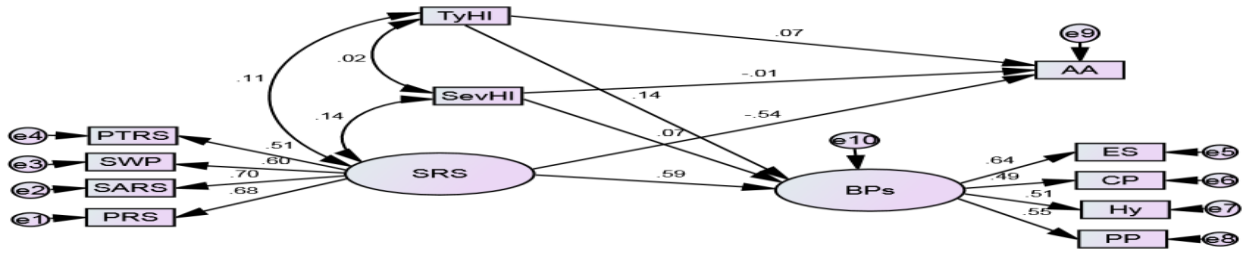


Figure 4: Structural Model- Low Levels of Psychological Capital (Standardized Solution)

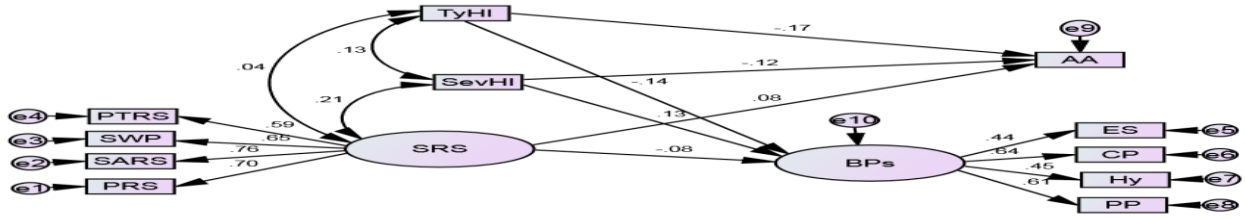


Figure 5: Structural Model- High Levels of Psychological Capital (Standardized Solution)

First, two separate models were run for the two groups of psychological capital. The goodness-of-fit for low levels of psychological capital group model ($\chi 2$=34.07, df=38, CFI=1.000; RMSEA = .000) and high levels of psychological capital group model ($\chi 2$=31.84,df=38,CFI= 1.000; RMSEA= .000) showed excellent fit. It indicates that the model fits the data for both groups very well. Although, both groups use the same path

diagram, they may have different parameter estimates. Thus, the next investigation was to find out whether their parameter estimates of the paths were significantly different for the two groups. According to the result of the multi-group analysis, χ2 value of the unconstrained model was 65.92 with 76 degrees of freedom, and χ2 value of all the paths across the moderator groups equally constrained model was 98.99 with 86 degrees of freedom; thus, the difference between the two models was 33.07 with 6 degrees of freedom. The χ2 value of 33.07 with 6 degrees of freedom at the .001 significance level is 22.46, indicating that there was a significance difference between the two models. A statistical difference between the unconstrained model and the paths equally constrained model showed that the moderating influence of PsyCap did occur in the model.

Table 13

Multi-Group SEM Analysis Results

Model Description	Model Fit Indices				Model Differences		
	χ2	*df*	CFI	RMSEA	Δχ2	Δ*df*	p
Low PsyCap	34.07	38	1.000	.000			
High PsyCap	31.84	38	1.000	.000			
Unconstrained Model	65.92	76	1.000	.000			
Constrained Model	98.99	82	0.948	.030	33.07	6	.000
b1 (SRS to AA) constrained model	80.98	77	0.988	.015	15.06	1	.000
b2 (SRS to BPs) constrained model	80.59	77	0.989	.014	14.67	1	.000

In order to clearly assess in which path the moderation occurred, post-hoc separate analyses were performed by constraining one path at atime to obtain chi-square difference of

each path constrained model and the unconstrained model. Accordingly, multi-group analysis was carried out (controlling for type and severity of health impairment) with equal constraints on two paths of the research interest (i.e., the paths between school-related stress and academic achievement and school-related stress and behavior problems). First, the path from school-related stress to academic achievement was assessed. Results of the b1 constrained model (SRS to AA) showed acceptable fit ($\chi 2 = 80.98$, df = 77, CFI = .988, RMSEA = .015). The significance of the difference between the two groups was estimated by comparing the chi-square differences ($\Delta\chi 2$) of the unconstrained model and the b1 equally constrained model. The chi-square difference result between unconstrained model and b1 constrained model ($\Delta\chi 2$ *(1) =15.06*, p <.001) showed a significant difference (decline in fit). This indicates that high level of PsyCap moderates the relationship between school-related stress and academic achievement. In other words, what this implies is that high level of PsyCap acts as a buffer against the adverse effects of school-related stress on academic achievement.

Next, the path from school-related stress to behavior problems was estimated. As it can be seen in table 14, the result of the b2 equally constrained model showed significantly worse fit than the unconstrained model. The $\chi 2$ value of the unconstrained model was 65.92 with 76 degrees of freedom and the $\chi 2$ value of the b2 (SRS to BPs) constrained model was 80.59 with 77 degrees of freedom. The $\chi 2$ difference test between the two models was significant ($\Delta\chi 2$ *(1)* =14.67, p <.001). The significant difference in chi-square value for the path from school-related stress to behavior problems between the constrained and unconstrained models for the two groups indicated that the path was moderated by PsyCap. Simply stated, the undesirable effect of school-related stress on behavior outcome depends on the levels of psychological capital. Thus, PsyCap plays a moderating function in the relationship between school-related stress and behavior problems.

Table 14

Standardized Parameter Estimates for Low and hig Levels of Psychological Capital (Unconstrained Model)

Path	PsyCap Low				PsyCap High			
	Estimate (β)	SE	t-value	Sig.	Estimate (β)	SE	t-value	Sig.
BPs<---TyHI	.136	.062	1.269	.204	-145	.045	-1.194	.232
BPs <---SevHI	.070	.043	.656	.512	132	.033	1.068	.286
BPs <--- SRS	.595	.089	3.777	.000	-.076	.049	-.560	.576
AA <--- SRS	-.542	1.818	-4.674	.000	.078	1.767	.731	.465
AA <--- TyHI	.072	1.343	.848	.397	-166	1.567	-1.813	.070
AA <--- SevHI	-.007	.952	-.081	.935	-118	1.171	-1.250	.211

The multi-group analysis of standardized path coefficients (β) indicated that under conditions of low levels PsyCap, the relationship of school-related stress and academic achievement was significant and negative (β= -.542, p<.001). In contrast, under the conditions of high levels of PsyCap, the relationship between school-related stress and academic achievement was positive and non-significant (β=.078, p=.465). The results of the multi-group analysis also demonstrated that the association between school-related stress and behavior problems (β= .595, p<.001) was positive and significant in low PsyCap groups. On the contrary, the influence of school-related stress on behavior problem (β= -.076, p= .576) was negative and non significant for high levels PsyCap group. This implies that school-related stress positively influences behavior problems under states of lower levels of PsyCap where as, in the situations of higher levels of PsyCap the association between school-related stress and behavior problems becomes considerably very low.

4.5 Comparison of Students with and without Health Impairments

4.5.1 Descriptive Statistics of the Study Variables for Both Samples

Descriptive statistics depicting mean values and standard deviations of the study variables for both samples of students with health impairments and their counterparts without health impairments appear in table 15.

Table 15

Descriptive Statistics of the Variables for the Two Sample Groups

Variables	SWHI (n=233)		SWOHIs (n=250)	
	Mean (*M*)	*SD*	Mean (*M*)	*SD*
School-related Stress	2.37	.64	2.17	.71
Psychological Capital	3.69	.93	3.86	.89
Academic Achievement	60.43	9.12	63.32	10.04
Behavior Problems	.63	.31	.53	.28

As shown in Table 15, inspection of the mean values demonstrated that SWHIs recorded higher mean scores of school-related stress (*M*=2.37, *SD*=0.64) and behavior problems (*M*=.63, *SD*=.31) than SWOHIs, while the mean scores of PsyCap (*M* = 3.69, *SD* = .93) and academic achievement (*M*= 60.43, *SD*=9.12) for SWHIs were lower when compared to SWOHIs. To determine whether there exist significant differences in the mean values for the predictor variables, independent samples *t* test was performed.

4.5.2 Comparison of Students with and without Health Impairments in School-related Stress and Psychological Capital

Independent samples *t*-tests were employed to examine mean differences between SWHIs (n=233) and SWOHIs (n=250) on their composite scores of the two predictor variables of school-related stress and PsyCap. Levene's test of equality of variance on each of the the predictor variables was non-significant (>.05) indicating that the variances of the two

groups were equal on the two variables of school-related stress (.090) and PsyCap (.197). The results revealed that a significant difference of means between SWHIs and SWOHIs on school-related stress (t(481)=3.30, p<.01). However, the magnitude for the group difference in the means was very small. Cohen's *d* for this difference was .30, showing small effect size. According to Cohen (1988), the difference of the two sample means divided by the pooled standard deviation yields the effect size. Based on the suggested guideline provided by Cohen (1988), the effect size index *d* value for independent samples *t* test is interpreted as .20 = small, .50 = medium, and .80 = large effect. The study also demonstarted a significant difference between students with and without health impairements with respect to PsyCap (t= -2.000, $p < .05$), indicating that SWHIs tend to have considerably low PsyCap in comparison to SWOHIs. Table 16 presents the results of the independent samples *t*-tests.

Table 16

Results of Independent Samples t-tests

Variable	**Levene's Test for Equality of Variances Assumed**		***t*-test for Equality of Means**							Cohen's *d*
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Differencee	95% CI of the Difference		
								Lower	Upper	
SRS	2.89	.090	3.30**	481	.001	.203	.062	.082	.324	.30
PsyCap	1.67	.197	-2.00*	481	.046	-.165	.083	-.328	-.003	.18

Note: SRS= School-related stress

*p<.05, ** p<.01

4.5.3 Comparison of SWHIs and SWOHs on Academic Achievement and Behavior Problems

To examine differences on the outcome variables of academic achievement and behavior problems of students as a function of their health impairment status, one-way MANOVA was undertaken. Assumptions of MANOVA, including normality, linearity, collinearity, and homoscedasticity (Levene's test of error variance and Box's test of homogenityof variance-covariance matrices were non-significant, $p>.05$) were satisfied. Therefore, for the MANOVA test statistic Wliks' lambda (λ) test was used as it is considered the preferred measure in research when assumptions of MANOVA are not violated compared to other commonly used test statistics such as Pillai's trace, Hotellings's trace and Roy's largest root (Hair et al., 2010; Tabachnick & Fidell, 2013). Mean scores and standard deviations for groups are provided in Table 15.

Before proceeding with MANOVA analysis, Pearson's Moment Corrrelation Cofficient was also conducted to find out if there was significant and moderate correlation between the dependent variables of the study (i.e., academic achievement and behavior problems) (Hair et al., 2010; Tabachnick & Fidell, 2013). The analysis revealed that the correlations between academic achievement, and behavior problem was, $r = -.315$, $p < .001$, which met the requirement of MANOVA. According to Cohen (1988), correlation values ranging from +/- (.30 to .49) reflects a moderate positive/negative linear relationship. The MANOVA results of the study are summarized in table 17.

Table 17

MANOVA Results for the Effect of Health Impairment Status on Outcome Variables

Effect	Wilks' Lambda Value(λ)	F	Hypothesis df	Error df	Sig.	Partial Eta Squared ($\eta^{2)}$
Intercept	.017	13956.299	2.000	480.000	.000	.983
HIstatus	.964	8.897	2.000	480.000	.000	.036

As shown in Table 17, the multivariate test results using the Wliks' lambda (λ) test statistic demonstrated that there was significant differences between SWHIs and SWOHIs on combined measures of outcome variables as a function of health impairment status of the students (λ =.964, F (2, 480) = 8.897, p< .001). Partial eta squared value (η2=.036) explained that only 3.6 percent of the variances in total scores of academic achievement and behavior problems were explained by the group.

Following a significant multivariate effect, univariate test results (ANOVAs) were observed to identify the effects of health impairment status of the students on each dependent variable of academic achievement and behavior problems separately. The results revealed significant group differences in academic achievement, F (1, 481) = 10.920, p < .01, η2 = .022), and behavior problems F(1, 481) = 12.168, p <.01, η2 = .025) indicating that academic achievement was significantly lower while behavior problems was higher among SWHIs than SWOHIs. As shown in Table 18, the magnitude of the effect of students' health impairment status on academic achievement (η2 = .022) and behavior problems (η2 = .025) was small, with health impairment status accounting 2.2% and 2.5% of the variations in academic achievement and behavior problems respectively. The summary of a follow-up univariate test results of between-subject effects of health impairment status of the students on academic achievement and behavior problems is presented in Table 18.

Table 18

Univariate Test Results for the Effects of Health Impairment Status on Academic Achievement and Behavior Problems

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	AA	1007.733	1	1007.733	10.920	.001	.022
	BPs	1.086	1	1.086	12.168	.001	.025
Intercept	AA	1846981.69	1	1846981.69	20015.18	.000	.977
	BPs	160.970	1	160.970	1803.125	.000	.789
HIstatus	AA	1007.733	1	1007.733	10.920	.001	.022
	BPs	1.086	1	1.086	12.168	.001	.025
Error	AA	44386.230	481	92.279			
	BPs	42.940	481	.089			
Total	AA	1897708.50	483				
	BPs	204.265	483				
Corrected Total	AA	45393.964	482				
	BPs	44.026	482				

Chapter Five

Discussion

The present study examined the associations between predictor variables (i.e., school-related stress and PsyCap) with outcome variables (i.e., academic achievement and behavior problems) in SWHIs, as well as the potential moderating influence of PsyCap in the school-related stress and outcomes relationship. In addition, this study investigated mean differences in the variables of interest (i.e., school-related stress, PsyCap, academic achievement and behavior problems) between students with and without health impairments.

In this chapter, the major findings of the study are discussed within the perspective of the existing research literature. Based on the study aims, the chapter is organized in three main sections. The first section provides detailed discussion of the relationships of predictor variables of school-related stress and PsyCap with school-related outcomes of academic achievement and behavior problems. The second part is focussed on discussing the results pertaining to the influence of the moderator, which is PsyCap, on the relationships between schoo-related stress and outcomes of academic achievement and behavior problems. The last part of the chapter presents a detailed discussion pertaining to comparison analyses results between students with and without health impairments on measures of the study variables.

5.1 Associations of School-Related Stress and PsyCap with School-Related Outcomes

SEM analysis was performed to determine the proposed link between each of the two predictor variables of school-related stress and PsyCap and the two outcome variables of academic achievement and behavior problems among SWHIs, after controlling for type and perceived severity of health impairments. This study contributes to the existing research literature by collectively investigating the relationships among school-related stress, PsyCap and school-related outcomes of academic achievement and behavior probems in a sample of SWHIs.

On the basis of the transactional stress theory (Lazarus & Folkman, 1984) and agentic perspective of social cognitive theory (Bandura, 2008), it was anticipated that school-related stress and PsyCap would be significantly associated with academic achievement and behavior problems of SWHIs. The results provided support for the predicted relationships. The results demonstrated that school-related stress and PsyCap were significantly related with outcomes of academic achievement and behavior problems. Additionally, analysis of the data indicated that school-related stress explained 12% of variance in academic achievement and 15% of variance in behavior problems; while PsyCap explained 31% of variance in academic achievement and 33% of variance in behavior problems after controlling type and perceived severity of health impairments. Thus, school-related stress and PsyCap were found significant contributors to the explained variance of outcomes of academic achievement and behavior problems for SWHIs.

5.1.1 School-Related Stress and Academic Achievement

As expected, the result obtained from the SEM analysis indicated that school-related stress had a significant negative association with academic achievement in SWHIs. This implies that higher school-related stress results in lower academic achievement. Several explanations can be offered for this finding. One possible explanation may be stress tends to impede the students ability to cope productively (Schmeelk-Cone & Zimmerman, 2003) such as using a study plan, employing helpful time and task management techniques and effective learning strategies which can affect academic achievement negatively. In addition, stress appears to disrupt cognitive function which could influence essential skills for learning such as ability to listen, speak, read, write and understand (Lee et al., 2015).

Another explanation may be that stress could affect student engagement in learning (Manikandan & Neethu, 2018). Engaged students opts to be attentive and participate actively in class discussions, show strong interest and motivation to learn and exert due effort in class

activities which would contribute to their academic success (Marks, 2000). Conversely, students who are not engaged or disengaged are less attentive and unwilling to participate in class discussions, frequently looked bored, give up on easy tasks and have attendance problems (Angus et al., 2009). Therefore, school-related stress may also lead to disengagement from school, which in turn brings about decreased academic performance. Student disengagement is also associated with negative school outcomes including low educational aspirations, and high dropout rates from school, high rates of disciplinary problems and high levels of depressive symptoms (Wang & Peck, 2013). Furthermore, stress related to school is linked to memory impairments in students' learning which may lead to difficulties in retrieving the learned information, decreased concentration and inability to transform knowledge into performance during tests and examinations (McEwen & Sapolsky, 1995; Newcomer, Craft, Hershey, Askins, & Bardgett, 1994)

School is a highly competitive place, which emphasizes academic acceleration and evaluation and ambitious striving for success (Schraml, Perski, Grossi & Makower, 2012). Academic success in a school setting could determine their promotion to the next grade and could pave the way for students' future career prospects. Furthermore, highly stressed students are predisposed to low academic achievement and subsequently they may not be able to complete highschool and hence fail to join college and have greater likelihood to dropout from school (Cameron & Heckman 1993). In addition to their chronic health conditions and developmental risk, school adolescents with health impairments may have to deal with a number of school-related concerns including peer relationship problems, worry about tests and exams, too much schoolwork, and feelings of pressure to do well by teachers and parents. These could lead SWHIs to be at risk of a greater level of school-related stress which hinders acquisitions of academic competencies and deplete their energy and resources

as well as reduce their eagerness and dedication for developing the capacities required for citizenship, parenthood responsibilities and the real world of work (Elias, 1989).

This finding is in line with the results of previous studies that have linked school-related stress with lower academic achievement (Alam, 2016; Kaplan et al., 2005; Lee et al., 2015; Piekarska, 2015). This study offers empirical evidence for the significant association of school-related stress and academic achievement with particular school sample of SWHIs. Greater levels of perceived stress can aso lead to deleterious consequences such as depression (Thorsteinsson, Ryan, & Sveinbjornsdottir, 2013) and suicidal ideation and attempts in students (Ang & Huan, 2006). Therefore, school based prevention and intervention should be designed aimed at improving SWHIs competency to handle stress related to school. Research suggested that adaptive coping methods including forward planning of time and executing meaningful activities, problem solving, cognitive reappraisal, positive thinking, accepting responsibility and seeking social support are highly important in dealing with school-related stress in SWHIs (Seiffge-Krenke et al., 2001).

5.1.2 School-Related Stress and Behavior Problems

Consistent with predictions, the present finding demonstrated that school-related stress was significantly related with behavior problems among SWHIs. This finding suggests that school-related stress largely appears to directly affect behaviors of SWHIs. That means higher school-related stress results in higher incidence of behavior problems. One possible reason for this finding may be that students who are under so much pressure from school-related demands and challenges tend to engage in emotional and behavioral problems as a sort of destructive-maladaptive coping mechanism (Eppelmann et al., 2016). Another possible reason for this result could be that, managing health-related challenges may already be difficult for adolescents with medical conditions, when joined with school-related stress (e.g., limitations in school activities, falling behind in schoolwork and missed school days),

they may become frustrated and act out or become withdrawn and quiet (Compas et al., 2012; Seiffge-krenke et al., 2001).

This finding is consistent with other studies (Eppelmann et al., 2016; Natvig et al., 1999; Windle & Windle, 1996) that found a significant positive asssociation between school-related stress and behavior problems. A study has also shown that stressful life events such as academic problems and family conflict predict behavior adjustment problems in children and adolescents living with diabetes (Holmes et al., 1999). Furthermore, high levels of school-related-stress have been found to be significantly linked with various negative outcomes such as poor health (Alfven, Östberg & Hjern, 2008; Haugland et al., 2003), psychosomatic symptoms (Hjern et al., 2008; Murberg & Bru, 2004; Natvig et al., 1999) higher levels of psychological distress (Torsheim, Aaroe & Wold, 2003), and depressive symptoms and decreased life satisfaction (Moksnes, Løhre, Lillefjell, Byrne & Haugan, 2016).

Taken together, these results support the premises of transactional theory of stress (Lazarus & Folkman, 1984), which proposes that stress is a product of the connection between the person and its environment. According to this model, stressful events may be perceived as a challenge or as a threat depending on individual cognitive appraisal of the stressor, as well as individual coping resources of the stressful situation. Even though, all students on the ground objectively meet the same school situation, requirements and demands, some are at risk for experiencing stress while others are not. When students perceive their school demands as a challenge, stressful events can stimulate an impoved sense of competence and enhanced capacity to learn and behave properly. On the other hand, when school demands are perceived as a threat and exceed coping resources available to students, stress can induce feeling of desperation and overwhelming sense of defeat and consequently leads to decreased academic achievement (Windle & Windle, 1996) and increased behavior

problems (Eppelmann, et al., 2016; Windle &Windle, 1996) and poor psychological health and overall functioning (Lazarus & Folkman, 1984).

The results are also comparable with prior study in Ethiopia (Mulatu, 1997), which revealed that Ethiopian school adolescents experienced a range of stressors that were mostly evaluated as stressful and unmanageable which in turn leads to decrease in academic competence and increase in emotional and behavioral symptoms. This study extends previous findings by examining the applicability of transactional stress theory (Lazarus & Folkman, 1984) to explain the associations of school-related stress and academic and behavior outcomes in samples of SWHIs populations.

5.1.3 Psychological Capital and Academic Achievement

In the current study, PsyCap was significantly and positively related to academic achievement in SWHIs. It means that increased level of PsyCap is related to increased academic achievement. One plausible explanation for this association might be that students with greater PsyCap possess strong psychological resources to handle school demands and difficulties adequately, which in turn helps to increase academic achievement (Jafri, 2013).

Studies have established the significant positive associations between PsyCap and desirable work-related outcomes including organizational commitment, job satisfaction and job performance (Avey et al., 2011; Luthans, Avolio, et al., 2007). In other words, there is evidence that employees with higher levels of PsyCap in the work environment were found to be more committed at work, better contented with their job, and strong performers at their job. Work environment of employees is comparable to students' school environment in many respects such as high workload, deadlines, and performance (Hjern et al., 2008; Modin et al., 2011; Natvig et al., 1999). The same thing appears to apply for students. Therefore, another possible reason for this finding is that PsyCap could also play an essential role in increasing

students' motivation and energy to study hard, enjoy their school activities and likely contributes to greater academic achievement.

The third explanation is that PsyCap could facilitate the drive for purposeful, agentic behavior toward effectively performing goals and tasks that brings into improved performance (Avey et al., 2011). That is, when students try harder to succeed, and put forth motivated effort they are more likely they perform better. Thus, it can be argued that PsyCap can be a very useful resource for SWHIs who learn under difficult circumstances as they must initiate and persist in their learning to achieve better academic success. The present result is similar with findings of previous researches that have found a positive association between PsyCap and academic achievememet (Jafri, 2013; Luthans et al., 2012; Tjakraatmadja & Febriansyah, 2007). Studies have also shown that PsyCap was a strong and positive predictor of students' academic adjustment (Liran & Miller, 2019), and academic engagaement and well being (Datu & Valdez, 2016). Several studies have also demonstrated that each component of PsyCap such as self-efficacy (Chemers et al., 2001; Valentine, et al., 2004), hope (Curry et al., 1997; Gilman et al., 2006; Snyder et al., 1991; Snyder et al., 2002), resiliency (Borman & Overman, 2004) and optimism (Huan et al., 2006; Seligman, 2006) have significant positive influence to students' academic achievement. This result, thus, provides evidence that PsyCap helps to increase academic achievement in SWHIs.

5.1.4 Psychological Capital and Behavior Problems

In addition, the current study demonstrated a significant negative relationship between students' PsyCap and behavior problems. This result indicates that a higher level of PsyCap is associated with a lower risk of behavior problems. One possible explanation for this finding is that greater levels of PsyCap have been demostrated to be significantly related to positive emotions (Avey et al., 2008) which inturn are linked to engagement in adaptive behaviors and also fewer problem behaviors. Fredrickson (2001) posited that the positivity

character of PsyCap can assist in facilitating positive affective conditions that promote the broadening of one's thought-action repertoires, and may lead to immediate and long-term adaptive benefits. Therefore, students who have higher PsyCap may possibly have greater positive affect and consequently results to fewer behavior problems. Another explanation for the result may be the agentic motivational propensity captured by the construct of PsyCap that may enhance internalization, determination, and capability to originate several pathways to accomplish a goal and lead to enhanced favorable employee attitudes, behaviors, and performance outcomes and reduced unfavorable attitudinal, performance and behavioral outcomes (Avey et al., 2011).

This result is comparable to a prior study by Wang et al. (2014), which found that PsyCap had a significant and negative relationship with behavior problems. Moreover, previous researches have demonstrated that individual factors of PsyCap such as lesser self-efficacy, lower resilience (Sun & Shek, 2012) and lower hope (Hagen et al., 2005) were significantly related with higher rates of behavioral problems. A study has also shown that higher levels of PsyCap significantly and negatively predicted mental health problems and substance abuse problems (Krasikova, Lester, & Harms, 2015) and positively predicted desirable psychological outcomes such as psychological wellbeing (Datu &Valdez, 2016; Shakarami, et al., 2014) and psychological adjustment (Noor, Gul, & Khalil, 2017). Taken together, the results suggest that high level of PsyCap has a direct beneficial impact to increases in academic achievement and decreases in behavior problems. These findings extend the existing knowledge by investigating the direct beneficial role of PsyCap for improving school-related outcomes (i.e., increasing academic achievement and decreasing behavior problems) of SWHIs in the academic environment.

5.2 Moderating Effects of Psychological Capital in the Relationships between School-Related Stress and School-Related Outcomes

Multi-group SEM analysis was undertaken to address the potential moderating influences of PsyCap in the associations between school-related stress and outcomes of academic achievement and behavior problems among SWHIs, after controlling for type and perceived severity of health impairments.

As predicted, the results of analysis indicated that PsyCap moderated the relationship between school-related stress and both outcomes of academic achievement and behavior problems among SWHIs. Collectively, these findings add to the existing knowledge the moderating influence of PsyCap in the relationships between school-related stress and outcomes of academic achievement and behavior problems in SWHIs.

5.2.1 Psychological Capital as a Moderator of the Relationship between School-Related Stress and Academic Achievement

As anticipated, the results demonstrated that higher levels of PsyCap moderated the association between school-related stress and academic achievement in SWHIs. This reveals that the association of school-related stress and academic achievement is very minimal for students with higher levels of PsyCap, while the association of school-related stress and academic achievement is stronger for students with lower levels of PsyCap. In other words, school-related stress has a considerable negative effect on the academic achievement of low PsyCap SWHIs, but has little effect on academic achievement of SWHIs who had greater levels of PsyCap. This implies that high levels of PsyCap act as a buffer against the harmful effects of school-related stress on academic achievement.

Several explanations can be given for this moderation. First, greater levels of PsyCap may help students to consider school stressors as challenges instead of harmful threats. Second, PsyCap may very well assist to enhance students' capacity to deal with school

demands and stressful situations (Luthans et al., 2012). Third, possessing greater levels of PsyCap may help to increase task engagement, commitment and satisfaction with life (Avey, et al., 2008), which in turn may aid to resist stressful situations in the school environment and thereby decrease the harmful consequence of school-related stress on students' school achievement.

This finding is in line with the existing research (Gautam & Madhurima, 2018) which indicated that increased level of PsyCap helps to decrease the harmful impacts of stress on academic achievement. This implies that the adverse effect school-related stress may have on academic achievement, depends on other moderating circumstances, such as PsyCap. Thus, the adverse influences of perceived school-related stress in stressful school environment may be diminished or overturned, for instance by developing PsyCap of SWHIs in the school context. For that reason, school personnel need to provide more emphasis on enhancing PsyCap of SWHIs in the school context so as to reduce and/or eliminate the negative effect of school-related stress on academic achievement.

5.2.2 Psychological Capital as a Moderator of the Relationship between School-Related Stress and Behavior Problems

The multi-group SEM analysis results further demonstrated that PsyCap moderated the association between school-related stress and behavior problems. That is, the relationship between school-related stress and behavior problems is very much weaker for students with higher levels of PsyCap and stronger for students with lower levels of PsyCap. This means that school-related stress has a detrimental effect on the behavior problems for those students having lower PsyCap, but has little effect on students having higher levels of PsyCap. This implies that a better PsyCap may help to counteract the adverse influence of school-related stress on behavior problems.

One reason for this finding is that PsyCap seems to enact an integral part in facilitating positive appraisal of negative life events and circumstances (Luthans, Youssef, Sweetman, & Harms, 2013; Luthans, Avolio, et al., 2007; Luthans, Youssef, et al., 2007). Highly stressed students may get frustrated and respond with behavior problems. However, more PsyCap can assist SWHIs to positively appraise the challenging schoolwork demands they face and feel better able to handle stress. Thus, the detrimental impact of stress on behavior problems is more likely to be magnified for students who keep hold of less favorable appraisal and help-seeking behaviors. On the contrary, students who think positively about difficult situations appear to be less predisposed to stress. Therefore, instead of reacting to stressors with behavior problems, students with higher PsyCap tend to adapt well and respond positively to the difficult situation and are more likely to exhibit desirable attitudes and behaviors. The other possible reason is that PsyCap influences social capital (Tamer, Dereli, & Saglam, 2014) and may help to create productive relations with teachers and peers, which in turn could influence behavior problems. That is, students possessing greater PsyCap are more likely to establish supportive interactions with teachers and peers and have sense of good attachment and security at school. Greater relationship with teachers has been found to be associated with positive social, emotional and school-related adjustment in students with disabilities (Murray & Greenwood, 2001). Furthermore, Murray and Greenwood (2001) asserted that students who have supportive relationships with teachers may be less likely to engage in delinquent behaviors because they may be hesitant to risk the consequences that the maladaptive behaviors will have on their relationships with teachers.

The result is in accordance with the findings of Roberts et al. (2011). These researchers reported that that the association between stress and behavior problems was moderated by a person's level of PsyCap. PsyCap works as a buffer to students' stress and enhances students' psychological well-being (Riolli, Savicki, & Richards, 2012). This result

extends the finding from employees in the work setting to students, more specifically to SWHIs in the school situation.

The constituents of PsyCap comprising of self-efficay, hope, resilience and optimism appear to provide students with the useful resources to cope with the stressful situations in school environment. For example, self-efficay gives confidence in one's ability to attain needed outcomes when a person encounters difficulties (Bandura, 1997). Hope consists of willpower and way power thinking of how a person determines his/her goals and generates alternative pathways and contingency plans to accomplish a target with impediments (Snyder, 2000). Resiliency is related to the ability to adjust positively to adversity, as well as to recover more quickly from failure and frustration (Masten & Reed, 2002). Optimism helps to make internal attributions for positive experiences and external attributions for negative incidences, and generally anticipate positive outcomes from one's actions (Seligman, 1998). When combined together, the core construct of PsyCap seems to provide students with the essential resources to handle stress associated with school, resulting in less behavior problems and better academic performance.

The direct and moderating role of PsyCap may play on school-related outcomes accords with the agentic perspective of social cognitive theory (Bandura, 2008), which provided theoretical foundation for PsyCap in this study. This theory postulates that human functioning results from triangular reciprocal casual relations between the individual's personal factors, environment events and behavior (Bandura, 1997). The agentic perspective posits that the individual is an agent who intentionally influences his/her owns life and the environmental events that affect him/her (Bandura, 2008, 2011). Agency relates to the individual's capability to be anticipative, purposive, and self-evaluating and proactive regulators of one's motivation and actions (Bandura, 2001). The underlying theoretical thread that commonly runs through the four individual capacities of PsyCap is of "positive appraisal

of circumstances and probability for success based on motivated effort and perseverance" (Luthans, Avolio, et al., 2007, p. 550) and an internalized sense of agency, control and intentionality (Youssef-Morgan & Luthans, 2015).

The mechanism of agency appears to assist SWHIs to be more motivated toward achieving goals related with school, which in turn positively influences their academic achievement and behavior. Higher level of PsyCap may enhance SWHIs' capability to cope with stressful events and facilitate to evaluate and cognitively structure school stressors as motivating challenges rather than incapacitating threats. In other words, student's greater level of PsyCap can provide vital contribution in facilitaing positive appraisals of school-related stressors and ameliorate its potential hazards on school related outcomes. Understanding the role that PsyCap play in the association of school-related stress and academic achieievement as well as behavior problems may provide practitioners evidences to devise PsyCap intervention to buffer the impacts of school-related stress and increase academic achievement and decrease behavior problems of SWHIs.

5.3 Group Differences in School-Related Stress, Psychological Capital, Academic Achievement and Behavior Problems

Lastly, the present study investigated mean differences in school-related stress, PsyCap, academic achievement and behavior problems between students with and without health impairments. It was expected that levels of school-related stress, PsyCap, academic achievement and behavior problems would vary for SWHIs compared to those who have no health impairments.

Initially, independent samples *t*-tests were carried out to evaluate potential group differences as a function of health impairement status in the two predictor variables (i.e., school-related stress and psychological capital). The results provided evidence that the two groups differed on the measures of the variables studied.

5.3.1 Differences in School-Related Stress

The results of this research revealed a significant difference between students with and without health impairments pertaining to composite mean scores of school-related stress. SWHIs reported significantly higher school-related stress than did SWOHIs. Although the difference found between the groups was small as demonstrated by a small effect size, it cannot be ignored as the detrimental role of heightened stress experience of SWHIs on school outcomes is already evident in the study.

One possible reason may be that SWHIs are confronted with additional unique stressors related to health impairments that may intensify their increased level of school-related stress. Children and adolescents with health impairments appear to impede optimal development in the cognitive, physical and psychosocial domain (Suris, Michaud, & Viner, 2004). In addition to developmental challenges, SWHIs are confronted with intense and continual pain, extended treatment and recovery of the illness, hospitalizations, painful medical procedures, and restriction and limitations of activities (Geist, 2003; Newacheck & Taylor, 1992). The unanticipated, uncontrollable and fluctuating nature of illness symptoms can influence future activities (Compas et al., 2012). SWHIs may run into reduced energy and come across trouble to walk, stand or sit for a lengthy period (Newacheck & Halfon, 1998). The recurrent pain and adverse outcome of the medications may generate dizziness and disorders making it difficult for them to give appropriate attention in classes, complete assignments and keep concentrated during examinations (Compas et al., 2012). Thus, school-related stress is more prone to be exacerbated by stress in other life domains associated with chronic health condition of the students.

This result is quite similar to finding of Seiffge-Krenke et al. (2001) who found that SWHIs experience greater school-related stress than their classmates without health impairments. Early intervention may help to reduce or eliminate school-related stress in

SWHIs and enhance long-term outcomes. If left unchecked or unaddressed, elevated levels of school-related stress in SWHIs may in the long run lead to school failure and drop out and consequently can deprive the future competent workforce of the nation.

5.3.2 Differences in Psychological Capital

Similar to expectations, the current study found a significant difference between the SWHIs and SWOHIs in their composite score of psychological capital. SWHIs scored slightly lower levels of PsyCap compared to SWOHIs. Small effect sizes were observed for the difference. Perhaps the less success on emotional, social and school functioning (Arabiat & Al Jabery, 2013; McCarthy et al., 2002; Pinquart & Teubert 2011; Uzark, et al., 2008) of SWHIs compared to their typically developing peers may contribute to their decreased level of PsyCap. In addition, SWHIs feel different from their peers and frequently experience peer victimization and stigmatization associated with the illness (Forgeron et al., 2010; Sentenac et al., 2012) and dissatisfaction with teachers in school (Murray & Greenwood, 2001), which could negatively affect their positive psychological capacities. Inability to attend school regularly may be another factor that could lead to decreased PsyCap levels in SWHIs. Çimen & Özgan (2018) suggested that positive experiences, supportive school environment, collaboration, improved communication, parent engagement, and convenient physical condition of the school may assist to the promotion of PsyCap. Further research related to the causes of lower PsyCap among SWHIs is warranted.

The result is comparable with the finding of Lavigne & Faier-Routman (1992) who found that SWHIs had reduced positive psychological attributes such as lower self-esteem and self-concept in comparison to peers without health impairments. SWHIs also showed less attainments in favorable outcomes such as life satisfaction (Santos, de Matos, Simões, Fonseca, & Machado, 2013), psychological adjustment (Cadman et al., 1987; Geist, 2003) and psychological well-being (Santos et al., 2015) compared to SWOHIs. This finding

suggests a need to develop and implement specific interventions targeted at increasing PsyCap among SWHIs.

Comparison analyses were also conducted to examine potential group differences on outcome variables. For these analyses, students were grouped by health impairment status (SWHIs and SWOHIs) and a MANOVA was conducted using academic achievement and behavior problems as dependent variables. Results of the multivariate test using the Wliks' lambda (λ) test statistic indicated a significant difference between SWHIs and SWOHIs on combined measures of dependent variables based on health impairment status. Following the results of MANOVA, the corresponding univariate analyses of variance (ANOVAs) results were observed to assess if there were differences on the basis of health impairment status of the students on each dependent variable of academic achievement and behavior problems separately.

5.3.3 Differences in Academic Achievement

The results demonstrated a significant difference in academic achievement between SWHIs and SWOHIs. This shows that SWHIs have lower academic achievement score compared to their typically developing school counterparts. Several factors may be attributed to the less academic achievement of SWHIs. First, the presence of physical symptoms of the chronic illness such as fatigue, lethargy and irritability may reduce self-confidence and motivation in academic activities and affect their academic achievement (Chan et al., 2005; Gorodzinsky et al., 2011; Shaw et al., 2010). Second, chronic illnesses and medication used for treatment may result in neuro-cognitive deficits such as memory difficulties, sight problems, fine motor skills limitations and declined concentration (Thies, 1999). Third, their frequent school absence and missed instructional time may limit their participation in school activities and decrease readiness to learn and they may fall behind peers in school work (Shaw et al., 2010; Thies, 1999). Fourth, greater school-related stress and lower PsyCap, and

higher behavior problems of SWHIs, as it is shown in the present study, may also contribute to their decreased academic achievement. This finding is consistent with previous researches reporting lower scores in academic achievement in SWHIs than school counterparts without health impairements (Fowler et al., 1985; Pinquart & Teubert, 2011; Thies, 1999).

5.3.4 Differences in Behavior Problems

The univariate analysis result also revealed a significant difference in behavior problems between students with and without health impairments. SWHIs reported significantly higher behavior problems than SWOHIs. This implies that SWHIs tends to exhibit more behavior problems than do SWOHIs. One possible reason for the higher levels of behavior problems observed in SWHIs may be frustrations that result from limitation of regular life routines, perceived inability to manage symptoms or the course of the disease, peer isolation as well as treatment side effects (Pinquart & Shen, 2011). In addition, the cumulative effects of the many sources of stress across various settings (e.g. home, school, and hospital) may induce sense of despair and consequently lead to increased behavior problems. Third, parents' attempts to provide support (too much or too little) to a child with chronic health conditions could lead to anger, tension and frustration and may even create conflicts (Eiser, 1993) which could add force to their behavior difficulties in the school. Too little parental support to SWHIs may induce sense of rejection and is thus worrying. Likewise, too much parental support can create feelings of overprotection and deprivations of independence and may also lead to parental conflicts.

The result is congruent with the large body of empirical evidence that showed elevated rates of behavior problems in SWHIs (Hysing et al., 2009; Pinquart & Shen, 2011; Zashikhina & Hagglof, 2007). Studies also showed that children and adolescents with health impairments had greater incidences of depression and anxiety than their peers without the impairments (Gortmaker et al., 1990; Wallander & Varni, 1988).

Taken together, the comparison analysis results demonstrated that SWHIs showed greater school-related stress, lower PsyCap, lesser academic achievement and higher behavior problems compared to SWOHIs. The current study adds to the body of knowledge by determining mean-level differences in school-related stress, PsyCap, academic achievement and behavior problems between students with and without health impairments matched on sex, age and grade. It is understood that in school, attention needs to be given to improve school-related outcomes (i.e., increase academic achievement and decrease behavior problems) of SWHIs. Hence, school-based intervention programs designed to minimize school-related stress and build up PsyCap of SWHIs may have beneficial effects on their outcomes. Moreover, consideration should also be given to implementing academic and behavior interventions that directly aimed to enhance adaptive behaviors and academic achievements of SWHIs.

Chapter Six

Summary, Conclusions and Implications

This chapter presents summary, conclusions and implications of the study. First, the overall summary of the study is presented. Next, conclusions drawn from the results of the the study are provided. Then, the theoretical, practical and policy implications of the study findings are forwarded. Finally, limitations of the research and directions for future study are indicated.

6.1 Summary

The main objective of the current study was to examine the associations of school-related stress and PsyCap with school-related outcomes including academic achievement and behavior problems of SWHIs in Addis Ababa and also assessing the potential moderating influence of PsyCap in the school-related stress and outcomes relationships. Specifically, the study was designed to address four objectives:(1) to examine whether school related stress is significantly related with school-related outcomes (i.e., academic achievement and behavior problems) among SWHIs, (2) to investigate whether PsyCap is significantly related with school-related outcomes among SWHIs (3) to examine whether PsyCap plays a significant moderating role in the relationships between school-related stress and school-related outcomes among SWHIs and (4) to examine whether school-related stress, PsyCap, academic achievement and behavioral problems significantly differ between SWHIs and SWOHIs.

The research employed correlational and cross sectional designs in order to examine the multiple associations among school-related stress, PsyCap, academic achievement and behavior problems of SWHIs in Addis Ababa and assess differences in the study variables between students with and without health impairments. A total of 239 SWHIs who have been on medical follow up at TASH were participated in the study. Of these, six cases were discarded due to missing data and outliers. Finally, data from 233 SWHIs (115 students with

DM and 118 students with HD) were used for subsequent analysis. Proportionate stratified sampling technique was used to select the respondents.

Data were gathered through administering self-report paper and pencil questionnaires and compile school records. The instrument pack consisted of the demographic questionnaire and three self-report tools for assessing school-related stress, behavior problems and PsyCap. The Perceived School-Related Stress Scale was used to measure school-related stress; PCQ-24 was utilized to assess PsyCap; and the Total Difficulties Scale of SDQ was employed to measure behavior problems. Additionally, the average score of all subjects collected from school reports was used to measure academic achievement of the students. Approval to conduct the research was obtained from the College of Health Sciences of Adidis Ababa University at TASH. Informed consent from parents and assent from students were gained before data collection. The data were collected using three research assistants.

The collected data were analyzed through utilizing both descriptive and inferencial statistical analyses techniques. The descriptive statistcs applied for the study were frequencies, percentages, means, and standard deviations while the inferencial statistical analyses employed include CFA, SEM and multi-group SEM, independent samples *t*-test and one way MANOVA. The analyes of the data were carried out with SPSS version 23.0 and AMOS version 23.0 software packages.

The self-report measures along with the demographic questionnaire were pilot tested on a small sample of students to make sure that the instruments are valid and reliable (see section 3.4.2). The pilot test provided excellent feedback which was taken into consideration for the main data collection phase. After the main data were collected, the data screening procedure followed to prepare the data. All assumptions required for SEM analysis were checked and fulfilled.

To examine the associations between the study predictor and criterion variables, SEM with AMOS was carried out following a two-stage model building procedure. Primarily, measurement models of each latent variable (school-related stress, PsyCap and behavior problems) and the overall measurement model were tested using CFA. All the models tested showed good fit for the data. This allowed the latent variables to be used in the structural model and there by simplifies interpretation. Next, SEM with maximum likelihood estimation appraoach was employed to assess whether school-related stress and PsyCap were associated with academic achievement and behavior problems among SWHIs, controlling for type and perceived severity of health impairments. The results revealed that school-related stress was significantly and negatively associated with academic achievement. Students who reported greater school-related stress had lower academic achievement. Conversely, school-related stress was significantly and positively associated with behavior problems. Students with greater school-related stress reported increased rates of behavior problems. Also, PsyCap was significantly and positively associated with academic achievement and negatively with behavior problems. Students who possessed better PsyCap reported better academic achievement and fewer rates of behavior problems.

To examine the moderating influence of PsyCap in the relationships between school-related stress and outcomes of academic achievement and behavior problems, multi-group SEM analsis was performed. For this analysis, participants were divided into two groups based on their levels of PsyCap. Participants with high levels of PsyCap were placed in the high PsyCap group, whereas participants with low levels of PsyCap were classified into the low PsyCap group. Then, the two models (i.e., the unconstrained and the constained models) were compared with a chi-square test of significance. The nested model comparison showed a significant difference between the two models indicating the significant moderation of PsyCap in the school-related stress-outcomes relationship.

To ascertain, in which particular path the moderating role of PsyCap did exist, further path-by-path analysis was conducted through restricting each path at a time separately. More specifically, the unconstrained model was compared with the constrained model where each predictive path was restricted to be equal across groups. For that reason, first the paths between school-related stress and academic achievement was constrained and significant differences was found when it was compared with the default model indicating that PsyCap had a significant moderating influence in the association between school-related stress and academic achievement. Similarly, an equality constraint on the path from school-related stress to behavior problems lead to a significant deterioration in model fit indicating the path was moderated by PsyCap.

Independent samples *t* tests were utilized to analyze mean score variations in the study's predictor variables of school-related stress and PsyCap between SWHIs and SWOHIs. The result of the analysis revealed a significant mean difference in school-related stress between students with and without health impairments. SWHIs showed greater school-related stress than SWOHIs. There was also significant mean difference of PsyCap between students with and without health impairments. SWHIs reported lower levels of PsyCap as compared to SWOHIs.

To examine whether SWHIs differ with SWOHIs in academic achievement and behavior problems, one-way MANOVA was performed. The finding of the study indicated that there was significant difference in the combined scores of dependent variables between students with and without health impairments. Furthermore, the results of univariate independent analysis disclosed a significant difference in academic achievement as well as behavior problems between students with and without health impairments. SWHIs scored significantly less academic achievement and more behavior problems as compared to SWOHIs.

6.2 Conclusions

This study sheds light on the associations of school-related stress and PsyCap with school-related outcomes including academic achievement and behavior problems of SWHIs and the potential moderating impact of PsyCap in school-related stress and outcomes relationship in Addis Ababa. In addition, the study highlights differences in school-related stress, PsyCap, academic achievement and behavioral problems between students with and without health impairments.

School-related stress of SWHIs is associated negatively with academic achievement and positively with behavior problems, even after controlling type and perceived severity of health impairments. These findings suggest that school-related stress can adversely affect academic and behavior outcomes of SWHIs regardless of type and severity of health impairments differences existed across the groups. Thus, school-related stress could contribute to decreased academic achievement and increased behavior problems. Prevention and early intervention programs may help to reduce stress facing SWHIs in the school environment.

PsyCap has significant and positive relationship with academic achievement and negative association with behavior problems. This finding suggests that improving PsyCap may benefit SWHIs directly through increasing academic achievement and decreasing behavior problems. Accordingly, it can be deduced that greater PsyCap of SWHIs might directly contribute to improvement in school-related outcomes. This highlights the significance of PsyCap in the school setting. Hence, efforts to optimize SWHIs' levels of of PsyCap are recommendable for increasing academic achievement and reducing behavior problems in school settings.

PsyCap of SWHIs significantly moderates the associations between school-related stress and outcomes of academic achievement and behavior problems. The findings

underscore the fundamental role that PsyCap may possibly play in the relations between school-related stress and academic achievement and behavior problems for SWHIs. The results suggest that improving PsyCap may also benefit SWHIs indirectly through reducing the possible adverse effect of school-related stress on academic achievement and behavior problems. Therefore, it can be inferred that increased PsyCap can be considered as personal strength that needs to be optimized further to resist and/or minimize the negative effects of school stress on academic achievement and behavior problems.

Finally, comparative analyses results demonstrate significant differences in levels of school-related stress, PsyCap, academic achievement and behavior problems between students with and without health impairments. SWHIs have considerably greater school-related stress, lower PsyCap, lesser academic achievement and higher behavior problems compared to SWOHIs. Hence, prevention and intervention strategies are required to reduce school-related stress, enhance PsyCap, and increase academic achievement and decrease behavior problems among SWHIs.

6.3 Implications

The results of this research have a number of theoretical, practical and policy implications.

6.3.1 Theoretical Implications

Much of studies on school-related stress have been confined to general student population. This study examined the associations of school-related stress with academic and behavior outcomes among sample of SWHIs. Hence, one of the key contributions of the study findings to existing knowledge on school-related stress and outcomes is its extension to SWHIs. The results of the study also suggest that school-related stress is a pertinent problem to be looked upon when studying plausible links of academic achievement and behavior problems. It is indicated that school-related stress can explain the variation in school-related outcomes of academic achievement and behavioral problems of SWHIs in the Ethiopian

context. The study may also guide future researchers to conduct further studies in the area of school-related stress and outcomes in Ethiopia.

This research work has also contributed to knowledge by testing the appropriateness of transactional stress model (Lazarus & Folkman) in explaining the relations between school-related stress and outcomes in students with special needs (i.e., SWHIs) in a school environment. The findings offer relevant evidence to teachers, school administrators, counselors, special needs educators, parents, and other school professionals about the adverse impact of school-related stress on school achievement and behavioral problems. This will create a better opportunity to these stakeholders to realize the undesirable effect of stress on school outcomes of students and use this knowledge to design evidence-based prevention and intervention programs in order to reduce school-related stress in SWHIs.

Adopting the agentic perspective of social-cognitive theory (Bandura, 2008, 2011), the current study provides empirical evidences supporting the importance of PsyCap in increasing academic achievement and decreasing behavior problems using samples of students with health impairments. The present study adds knowledge to the growing positive psychology theories by looking into the relation of PsyCap with outcomes of academic achievement and behavior problems using samples of SWHIs.

The present study may also give insight into the potential protective factors of stress considering PsyCap as a moderating construct in the association between school-related stress and outcomes of academic achievement and behavior problems among SWHIs. The study contributes to filling the the gaps in literature by assessing PsyCap as a potential moderator of stress from organizational studies on employees to student populations particularly using samples of SWHIs from the perspective of the educational context. As a result, moderating factors like PsyCap may have a pivotal function in protecting the impacts of stress and fostering positive school-related outcomes in these students. Moreover, the

importance of PsyCap was assessed in a different cultural environment since the study was carried out on students in the Ethiopian context. Future studies should examine specific mechanisms in which this resource can be increased, sustained, and capitalized on in the academic setting.

Comparative analyses results of the study provide better understanding about the situation of SWHIs to concerned stakeholders working with these children, specifically focusing on their level of school-related stress, PsyCap, academic achievement and behavior problems in comparison to SWOHIs. The current findings provide further evidence showing that the same result is found in Ethiopian students with and without health impairments in the school context. Comprehensive school based intervention programs that aimed at improving the school functioning of SWHIs (i.e., reducing school-related stress, enhancing PsyCap, increasing academic achievement and decreasing behavior problems) should be designed and implemented.

6.3.2 Practical Implications

Findings of the present study have several implications for practitioners. First, given the more intensity of school-related stress in SWHIs, there is a need to develop suitable interventions to reduce their level of school-related stress and its harmful influence on outcomes of academic achievement and behavior problems. At school, SWHIs should be given stress management training so that they can be adequately equipped with the needed skills to handle stress related to school. Early identification and intervention targeting stress management skills may help in alleviating stress and optimizing school-related outcomes for SWHIs. In addition, early educational and behavioral intervention programs to improve academic achievement and reduce behavior problems can be very helpful for SWHIs. Knowledge about school-related stress should be promoted among the parents of the SWHIs and empower them to help improve coping strategies of their children. Therefore, it is

important for schools to give emphasis on the issue of addressing school-related stress and fit into place with their strategic planning along with the school ethos and policies. It should place a great importance to the quality of the relationships of students with teachers, parents and with the entire school community and strive to create positive school climate where students can develop and flourish.

Additionally, schools also should design and deliver comprehensive school intervention programs that promote PsyCap of students in order to bring improved school outcomes including increased school results and decreased behavior problems. PsyCap is a personal characterstic that can be changed and improved (Luthans, Youssef, et al., 2007; Avey et al., 2008). Studies have reported that individual's PsyCap level can be increased through short term training interventions (Luthans et al., 2006, 2010) and also online sessions (Luthans et al., 2008). Interventions designed to develop PsyCap could therefore be a relatively easy and inexpensive way for schools to battle school-related stress and improve school-related outcomes among SWHIs. Specifically, schools should focus on the development of students' PsyCap through integrating into the academic curriculum. Teachers could also play a vital role in promoting and building of this important resource in students. Thus, the results suggest that school practitioners need to know student's PsyCap as essential resource and do their utmost to acquire effective techniques for assessing, developing and and implementing PsyCap interventions in classrooms and particularly targeting SWHIs, who are at a greater risk of greater school-related stress, lower academic achievement and higher behavior problems.

The poor school-related outcomes including decreased academic achievement and increased behavior problems in SWHIs highlight both variables as targets for intervention. These findings suggest the need to make comprehensive assessment of academic and

behavior outcomes of these students and ensure secondary and/or tertiary educational and behavior interventions targeting SWHIs.

6.3.3 Policy Implications

The findings of the study provide vital information for policy and program development. With advancement in medical technology and treatment, more children with chronic health conditions are staying alive longer than before, and the current emphasis is on improving the quality of their daily living including their school experiences. Findings of this research suggest that coordinated academic and behavior support systems to SWHIs needs to be given due emphasis. Stress preventing and relieving interventions could be integrated into the academic curriculum to better support these students in the school environment. In addition, PsyCap can be enhanced along with the existing school curriculum. Therefore, teachers should look for various approachs to include PsyCap development into their lessons, instruction and academic programs. The PsyCap development program could be put into operation generally for all students or specifically targeting at-risk groups such as SWHIs and other disabilities.

Due to their functional restrictions and limitations, SWHIs encounter many challenges in the school environment. Collaboration among school personnel, health care providers and family members may benefit the child not to be excluded needlessly from school curriculum and to facilitate proper implementation of school policies and programs. Curriculum modification is required to make sure that broad range of appropriate learning experiencess are put into effect. For example, the presentation of physical education lessons should be adjusted based on the child's health conditions. Therefore, greater efforts are needed to make adjustments to physical trainings and activities instead of restricting them from participation in the activities. SWHIs should possibly be given extra support at school. For example, flexible timescales for returning homework and assignments may be employed when fatigue delays

its return. Learning and progress of SWHIs can be affected due to frequent hospital care needs. Thus, for lengthy absence, tutorial and make up classes may be arranged allowing the student to bridge the gaps associated with absence and catch up any missed work. Special programs may also be arranged for missed tests and examinations.

In sum, this study suggests that research, practice and policy for SWHIs should equally focus on what is going well as opposed to giving more emphsis the areas that need improvement. Researchers, practitioners and policy makers should not give attention only to impairments and deficits but also at areas where the students are well functioning. More specifically, positive characteristics and strengths of SWHIs should be noted. To this end, the present study highlights a more positive approach of looking at factors that enhance the child's school-related outcomes. Put simply, the current study underlined the significant direct and stress moderating effects of PsyCap for optimizing school-related outcomes for theis at-risk segment of students with special needs.

6.4 Limitations and Future Directions

Few limitations of the present study deserve emphasis. First, results were obtained with a particular sample of SWHIs (i.e., DM and HD) who were drawn from only one site. For that reason, the results could not be generalized to the whole school population of SWHIs. Future studies may aim to use a more representative sample across different contexts and health impairment groups such as students with asthma, seizure disorders, renal disease and cancer.

Second, the study used cross-sectional survey design and therefore does not determine causal directions of the associations amongst the variables in the study. In other words, it is difficult to make cause-effect inferences. To determine causal relationship, a longitudinal study is suggested in the future. More over, as adolescence is a period of enormous changes

and unsteadiness, a longitudinal research could provide better information pertaining to changes in study variables across important time points of their developmental trajectories.

The use of self-report questionnaire for data gathering is the third limitation of this study. Self-report data are open to response bias which could affect the validity and reliability of the data. Respondents might either over-report or under-report of the issues under investigation. Perhaps, the use of multiple methods for evaluation may minimize the influence of subjectivity. Therefore, future researches should include reports of these constructs from multiple informants (e.g., parents, teachers, peers) and methods (e.g., interviews, direct observations) in order to triangulate data from different perspectives.

References

Abbas, M., Raja, U., Darr, W., & Bouckenooghe, D. (2014). Combined effects of perceived politics and psychological capital on job satisfaction, turnover intentions, and performance. *Journal of Management*, *40*(7), 1813–1830. doi: 10.1177/0149206312455243

Akgun, S. & Ciarrochi, J. (2003). Learned resourcefulness moderates the relationship between academic stress and academic performance. *Educational Psychology*, 23(3), 287-294. DOI: 10.1080/0144341032000060129

Alam, M. (2016). Study of academic stress and test anxiety as predictors of academic achievement of secondary school students. *European Academic Research, 4*(2), 1353-1369.

Alemseged. F., Haileamlak, A., Tegegn, A., Tessema, F., Woldemichael, K., & Asefa,M., Abebe, G. (2012). Risk factors for chronic non-communicable diseases at Gilgel Gibe Field Research Center, Southwest Ethiopia: Population Based Study. *Ethiop J Health Sci*., 22, 19-27.

Alfven, G., Östberg, V., & Hjern, A.(2008).Stressor, perceived stress and recurrent pain in Swedish school children. *Journal of Psychosomatic Research*, *65*, 381–387.

Alva, S. A., & de Los Reyes, R. (1999). Psychosocial stress, internalized symptoms, and the academic achievement of Hispanic adolescents. *Journal of Adolescent Research, 14*, 343 – 358.

American Diabetes Association. (1998). Economic consequences of diabetes mellitus in the U.S. in 1997. *Diabetes Care 21*(2), 296-309.

Anderson, E., & Garbing, D. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.

Ang, R. P., & Huan, V. S. (2006). Relationship between academic stress and suicidal

ideation: Testing for depression as a mediator using multiple regression. *Child Psychiatry & Human Development, 37,* 133-143. doi: 10.1007/s10578-006-0023-8

Angus, M., McDonald, T., Ormond, C., Rybarczyk, R., Taylor, A., & Winterton, A. (2009). The pipeline project: Trajectories of classroom behaviour and academic progress: A study of engagement with learning. *Edith Cowan University*. http://www.bass.edu.au/files/5413/9925/8294/Pipeline_Report_Dec_ 2009.pdf.

Arabiat, D.H. & Al Jabery, M. A. (2013). Health related quality of life in paediatric chronic health conditions: A comparative study among children and adolescents in Jordan. *Health SciRes., 5,* (11B), 19-24.h ttp://dx.doi.org/10.4236/health.2013.511A2004

Arbuckle, J. L. (2014). *IBM SPSS Amos 23 user's guide*. IBM, Amos Development Corporation.Retrieved:ftp://public.dhe.ibm.com/software/analytics/spss/documentation/amos/ 23.0/en/Manuals/IBM_SPSS_Amos_User_Guide.pdf.

Avey, J. B., Luthans, F., & Jensen, S. (2009). Psychological capital: A positive resource for combating stress and turnover. *Human Resource Management, 48*(5), 677–693. doi: 10.1002/hrm.20294

Avey, J. B., Luthans, F., & Youssef, C. M. (2010). The additive value of positive psychological capital in predicting work attitudes and behaviors. *Journal of Management,* 36, 430–452.

Avey, J. B., Patera, J. L., & West, B. J. (2006). Positive psychological capital: A new lens to view absenteeism. *Journal of Leadership and Organizational Studies,* 13, 42–60.

Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly, 22*(2), 127-152.

Avey, J. B., Wernsing, T. S., & Luthans, F. (2008). Can positive employees help positive

organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors. *Journal of Applied Behavioral Science, 44,* 48-70.

Awang, Z. (2012). *Structural equation modeling using amos graphic*. Shah Alam: Universiti Teknologi Mara Publication Centre (UPENA).

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual review of psychology* , 52, 1-26.

Bandura, A. (2008). An agentic perspective on positive psychology. In S. J. Lopez (Ed.), *Praeger perspectives. Positive psychology: Exploring the best in people, Vol. 1. Discovering human strengths* (pp. 167-196). Westport, CT: Praeger/Greenwood.

Bandura, A. (2011). A social cognitive perspective on positive psychology. *Revista de Psicología Social, 26*(1), 7-20. doi: 10.1174/021347411794078444

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning.*Child Development, 67* (3), 1206-1222.

Barlow, J.H., & Ellard, D.R. (2006). The psychosocial well-being of children with chronic disease, their parents and siblings: An overview of the research evidence base. *Child Care Health Dev, 32,* 19–31.

Baroody, A.E., Rimm-Kaufman, S.E., Larsen, R.A., & Curby, T.W. (2014). The link between responsive classroom training and student-teacher relationship quality in the fifth grade: A study of fidelity of implementation. *School Psychology Review, 43*(1), 69-85.

Belay, T., & Yekoyealem, D. (2015). Exploring youth development in Ethiopia: An alternative strength-based perspective. *Ethiopian Journal of Development Research, 37*(1), 41-90.

Bjorkman, S. M. (2007). Relationships among academic stress, social support, and

internalizing and externalizing behaviour in adolescence. Unpublished doctoral thesis, Northern Illinois University, Illinois, United States.

Blunch, N. J. (2008). *Introduction to structural equation modelling using SPSS and AMOS*. London, UK: Sage Publications

Boekaerts, M., & Roder, I. (1999). Stress, coping and adjustment in children with a chronic desease: A review of the literature. *Disability and Rehabilitation, 21*, 311-337.

Boice, M. (1998). Chronic illness in adolescence. *Adolescence, 33*, 927-939.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: Wiley.

Borman, G. D., & Overman, L. T. (2004). Academic resilience in mathematics among poor and minority students. *Elementary School Journal, 104*(3), 177-195.

Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development,* 61, 1101-1111.

Bukowski, E., & Anita, L. (2000). Children's perceptions of chronically ill peers: An investigation of salient illness characteristics and social context. *Age Differences, Human Sex Differences, Psychosocial Factors Dissertation Abstract.* (From *PsycInfo*).

Burns, J.J, Sadof, M., & Kamat, D. (2006). The Adolescent with a chronic illness: How to manage treatment issues and provide specialized services in this population. *PEDIATRIC ANNALS 35*(3), 207-216.

Buysse, W. H. (1997). Behavior problems and the relationships with family and peers during adolescence. *Journal of Adolescence, 20,* 645–59.

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming (3rd ed.)*. NewYork, NY: Routledge.

Cadman, D., Boyle, M., Szatmari, P., & Offord, D.R. (1987). Chronic illness, disability, and

mental and social wellbeing: findings of the Ontario child health study. *Pediatrics, 79*(5):805– 813.

Caltabiano, M.L., Sarafino, E.P., & Byrne, D. (2008). *Health Psychology* (2nd ed). Australia: John Wiley & Sons Ltd.

Cameron, S.V., & Heckman, J.J. (1993). The nonequivalence of high school equivalences. *Journal of Labor Economics 11*, 1–47.

Cangur, S. & Ercan, I. (2015). Comparison of model fit indices used in structural equation modeling under multivariate normality. *Journal of Modern Applied Statistical Methods. 14*(1), 152-167.

Carver, C. S., & Scheier, M. S. (2002). *Optimism. In C. R. Snyder & S. J. Lopez (Eds.), Handbook of positive psychology (pp. 231-243).* Oxford, UK: Oxford University Press.

Central Statistical Agency, Federal Democratic Republic of Ethiopia. (2013). Population Projection of Ethiopia for All Regions at Wereda Level from 2014-2017. Addis Ababa, Ethiopia.

Chan, E. C., Piira, T., & Betts, G. (2005). The school functioning of children with chronic and recurrent pain. *Pediatric Pain Letter*, 7(2–3), 11–16.

Chemers, M., Hu, L., & Garcia, B. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, *93*, 55–64.

Chen, D.Q., & Lim, V.G. (2012). Strength in adversity: the influence of psychological capital on job search. *J. Organ. Behav.* 33, 811–839.

Cheung, F., Tang, C. S., & Tang, S. (2011). Psychological capital as a moderator between emotional labor, burnout, and job satisfaction among school teachers in China. *International Journal of Stress Management*, *18*(4), 348–371.

Çimen, I., & Özgan, H. (2018). Contributing and damaging factors related to the

psychological capital of teachers: A qualitative analysis. *Issues in Educational Research, 28(2), 308-328.*

Clay, D., Cortina, S., Harper, D., Cocco, K.M., Drotar, D. (2004). School teachers' experiences with childhood chronic illness. *Children's Health Care. 33*(3), 227-239.

Clemmitt, M. (2007). Students under Stress. *CQ (Congressional Quarterly) Researcher, 17*(25), 577-600.

Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). New York: John Wiley & Sons.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale: Erlbaum.

Cohen, S., Kessler, R. C., & Gordon, L. U. (1995). *Measuring stress.* New York: Oxford University Press.

Cohen, M., Mansoor, D.A., Langut, H., & Lorber, A.(2007). Quality of life, depressed mood, and self-esteem in adolescents with heart disease. *Psychosomatic Medicine, 69*, 313–318 . DOI: 10.1097/PSY.0b013e318051542c

Compas, B. E., Jaser, S. S., Dunn, M. J., & Rodriguez, E. M. (2012). Coping with chronic illness in childhood and adolescence. *Annual Review of Clinical Psychology, 8*, 455–480.

Culbertson, S. S., Fullagar, C. J., & Mills, M. J. (2010). Feeling good and doing great: The relationship between psychological capital and well-being. *Journal of Occupational Health Psychology*, *15*, 421-433. doi:10.1037/a0020720

Curry, L. A., Snyder, C. R., Cook, D. L., Ruby, B. C., & Rehm, M. (1997). Role of hope in academic and sport achievement. Journal of Personality and Social Psychology, 73(6), 1257-1267.

Dahlquist, G. & Källén, B. (2007). School performance in children with type 1 diabetes: A population-based register study. *Diabetologia*, 50, 957–964**.** DOI 10.1007/s00125-007-0615-2

Darkwa, S. (2011). Prevalence of diabetes mellitus and resources available for its management in the Cape Coast Metropolis. *Journal of Health and Environmental Sciences 1*(1), 1-7. DOI: 10.5897/ISAAB-JHE11.012

Datu, J.A.D., & Valdez, J. P. M. (2016). Psychological capital predicts academic engagement and well-being in Filipino high school students. *Asia-Pacific Edu Res, 25(3)*, 399–405. DOI: 10.1007/s40299-015-0254-1.

de Anda, D., Boskin, L., Buchwald L., Morgan J., Ow, J., Gold, J.S., & Weiss, R. (2000). Stress, stressors and coping among high school students. *Children and Youth Services Review, 22*(6), 441-463.

de Anda, D., Bradley, M., Collada, C., Dunn, L., Kubota, J., Hollister, V., …Wadsworth, T. (1997). A study of stress, stressors, and coping strategies among middle school adolescents. *Social Work in Education*, 19 (2), 87-98.

Demeke, B. (2015). Stress, moderators and depressive symptoms among urban school adolescents in Dire Dawa City Administration. Unpublished doctoral Dissertation, Addis Ababa University, Addis Ababa.

Diseth, A. (2011). Self-efficacy, goal orientation and learning strategies as mediators between preceding and subsequent academic achievement. *Learning and Individual Differences*, *21*, 191–195.

Dunne,M.P., Sun, J., Nguyen,N.D., Truc,T.T., Loan ,K.X., & Dixon,J.(2010). The influence of educational pressure on the mental health of adolescents in East Asia: Methods and tools for research. *Journal of Science, 61*, 109-122.

Eccles, J., & Midgley, C. (1989). Changes in academic motivation and self-perception during early adolescence. In R. Montemayor, G.R. Adams & T.P. Bullotta (Eds.), *From Childhood to Adolescence. A Transitional Period?* Newbury Park: Sage.

Eccles, J., & Roser, R. W. (2011). Schools as developmental contexts during adolescence.

Journal of Research on Adolescence, *21*, 225–241.

Eccles, J., Brown, B.V., & Templeton, J. (2008). A development framework for selecting indicators of well-being during the adolescent and young adult years. In Brown B.V. (Ed.), *Key indicators of child and youth well-being* (pp.197-236). Lawrence Erlbaum Associates, New York.

Eiser, C. (1993). Growing Up With a Chronic Disease: The Impact on Children and Their Families. Jessica Kingsley Publishers.

Elisabeth M., Utens, W. J., Verhulst,F. C., Meijboom ,F. J., Duivenvoorden, H. J., Rudolph A. M.,… Hess, J.(1993). Behavioural and emotional problems in children and adolescents with congenital heart disease. *Psychological Medicine,* 23, 415-424.

Elias, M. J. (1989). Schools as a source of stress to children: an analysis of causal and ameliorative influences. *Journal of School Psychology*, *27*, 393-407.

Eppelmann, L., Parzer, P., Lenzen, C., Bürger, A., Haffner, J., Resch, F., Kaess, M. (2016). Stress, coping and emotional and behavioral problems among German high school students. *Mental Health & Prevention, 4(2),* 81-87. http://dx.doi.org/10.1016/j.mhp.2016.03.002i

Epping-Jordan J, Bengoa,R., Kawar,R., & Sabaté,E.(2001). The challenge of chronic conditions: WHO responds. *British Medical Journal*, 323, 947–48.

Eskedal L, Hagemo P.S., Eskild A., Aamodt, G., Seiler, K.S., Thaulow, E. (2005) Survival after surgery for congenital heart defects: Does reduced early mortality predict improved long-term survival? *Acta Paediatrica 94*(4), 438–443.

Falvo, D. (1999). *Medical and psychosocial aspects of chronic illness and disability* (2nd ed.). Gaithersburg, MD: Aspen.

Farrell, M. (2008). *Educating special children*: *An introduction to provision for pupils with disabilities and disorders.* New York, NY: Taylor & Francis Inc

Forgeron, P.A., King, S., Stinson, J.N., McGrath, P.J., MacDonald, A.J., Chambers, C.T. (2010). Social functioning and peer relationships in children and adolescents with chronic pain: A systematic review. *Pain Res Manage, 15(1),* 27-41.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research 18,* 39-50. doi: 10.2307/3151312.

Fowler, M. G., Johnson, M. P., & Atkinson, S. S. (1985). School achievement and absence in children with chronic health conditions. *The Journal of Pediatrics, 106,* 683-687.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *American Psychologist, 56,* 218–226

French, D., & Conrad, J. (2001). School dropout as predicted by peer rejection and antisocial behavior. *Journal of Research on Adolescence,* 11, 225-244.

Frydenberg, E. (1997). *Adolescent coping: Theoretical and research perspectives*. London: Routledge.

García-Izquierdo, M., Ríos-Risquez, M.I., Carrillo-García, César & Sabuco-Tebar, E.D. (2015). The moderating role of resilience in the relationship between academic burnout and the perception of psychological health in nursing students, Educational Psychology: *An International Journal of Experimental Educational Psychology,* 1-13.

Garson, G.D. (2015). Structural equation modeling. Asheboro, NC: Statistical Publishing Associates.

Gath, A., Smith, M.A., Baum, J.D. (1980). Emotional, behavioral, and educational disorders in diabetic children. *Arch Dis Child, 55,* 371–375.

Gautam, P., & Pradhan, M. (2018). Psychological capital as moderator of stress and achievement. *Indian Journal of Positive Psychology, .9(1), Article excerpt.*

Geist, R. (2003). Psychosocial issues in the child with chronic conditions. *Best Practice &*

Research Clinical Gastroenterology, 17, 141-152. http://dx.doi.org/10.1016/S1521-6918(02)00142-7.

George, D., & Mallery, P. (2010). SPSS for windows step by step: a simple guide and reference. 10thed. Boston: Pearson.

Gilman, R., Dooley, J., & Florell, D. (2006). Relative levels of hope and their relationship with academic and psychological indicators among adolescents. *Journal of Social and Clinical Psychology, 25*(2), 166–178.

Good, A. (1991). Informing schools about children's chronic illnesses: Parents' opinions. *Pediatrics, 88*(2), 306–11.

Goodman, R.(2001). Psychometric properties of the strengths and difficulties questionnaire. *J Am Acad Child Adolesc Psychiatry, 40*(11), 1337-1345.

Goodman, A. Lamping, D., & Ploubidis, G.B. (2010). When to Use Broader Internalising and Externalising Subscales Instead of the Hypothesised Five Subscales on the Strengths and Difficulties Questionnaire (SDQ): Data from British Parents, Teachers and Children. *J Abnorm Child Psychol*, 38 (8), 1179-91. DOI: 10.1007/s10802-010-9434-x

Goodman, R., Meltzer, H., Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-report version. *European Child and Adolescent Psychiatry*, 7, 125–130.

Görgens-Ekermans, G., & Herbert, M. (2013). Psychological capital: Internal and external validity of the Psychological Capital Questionnaire (PCQ-24) on a South African sample. *SA Journal of Industrial Psychology, 39*(2), 1-12.

Gorodzinsky, A. Y., Hainsworth, K. R. & Weisman, S. J. (2011). School Functioning and Chronic Pain: A Review of Methods and Measures. *Journal of Pediatric Psychology* , 36(9), 991–1002. doi:10.1093/jpepsy/jsr038

Gortmaker, S.L., Walker D.K., Weitzman, M., & Sobol, A.M. (1990). Chronic conditions, socioeconomic risks, and behavioral problems in children and adolescents. *Paediatrics,* 85(3), 267–276.

Grant, K.E., Compas, B.E., Stuhlmacher, A.F., Thurm, A.E., McMahon, S.D., & Halpert, J.A. (2003). Stressors and child and adolescent psychopathology: Moving from markers to mechanisms of risk. *Psychological Bulletin, 129,* 447-466.

Gregory, A., & Weinstein, R. S. (2004). Connection and regulation at home and in school: Predicting growth in achievement for adolescents. *Journal of Adolescent Research, 19*, 405–427.

Gupta, S., Giuffre, R.M., Crawford, S., & Waters, J. (1998). Covert fears, anxiety and depression in congenital heart disease. *Cardiol Young*, 8, 491–4999.

Hagen, K. A., Myers, B. J., & Mackintosh, V. H. (2005). Hope, social support, and behavioral problems in at-risk children. *American Journal of Orthopsychiatry, 75*, 211-219.

Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, New Jersey: Pearson Prentice Hall

Hale, J.A. (1998). *Healing Art: Young Children Coping With Stress*. Paper presented at the annual meeting of the Alabama Association of Young Children.

Halfon, N., & Newacheck, P.W. (2010). Evolving Notions of Childhood Chronic Illnesses. *Journal of the American Medical Association, 303,* 665-666.

Hamre, B., & Pianta, R. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72,* 625–638.

Haugland, S., Wold, B. & Torsheim, T. (2003) Relieving the Pressure? The role of physical activity in the relationship between school-related stress and adolescent health complaints. Research Quarterly for Exercise and Sport, 74(2), 127-135, DOI:

10.1080/02701367.2003.10609074

Haynie, D. L., Nansel, T., Eitel, P., Crump, A. D., Saylor, K., Yu, K., & Morton-Simons, B. (2001). Bullies, victims and bully/victims: Distinct groups of at-risk youth. *Journal of Early Adolescence, 21*(1), 29 – 49.

Helgeson,V.S., Snyder, P.R., Escobar, O., Siminerio, L., & Becker, D. (2007). Comparison of adolescents with and without diabetes on indices of psychosocial functioning for three years. Journal of Pediatric Psychology 32(7), 794–806. doi:10.1093/jpepsy/jsm020

Helms, B. J.(1996). School-Related Stress: Children with and without Disabilities. Paper presented at the Annual Conference of the American Educational Research Association, New York.

Hess, R.S., & Copeland, E.P.(2001). Student stress, coping strategies and school completion: A Longitudinal perspective. *School psychology quarterly,16*(4), 389-405.

Hjern, A., Alfven, G., Ostberg V. (2008). School stressors, psychological complaints and psychosomatic pain. *Acta Pædiatrica, 97*, 112–117. doi:10.1111/j.1651-2227.2007.00585.x

Hoe, S. L. (2008). Issues and procedures in adopting structural equation modeling technique. *Journal Of Applied Quantitative Methods*, *3*(1), 76–83.

Holmes, C. S., Dunlap, W. P., Chen, R. S., & Cornwell, J. M. (1992). Gender differences in the learning status of diabetic children. *Journal of Consulting & Clinical Psychology*, *60*, 698–704.

Holmes, C. S., Yu, Z., & Frentz, J. (1999). Chronic and discrete stress as predictors of children's adjustment. *Journal of Consulting and Clinical Psychology, 67*(3), 411-419.

Hoosen, N., Davids, E. L., de Vries, P.J., & Shung‐King, M. (2018). The Strengths and

difficulties questionnaire (SDQ) in Africa: a scoping review. *Child Adolesc Psychiatry Ment Health, 12(6).*

Hu, L. & Bentler, P. M. (1995). Evaluating model fit in R. H. Hoyle (Ed.), *Structural equation modeling: Issues, concepts, and applications* (pp. 76-99). Newbury Park, CA: Sage.

Hu, L. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling,* 6(1)1-55.

Huan, V.S., Yeo, L.S., Ang, R.P., & Chong, W.H. (2006). The influence of dispositional optimism and gender on adolescents' perception of academic stress. *Adolescence, 41*(163), 533-546.

Huan, V.S., Lay-See, Y., Ang, R.P., & Wan-Har, C. (2008). The impact of adolescent concerns on their academic stress. *Educational Review, 60 (2),* 169-178.

Hussain, A., Kumar, A., & Husain, A. (2008). Academic Stress and Adjustment Among High School Students.*Journal of the Indian Academy of Applied Psychology*,*34*, 70-73.

Hysing, M., Elgen, I., Gillberg, C., Lie, S. A., & Lundervold, A. J. (2009). Emotional and behavioural problems in subgroups of children with chronic illness: results from a large-scale population study. *Child: care, health and development*, *35* (4), 527–533. doi:10.1111/j.1365-2214.2009.00967.x.

Irwin, M.K., & Elam, M. (2011). Are we leaving children with chronic illness behind? *Cincinnati Children's Hospital Medical Center,* 67-80.

Jafri, H. (2013). A study of the relationship of psychological capital and students' performance, *Business Perspectives and Research*, 9-16.

Jones, R.W. (1993). Gender-specific differences in the perceived antecedents of academic

stress. *Psychological Reports*, *72*,739-743.

Kaplan, D., Liu, R., & Kaplan, H. (2005). School-related stress in early adolescence and academic performance three years later: The conditional influence of self expectations. *Social Psychology of Education, 8*(1), 3-17.

Karsdorp, P.A., Everaerd, W., Kindt, M., Mulder, B.J.(2007). Psychological and cognitive functioning in children and adolescents with congenital heart disease: A meta-analysis. *J Pediatr Psychol, 32*, 527–541.

Khan, A., Siraj, S., & Li, L.P. (2011). Role of positive psychological strengths and big five personality traits in coping mechanism of university students. *International Conference on Humanities, Society and Culture, 20,* 210-215. Retrieved from http://www.ipedr.com/vol20/41-ICHSC2011-M10027.pdf

Kim, K.J., Conger, R.D., Elder, G.H., & Lorenz, F.O. (2003). Reciprocal influences between stressful life events and adolescent internalizing and externalizing problems. *Child Development, 74,*127-143.

Kim, W.J, Park, J.H., Yoo, J.H. (2015). Emotional and behavioral problems and glycemic control in adolescents with type 1 and type 2 diabetes. *J Psychiatry,* 18 (2), 1-5. doi:10.4172/psychiatry.1000244

Kline, R. (2005). *Principles and practices of structural equation modeling* (2n ed.). New York: Guilford Press.

Kline, R. B. (2011). *Principles and practice of structural equation modeling (3rd ed.)*. New York, NY: Guilford Press.

Kouzma, N. M., & Kennedy, G. A. (2004). Self-reported sources of stress in senior high school students. *Psychological Reports, 94*(1), 314-316. doi:10.2466/PR0.94.1.314-316.

Kramer, H.H., Awiszus, D., Sterzel, U., van Halteren, A., & Classen R. (1989). Development

of personality and intelligence in children with congenital heart disease. *J Child Psychol Psychiatry*, 30(2), 299-308.

Krasikova, D.V., Lester, P. B., and Harms, P. D. (2015). Effects of psychological capital on mental health and substance abuse. *Journal of Leadership & Organizational Studies, 22(3)*, 280–291. DOI: 10.1177/1548051815585853.

Kumar, R.S., & Side, A.S. (2015). Academic stress and coping strategies among students with disabilities in Addis Ababa University. *Eastern Africa Social Science Research Review, 31(2),*83-100. *https://doi.org/10.1353/eas.2015.0008*

La Greca, A. M. (1990). Social consequences of pediatric conditions: Fertile area for future investigation and intervention? *Journal of Pediatric Psychology, 15*(3), 285.

Lai, J.C. (2009). Dispositional optimism buffers the impact of daily hassles on mental health in Chinese adolescents. *Personality and Individual Differences, 47*, 247–249. doi: 10.1016/j.paid.2009.03.007

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170-183.

Lavigne, J.V., & Faier-Routman, J. (1992). Psychological adjustment to pediatric physical disorders: A meta-analytic review. *J Pediatr Psychol*, 17, 133–157.

Lazarus, R.S. (1999). *Stress and emotion. A new synthesis.* New York: Springer Publishing Company.

Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal and coping.* New York: Springer Publication.

Lee, M., & Larson, B. (2000). The korean 'examination hell': Long hours of studying, distress, and depression. *Journal of Youth and Adolescence, 29*(2), 249.

Lee, S.K, So, W.Y, & Sung, D.J. (2015). Association between chronic mental stress and

academic performance among Korean adolescents. *Universitas Psychologica, 14*(3), 967-974. http://dx.doi.org/10.11144/Javeriana.upsy14-3.abcm

Liran, B.H., &, Miller, P. (2019).The Role of Psychological Capital in Academic Adjustment Among University Students . *J Happiness Stud, 20*, 51-65. DOI: 10.1007/s10902-017-9933-3.

Lohman, B. J., & Jarvis, P. A. (2000). Adolescent stressors, coping strategies, and psychological health studied in the family context. *Journal of Youth and Adolescence,* 29(1), 15-43.

Lopez, S. J., & Snyder, C. R. (Eds.). (2009). *Handbook of positive psychology* (2nd ed.). Oxford, UK: Oxford University Press.

Luthans, F. (2002a). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior, 23*, 695–706.

Luthans, F. (2002b). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Executive, 16(*1), 57-72.

Luthans F., Avey, J.B., Avolio, B.J., Norman, S.M., & Combs, G.J. (2006). Psychological capital development: toward a micro-intervention. *J. Organ. Behav.*, 27, 387–393.

Luthans, F., Avey, J. B., Avolio, B. J., & Peterson, S. J. (2010). The development and resulting performance impact of positive psychological capital. *Human Resource Development Quarterly*, *21*(1), 41-67.

Luthans, F., Avey, J.B., Patera, J.L. (2008). Experimental analysis of a web-based training intervention to develop positive psychological capital. *Acad. Manag. Learn. Educ.*, 7, 209–221

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology, 60*, 541–572.

Luthans, B.C., Luthans, K.W., & Jensen, S. M. (2012). The impact of business school students' psychological capital on academic performance. *Journal of Education for Business*, 87(5), 253-259, doi: 10.1080/08832323.2011.609844

Luthans, F., Luthans K.W. & Luthans B.C. (2004). Positive psychological capital: Beyond human and social capital. *Business Horizons*, 47(1), 45–50.

Luthans, F. & Youssef, C.M (2004). Human, social, and new positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics, 33*(2), 143–160.

Luthans F, Youssef CM, & Rawski S. (2011). A tale of two paradigms: the impact of psychological capital and reinforcing feedback on problem solving and innovation. *J. Organ. Behav. Manag. 31*,333–350.

Luthans, F., Youssef, C.M. & Avolio, B.J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford: Oxford University Press.

Luthans F., Youssef, C.M, Sweetman, D., & Harms, P. (2013). Meeting the leadership challenge of employee wellbeing through relationship PsyCap and health PsyCap. *J. Leadersh. Organ. Stud.*, 20, 114–129.

Macklem, G.L. (2008). *Practitioner's guide to emotion regulation in school-aged children*. Springer Science: New York.

Manikandan, K., & Neethu, A. T. (2018). Student engagement in relation to academic stress and self-efficacy. *Guru Journal of Behavioral and Social Sciences, 6* (1), 775-784.

Marks, H. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal, 37*, 153–184. doi:10.2307/1163475

Marks, G. N., Cresswell, J., & Ainley, J. (2006). Explaining socioeconomic inequalities in

student achievement: The role of home and school factors. *Educational Research and Evaluation, 12*(2), 105-128.

Masten, A. S., & Reed, M. G. J. (2002). Resilience in development. In C. R., Snyder, & S. J., Lopez (Eds.), Handbook of positive psychology (pp. 74-88). New York: Oxford Press.

Matsunaga,S.(2008). Item parceling in structural equation modeling: A Primer, *Communication Methods and Measures, 2(4),* 260-293.

McAndrew, F. T., Akande, A., Turner, S., & Sharma, Y. (1998). A cross-cultural ranking of stressful life events in Germany, India, South Africa, and the United States. *Journal of Cross-Cultural Psychology, 29*(6), 717–727.

McCarthy A.M., Lindgren, S., Mengeling, M. A., Tsalikian, E., & Engvall, J. C. (2002). Effects of diabetes on learning in children. *Pediatrics, 109*(1): 1-10. doi: 10.1542/peds.109.1.e9

McDonald, R.P. & Ho, M. (2002). Principles and Practice in Reporting Statistical Equation Analyses. *Psychological Methods, 7* (1), 64-82.

McEwen, B. S., & Sapolsky, R. M. (1995). Stress and cognitive function. *Current Opinion in Neurobiology, 5*(2), 205-216.

McNamara, S. (2000). *Stress in young people: What's new and what can wdo?* London: Continuum International Publishing Group.

Meyers, L., Gamst, G., & Guarino, A. (2013). *Applied multivariate research: Design and interpretation.* Los Angeles, CA: Sage Publications, Inc.

Meo, S. A., Alkahlan, M. A., Al-mubarak, M. A., Al-obayli, M.S., Melaibary, B.A., Bin Dous, A. N. & Alhassoun, A. I. (2013). Impact of type 1 diabetes mellitus on academic performance. *Journal of International Medical Research, 41*(3) 855–85. doi: 10.1177/0300060513483417

Miatton, M., De Wolf, D., Francois, K., Thiery, E., & Vingerhoets, G. (2007). Neuropsychological performance in school-aged children with surgically corrected congenital heart disease. *J Pediatr.,151*, 73–78.

Michaud, P. A., Suris, J. C., & Viner, R. (2007). *The adolescent with a chronic condition. epidemiology, developmental issues and health care provision.* Geneva: Department of Child and Adolescent Health and Development. WHO Discussion Papers on adolescence.

Misganaw, A., Haile Mariam, D., Ali, A., & Araya, T. (2014). Epidemiology of major non-communicable diseases in Ethiopia: A Systematic Review. *J HEALTH POPUL NUTR,* 32(1):1-13

Modin, B., Östberg, V., Toivanen, S., & Sundell, K. (2011). Psychosocial working conditions, school sense of coherence and subjective health complaints: A multilevel analysis of ninth grade pupils in the Stockholm area. *Journal of Adolescence, 34 (1),* 129-139.

Mokkink, L.B., van der Lee, J.H., Grootenhuis, M.A., Offringa, M., Heymans, H.S. (2008). Defining chronic deseases and and health conditions in childhood (age 0 -18 years): National consensus in the Netherlands. *Eur J Ped, 167,* 1441-1447.

Moksnes, U. K., Espnes, G. A., & Haugan, G. (2014). Stress, sense of coherence and emotional symptoms in adolescents. *Psychology & Health, 29*, 32–49.

Moksnes, U. K., Løhre, A., Lillefjell, M., Byrne, D.G., & Haugan, G. (2016).The association between school stress, life satisfaction and depressive symptoms in adolescents: Life satisfaction as a potential mediator. *Soc Indic Res,* 125(1), 339-357. DOI: 10.1007/s11205-014-0842-0.

Mortimer, J.T., Zimmer-Gembeck M.J., Holmes M., & Shanahan, M.J. (2002). The process

of occupational decision making: Patterns during the transition to adulthood. *Journal of Vocational Behavior, 61,* 439-65.

Msall, M. E., Avery, R. C., Tremont, M. R., Lima, J. C., Rogers, M. L., & Hogan, D. P. (2003). Functional disability and school activity limitations in 41,300 school age children: Relationship to medical impairments. *Pediatrics, 111*(3), 548-553.

Mulatu, M. S. (1997). Stress, coping, and adaptation in Ethiopian adolescents: Testing the applicability of the transactional model of stress and coping. Dissertation Abstracts International: Section B: The Sciences and Engineering, 58(5-B), 2692.

Muluneh, A., Haileamlak, A., Tessema, F., Alemseged, F.,Woldemichael, K., Asefa,M., … Abebe, M. (2012). Population based survey of chronic non-communicable diseases at Gilgel Gibe Field Research Center, Southwest Ethiopia. *Ethiop J Health Sci*. , 22, 7-22.

Murberg, T. A., & Bru, E. (2004). School-related stress and psychosomatic symptoms among Norwegian adolescents. *School Psychology International*, 25(3), 317–332. doi: 10.1177/0143034304046904

Murray, C., & Greenberg, M. T. (2001). Relationships with teachers and bonds with school: Social emotional adjustment correlates for children with and without disabilities. *Psychology in the Schools*, *38*, 25-41.

Nabors, L. A., & Lehmkuhl, H. D. (2004). Children with chronic medical conditions: Recommendations for school mental health clinicians. *Journal of Developmental and Physical Disabilities*,*16 (1),* 1-15. DOI: 10.1023/B:JODD.0000010036.72472.55

Naguib, J. M., Kulinskaya, E., Lomax, C. L., & Garralda, M. E. (2009). Neuro-cognitive performance in children with type 1 diabetes-A meta-analysis. *Journal of Pediatric Psychology*, *34*, 271–282. doi: 10.1093/jpepsy/jsn074

Natvig, G.K., Albrektsen, G., Anderssen, N., & Qvarnstrøm, U. (1999).School-related stress

and psychosomatic symptoms among school adolescents. *J Sch Health, 69*(9), 362-368.

Natvig, G.K., Albrektsen, G., Qvarnstrøm, U. (2001). School-related stress as a risk factor for bulliying behavior. *Journal of Youth and Adolescence, 30*(5), 561-62.

Nelson, D., & Cooper, C. L. (Eds.). (2007). *Positive organizational behavior: Accentuating the positive at work.* Thousand Oaks, CA: Sage.

Newacheck, P. W., & Halfon, N. (1998). Prevalence and impact of disabling chronic conditions in childhood. *American Journal of Public Health, 88*(4), 610-617.

Newacheck, P. W., & Taylor, W.R. (1992). Childhood chronic illness: Prevalence, severity and impact. *American Journal of Public Health, 82*(3), 364-371.

Newcomer, J. W., Craft, S., Hershey, T., Askins, K., & Bardgett, M. E. (1994). Glucocorticoid-induced impairment in declarative memory performance in adult humans. *Journal of Neuroscience, 14*(4), 2047-2053.

Noh, J., & Shin, N. (2014). The moderating effect of optimistic thinking on the relationship between sixth-grade elementary school children's daily hassles and subjective well-being. *Korean J. of Child Studies*, 35(3), 137-156. doi : dx.org/10.5723/KJCS.2014.35.3.137**.**

Noor, R., Gul, S., & Khalil, M.T. (2017). PsyCap as predictor of psychological adjustment among parents of intellectually disabled children, *J. Appl. Environ. Biol. Sci.*, 7(1), 203-206.

Nunnally, J.C. & Bernstein, I. H. (1994). The assessment of reliability. *Psychometric Theory*, 3,248-292.

O'Callaghan C., & Barry, P., (2000). How to choose delivery devices for asthma. *Archives of Disease in Childhood*, 82, 185–187.

Ollfors, M., & Andersson, S. I. (2007). Ability of stress, sense of control, and self-theories to

predict swedish high school students' final grades. *Educational Research and Evaluation, 13*(2), 143 – 169.

Pallant, J. (2011). *SPSS survival manual: a step by step guide to data analysis using the SPSS (4th ed.)*. Crow's Nest, NSW: Allen & Unwin.

Parcel, T. L., & Dufur, M. J. (2001). Capital at home and at school: Effects on student achievement. *Social Forces, 79*(3), 881-911.

Parent, K., Wodrich, D., & Hasan, K. (2009). Type 1 diabetes mellitus and school: a comparison of patients and healthy siblings. *Pediatric Diabetes, 10,* 554-562. doi: 10.1111/j.1399-5448.2009.00532.x

Peterson, C., & Seligman, M. (2004). *Character strengths and virtues*: *A handbook and classification*. New York: Oxford University Press.

Phelan, P., Yu, H.C. & Davidson, A.L. (1994). Navigating the psychosocial pressures of adolescence: the voices and experiences of high school youth. *American Research Journal, 31*, 415–447.

Piekarska, A. (2015). School stress, teachers' abusive behaviors, and children's coping strategies. *Child Abuse & Neglect, 24 (11),* 1443–1449.

Pincus, D.B., & Friedman, A.G. (2004). Improving children's coping with everyday stress: transporting treatment interventions to the school setting. *Clinical Child and Family Psychology Review*, 7 (4), 223-240.

Pinquart, M., & Shen, Y. (2011). Behavior problems in children and adolescents with chronic physical illness: A meta-analysis. *Journal of Pediatric Psychology, 36,* 1003–1016. doi:10.1093/ jpepsy/jsr042.

Pinquart, M., & Teubert, D. (2011). Academic, physical, and social functioning of children and adolescents with chronic physical illness: A meta-analysis. *Journal of Pediatric Psychology, 37,* 376–389. doi:10.1093/jpepsy/jsr106.

Pless, I., & Roghmann, K. (1971). Chronic illness and its consequences: Observations based on three epidemiologic survey. *Journal of Pediatrics,* 79(3):351–59.

Polluck, W. S. (2004). Parent-child connections: The essential component for positive youth development and mental health, safe communities, and academic achievement. *New Directions for Youth Development, 103*, 17-30.

Puffer, E. S., Drabkin, A. S., Stashko, A. L., Broverman, S., Ogwang- Odhiambo, R., & Sikkema, K. J. (2012). Orphan status, HIVrisk behavior, and mental health among adolescents in rural Kenya. *Journal of Pediatric Psychology*, 37(8), 868_878. doi: http://dx.doi.org/10.1093/jpepsy/jss077

Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse Neglect, 34,* 244-252.

Reynolds, K., & Helgeson, V. (2011). Children with diabetes compared to peers: depressed? distressed? *Ann Behav Med, 42,* 29–41.

Rioli, L., Savicki, V., & Richards, J. (2012). Psychological capital as a buffer to student stress. *SciRes*, *12(3)*, 1202-1207.

Roberts, S., Scherer, L., & Bowyer, C. (2011). Job stress and incivility: What role does psychological capital play? *Journal of Leadership & Organizational Studies*, 18, 449-58.

Rovet, J. F., Ehrlich, R. M. Czuchta, D. & Akler, M.(1993). Psycho-educational characteristics of children and adolescents with insulin-dependent diabetes mellitus. *JOURNAL OF LEARNING DISABILITIES*, 26 (1) 7-22.

Russell, D. W., Kahn, J. H., Spoth, R., & Altmaier, E. M. (1998). Analyzing data from experimental studies: A latent variable structural equation modeling approach.*Journal of Counseling Psychology, 45*, 18–29.doi: 10.1037/0022-0167.45.1.18.

Santos, T., de Matos M.G., Simões, M.C., Fonseca, H. & Machado, M.D. (2013). Individual factors related to chronic condition in Portuguese adolescents: Highlights from the HBSC/WHO study. *Health Spec Issue Chron Dis Res, 5,* (11B), 25-34. http://dx.doi.org/10.4236/health.2013.511A2005

Santos, T., Ferreira, M., Simo˜es, M. C., de Matos, M. G., & Machado, M. C. (2014). Chronic condition and risk behaviours in portuguese adolescents. *Global Journal of Health Science,* 6, 227–236.

Santos, T., de Matos,M.G., Simões, C & Machado, M.D. (2015). Psychological well-being and chronic condition in Portuguese adolescents. *International Journal of Adolescence and Youth*, 1-12. DOI: 10.1080/02673843.2015.1007880

Schickedanz, J. A. (1995). Family socialization and academic achievement. *Journal of Education*, *177*(1), 17-38.

Schmeelk-Cone, K. H., & Zimmerman, M. A. (2003). A longitudinal analysis of stress in African American youth: Predictors and outcomes of stress trajectories. *Journal of Youth and Adolescence, 32(6), 419–430.*

Schraml, K., Perski, A., Grossi, G., & Makower, I. (2012). Chronic stress and its consequences on subsequent academic achievement among adolescents. *Journal of Educational and Developmental Psychology, 2(1),* 69-79. doi:10.5539/jedp.v2n1p 69.

Schumacker, R. & Lomax, R. (2010). *A Beginner's Guide to Structural Equation Modeling, (3rd ed.).* Mahwah, NJ: Lawrence Erlbaum

Seiffge-Krenke, I.,Weidemann, S., Fentner, S., Aegenheister, N., & Poeblau, M. (2001). Coping with school-related stress and family stress in healthy and clinically referred adolescents. *European Psychologist*, Abstract.

Seligman, M. (1998). *Learned optimism*. New York, NY: Pocket Books.

Seligman, M. (2006). Learned optimism: How to change your mind and your life. New

York, NY: Vintage.

Seligman, M., & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *AmericanPsychologist*, *55*, 5-14.

Selye, H. (1951). The general adaptation syndrome and the diseases of adaptation. *The American Journal of Medicine*, *10*(5), 549-555.

Selye H. (1978). *The stress of life(2nd ed*.) New York: Mc Graw – Hill.

Sentenac, M., Arnaud, C., Gavin, A., Moicho, M., Gabhainn, S. N., & Godeau, E. (2012). Peer victimization among school-aged children with chronic conditions. *Epidemiol Rev., 34*, 120-128.

Sexson, S., and Madan-Swain, A. (1995). The chronically ill child in school. *Sch. Psychol. Quarterly* 10(4), 359–368.

Shakarami, M., Davarniya, R., Zahrakar, K., & Hosseini, A. (2014). The predictive role of psychological capital, psychological hardiness and spiritual intelligence in students' psychological well-being. *Journal of Research Health, 4(4), 935-943.*

Shaunessy, E., Suldo, S. M., Hardesty, R. B., & Shaffer, E. S. (2006). School functioning and psychological well-being of International Baccalaureate and general education students: A preliminary examination. *Journal of Secondary Gifted Education*, *17*, 76 – 89.

Shaw, S.R., Glaser, S.E., Stern, M., Sferdenschi, C., McCabe, P.C. (2010). Responding to student's chronic illnesses. *Principal Leadership*, 12-16.

Shaw, S. R., Gomes, P., Polotskaia, A., & Jankowska, A. M. (2015). The relationship between student health and academic performance: Implications for school psychologists. *School Psychology International, 36(*2) 115–134. DOI: 10.1177/0143034314565425

Shaw, S.R., & McCabe, P.C. (2008). Hospital-to-school transition for children with chronic

illness: Meeting the new challenges of an evolving health care system. *Psychology in the Schools, 45*(1), 74-87.

Shillingford, A. J., Glanzman, M. M., Ittenbach, R. F., Clancy, R. R., Gaynor, J. W., & Wernovsky, G. (2008). Inattention, hyperactivity, and school performance in a population of school-age children with complex congenital heart disease. Pediatrics, 121(4), e759–e767. doi:10.1542/peds.2007-1066

Shiu, S. (2001). Issues in the education of students with chronic illness. International *Journal of Disability, Development and Education*, 48(3), 269-281, DOI: 10.1080/10349120120073412

Snyder, C.R. (2000). *Handbook of hope*. San Diego: Academic Press.

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry, 13,* 249–275.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., . . . Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, *60*, 570–585.

Snyder, C., Sympson, S.C., Ybasco, F., Borders, T., Babyak, M. & Higgins, R. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, *70*, 321–335.

Stewart, E. B. (2008). School structural characteristics, student effort, peer associations, and parental involvement: The influence of school and individual-level factors on academic achievement. *Education and Urban Society, 40*(2), 179-204.

Suhr, D. (2006).The basics of structural equation modeling. *Presented: Irvine, CA, SAS User Group of the Western Region of the United States (WUSS) International Conference.* http://www.lexjansen.com/wuss/2006/tutorials/tut-suhr.pdf.

Suldo, M.A., Shaunessy, E., & Hardest, R. (2008). Relationships among stress, coping, and mental health in high-achieving high school students. *Psychology in the Schools, 4 5*(4), 273-290.

Suldo, S.M., Shaunessy, E., Thalji, A., Michalowski, J., & Shaffer, E. (2009). Sources of stress for students in high school college preparatory and general education programs: Group Differences and Associations with Adjustment. *Adolescence, 44*(176), 925-948.

Sun, R. C. F., & Shek, D. T. L. (2012). Positive youth development, life satisfaction and problem behavior among Chinese adolescents in Hong Kong: A replication. *Social Indicators Research, 105*, 541-559.

Sungur, S., & Güngören, S. (2009). The role of classroom environment perceptions in self-regulated learning and science achievement. *Elementary Education Online*, *8*(3), 883–900.

Suris, J.C., Michaud, P.A., & Viner, R. (2004).The adolescent with a chronic condition. Part I: developmental issues. *Arch Dis Child, 89*, 938–942. doi: 10.1136/adc.2003.045369

Swift, P. (1997). Optimization of insulin treatment in children. *Annals of Medicine, 29*,419–424.

Tabachnick, B.G., & Fidell, L.S. (2013). Using Multivariate Statistics, (6th ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.

Tamer, I., Dereli, B., & Saglam, M. (2014). Unorthodox forms of capital in organizations: positive psychological capital, intellectual capital and social capital. Procedia - Social and Behavioral Sciences 152, 963 – 972. doi: 10.1016/j.sbspro.2014.09.351

Thies, K.M., (1999). Identifying the educational implications of chronic illness in school children. *Journal of School Health. 69*(10), 392-397.

Thorsteinsson, E. B., Ryan,S. M., Sveinbjornsdottir, S. (2013). The mediating effects of

social support and coping on the stress-depression relationship in rural and urban adolescents. SciRes, *2(1)*, 1-6. http://dx.doi.org/10.4236/ojd.2013.

Tjakraatmadja, J. H. & Febriansyah, H. (2007). The influence psychological capital and learning environment toward SBM- ITB students' GPA. *Indonesian Journal of the Science of Management ,6(1),* 1-7.

Tjakraatmadja, J.H.,Hendarman, A.F. & Amriel,E.Y. (2011). The influence of learning system and learning environment toward psychological capital and gpa of management itb students (IBMRC). Paper presented at The 1st International Business Management Research Conference (IBMRC) at Chiang Mai, Thailand.

Torsheim, T., Aaroe, L.E., & Wold, B. (2003). School-related stress, social support, and distress: Prospective analysisof reciprocal and multilevel relationships. *Scandinavian Journal of Psychology*, *44*, 153–159.

Torsheim, T. & Wold, B. (2001). School-related stress, school support, and somatic complaints: A general population study. *Journal of Adolescent Research*, 16 (3), 293-303.

Tsai, T. I., Lee. H. M., & Hsu, C. H. (2012). *Assessing the impact of psychological capital on college students majoring in hospitality: A potentially value-added resource?* .Retrieved from http://bai-conference.org /BAI2012proceedings/ papers/7

Underwood, T. H. (1997). IDDM youths' perceptions of well-youths' attitudes [Abstract]. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 57*(11-B), 7239.

Uzark, K., Jones, K., Slusher J., Limbers, C.A, Burwinkle, T.M., Varni, J.W. (2008). Quality of life in children with heart disease as perceived by children and parents. *Pediatrics, 121*, 1060–1067.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and

academic achievement: A meta-analytic review. *Educational Psychologist, 39,* 111–133.

Valle, M. F., Huebner, E. S., Suldo, S.M. (2006). An analysis of hope as a psychological strength. Journal of School Psychology,44, 393–406. doi:10.1016/j.jsp.2006.03.005

Van Cleave, J., Gortmaker, S. L., & Perrin, J. M. (2010). Dynamics of obesity and chronic health conditions among children and youth. *Journal of the American Medical Association, 303*(7), 623–630.

van der Lee, J., Mokkink, L. B., Grootenhuis, M. A., Heymans, H. S., & Offringa, M. (2007). Definitions and measurement of chronic health conditions in childhood: A systematic review. *Journal of the American Medication Association, 29,* 2741–2751.

Van Lier, P. A. C., Vitaro, F., Barker, E. D., Brendgen, M., Tremblay, R. E., & Boivin, M. (2012). Peer victimization, poor academic achievement, and the link between childhood externalizing and internalizing problems. *Child Development, 83,* 1775–1788. doi:10.1111/j.1467-8624.2012.01802.x.

Wallander, J.L., & Varni, J.W. (1988). Children with chronic physical disorders: maternal reports of their psychological adjustment. *Journal of Pediatric Psychology, 13(2), 197-212.*

Wang, M., & Peck, S. C. (2013). Adolescent educational success and mental health vary across school engagement profiles. *Developmental Psychology, 49*(7), 1266-1276.

Wang, X., Zheng, Q., & Cao, X. (2014). Psychological Capital: A New Perspective for Psychological Health Education Management of Public Schools. *Public Personnel Management, 43*(3) 371–383. doi: 10.1177/0091026014535182

Wenzel, K. R. (1989). Adolescent classroom goals, standards for performance and academic achievement: an interactionist perspective. *Journal of Educational Psychology,* 81, 131–142.

Windle, M. & Windle, R.C. (1996). Coping strategies, drinking motives, and stressful life events among middle adolescents: Associations with emotional and behavioral problems and with academic functioning. *Journal of Abnormal Psychology, 105(4),* 551–560.

Wodrich, D.L., Hasan, K. & Parent, K.B. (2011). Type 1 diabetes mellitus and school: a review. *Pediatric Diabetes, 12,* 63-70. doi: 10.1111/j.1399-5448.2010.00654.x

Wray, J. & Radley-Smitha R. (2010).Cognitive and behavioral functioning of children listed for heart and/or lung transplantation. *American Journal of Transplantation,* 10, 2527–2535. doi: 10.1111/j.1600-6143.2010.03282.x

Wright, M., & Nolan, T. (1994). Impact of cyanotic heart disease on school Performance. *Archives of Disease in Childhood,* 71, 64-70.

Wright, P.W.D. & Wright, P.D. (2011). *Special education law (2nd ed*.). Hartfield, VA: Harbor House Law Press.

Yan, W., & Lin, Q. (2005). Parent involvement and mathematics achievement: Contrast across racial and ethnic groups. *The Journal of Educational Research, 99*(2), 116-127.

Yi-Frazier, J.P., Hilliard, M., Cochrane, K., & Hood, K.K. (2012). The Impact of Positive Psychology on Diabetes Outcomes: A Review. *SciRes, 3*(12A), 1116-1124.

Youssef, C. M., & Luthans, F. (2007). Positive organizational behavior in the workplace: The impact of hope, optimism, and resilience. *Journal of Management, 33,* 774–800.

Youssef-Morgan, C. M., & Luthans, F. (2015). Psychological capital theory: Toward a positive holistic model. *Advances in Positive Organizational Psychology, 1,* 145-166. http://dx.doi.org/10.1108/S2046-410X(2013)0000001009

Zashikhina, A. & Hagglof, B. (2007). Mental health in adolescents with chronic physical illness versus controls in Northern Russia. *Acta Pædiatrica* 96, 890–896. DOI:10.1111/j.1651-2227.2007.00277.

Appendices

Appendix A: Instruments

Appendix A1: English Version

Addis Ababa University

College of Education and Behavioral Studies

Department of Special Needs Education

Parents/Guardians Consent Form

Dear Parents/Guardians,

The purpose of this study is to examine school-related stress, academic achievement, behavior difficulties and psychological capital of students with and without health impairments in Addis Ababa. The study is conducted as partial fulfillment of the requirements for Doctor of Philosophy degree in Special Needs Education at Addis Ababa University. Findings of the study may provide useful information about school-related stress and its relationship with academic achievement and behavior difficulties in the school and serve as an input for the development and implementation of strength-based intervention programs aimed at improving school-related outcomes of adolescent students.

If you give approval to your child to participate in the study, he/she will be asked to fill out a packet of questionnaire containing four parts. The questionnaire seeks information about your child's background information, perceived school-related stress, behavior in the school and psychological capital. You are also cordially requested to provide me your consent to look at the school records of his/her semester cumulative score average. The data will be gathered under the guidance of you child's school principal and homeroom teacher.

All the information gathered will be kept completely anonymous and confidential. Your child will be assured that his or her teachers, parents and other students will not see the questionnaire he/she completed. Participation in the study is voluntary and your child is completely free to withdraw from the study at any time and for any reason. There are no foreseeable risks associated with your child's participation in the study. I hope you will agree to allow your child to take part in this important research.

If you have any questions about this research, please contact the principal researcher at any time via the following address: Birhanu Nebiyou, cell phone, +251911987953 or email: birhanu.nebiyou@gmail.com

Declaration

Consent that Allows the Child to Participate in the Study

I give informed consent to my child to take part in this study entitled "School-related Stress and Outcomes among Students with and without Health Impairments in Addis Ababa: The Moderating Role of Psychological Capital." I have read, or it has been read to me, and understood the nature and purpose of this research. I have also granted permission to the researchers to access my child's school records.

Child's Name: _____

School Name and Address: _____

Parent's/Guardian's Name and Signature:_____

Date: _____

Statement of Person Obtaining the Informed Consent

I confirm that I have conveyed all the information about the nature and purpose the study.

Name and Signature _____

Role in the study_____

Date_____

Students Assent Form

Dear Participants,

The purpose of this study is to examine school-related stress, academic achievement, behavior difficulties and psychological capital of students with and without health impairments in Addis Ababa. The study is conducted as partial fulfillment of the requirements for Doctor of Philosophy degree in Special Needs Education at Addis Ababa University. Findings of the study may provide useful information about school-related stress and its relationship with academic achievement and behavior difficulties in the school and serve as an input for the development and implementation of strength-based intervention programs aimed at improving school-related outcomes of adolescent students.

If you are willing to take part in the study, you will be asked to fill out a packet of questionnaire containing four parts. The first part deals with your background information. The second part covers about your perceived school-related stress. The third part consists of items about your behavior in the school. The last one assesses your psychological capital. You are also cordially requested to provide your consent to look at your school records for your semester cumulative score average. This information will be gathered under the guidance of your school principal and homeroom teacher.

All the information gathered for the study will be kept completely anonymous and confidential. You are assured that your teachers, parents and other students will not see the questionnaire that you completed. Participation is voluntary and you are completely free to withdraw from the study at any time and for any reason. There are no foreseeable risks associated with your participation in the study. Therefore, I kindly request you to complete this questionnaire as carefully, honestly and accurately as possible.

If you have any questions about this research, please contact the principal researcher at any time via the following address: Birhanu Nebiyou, cell phone, +251911987953 or email: birhanu.nebiyou@gmail.com

Thank you in advance for your cooperation!

Declaration

Assent to Participate in the Study

I agree to take part in this study entitled, "School-related Stress and Outcomes among Students with and without Health Impairments in Addis Ababa: The Moderating Role of Psychological Capital." I have read and understood the nature and purpose of the study. I have also granted permission to researchers to access my school records.

Name and Signature of student _____

Date_____

Statement of Person Obtaining Informed Consent

I affirm that I have conveyed all the information about the nature and purpose of the study.

Name and Signature _____

Role in the study_____

Date_____

Part One: Demographic Questionnaire

Instructions: The following items ask about your background information. For the items with options, circle the number of your choice and for the items without options, write the response that you think is right on the space provided.

1. Sex: 1. Male 2. Female

2. Current age in years_____

3. Your current grade at school_____

4. Religion_____

5. The level of your family income in comparison with your fellow students' families:

1. Low 2. Moderate 3. High

6. Do you have any health impairment?

1. Yes 2. No

7. If your answer to item 6 is yes, what is the type of your health impairment?

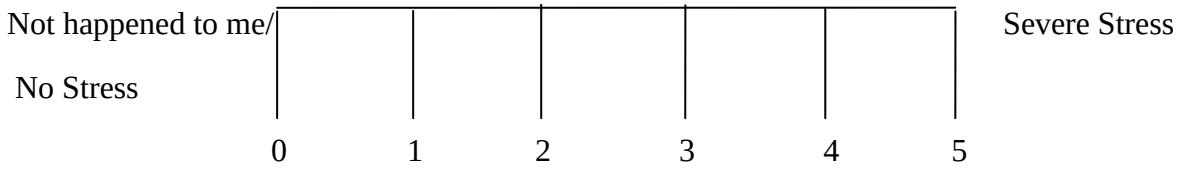
1. Diabetes Mellitus 2. Heart Disease 3. Other

8. Perceived severity of your health impairment:

1. Mild 2. Moderate 3.Severe

Part Two: Perceived School-Related Stress Scale

Instructions: The following items describe different stressful situations at school. If you have experienced each event in the last month, please indicate the perceived stressfulness of each event using a scale ranging from"0" (not occurred at me/no stress) to "5" (severe stress). Please encircle a number that you think best represents your level of strain/stress in front of each item or statement.



S.N	Items	Scale					
		0	1	2	3	4	5
1	Difficulties with other pupils	0	1	2	3	4	5
2	Being bullied by other pupils at school	0	1	2	3	4	5
3	Having only a few friends at school	0	1	2	3	4	5
4	Difficulties with your friends at school	0	1	2	3	4	5
5	Not having many friends during after-school hours	0	1	2	3	4	5
6	Being worried about not performing well at school	0	1	2	3	4	5
7	Being worried about grades	0	1	2	3	4	5
8	Setting ambitious goals to yourself	0	1	2	3	4	5
9	Being worried about tests	0	1	2	3	4	5
10	Being concerned about schoolwork which you have not done or you have not done well	0	1	2	3	4	5
11	Having too many things to do outside of school	0	1	2	3	4	5
12	Thinking that schoolwork has been too demanding	0	1	2	3	4	5
13	Not having enough help and guidance with your schoolwork	0	1	2	3	4	5
14	Not getting on well with your parents because of schoolwork	0	1	2	3	4	5
15	Your parents high expectation from you with regard to schoolwork	0	1	2	3	4	5
16	Difficulties with your teachers	0	1	2	3	4	5

Part Three: Strengths and Difficulties Questionnaire

Instructions: Below is a list of items that describe about your behavior. Please read each item carefully and respond by encircling 0 for Not True, 1 for Somewhat True and 2 for Certainly True on the basis of how things have been for you at school over the last six months.

S.N		Not True 0	Somewhat True 1	Certainly True 2
1	I try to be nice to other people. I care about their feelings.	0	1	2
2	I am restless; I cannot stay still for long.	0	1	2
3	I get a lot of headaches, stomach-aches or sickness	0	1	2
4	I usually share things with others (food, games, pens, etc.)	0	1	2
5	I get very angry and often lose my temper.	0	1	2
6	I am usually on my own. I generally play alone or keep to myself	0	1	2
7	I usually do as I am told.	0	1	2
8	I worry a lot.	0	1	2
9	I am helpful if someone is hurt, upset or feels ill	0	1	2
10	I am constantly fidgeting or squirming	0	1	2
11	I have one good friend or more	0	1	2
12	I fight a lot. I can make other people do what I want	0	1	2
13	I am often unhappy, down-hearted or tearful	0	1	2
14	Other people of my age generally like me	0	1	2
15	I am easily distracted, I find it difficult to concentrate	0	1	2
16	I am nervous in new situations. I easily lose confidence	0	1	2
17	I am kind to younger children	0	1	2
18	I am often accused of lying or cheating	0	1	2
19	Other children or young people pick on me or bully me	0	1	2
20	I am often volunteer to help others (parents, teachers, children)	0	1	2
21	I think before I do things	0	1	2
22	I take things that are not mine from home, school or elsewhere	0	1	2
23	I get on better with adults than with people of my own age	0	1	2
24	I have many fears, I am easily scared	0	1	2
25	I finish the work I'm doing. My attention is good	0	1	2

Part Four: Psychological Capital Questionnaire

Instructions: These statements describe how you may think about yourself right now. Use the following scale to indicate your level of agreement or disagreement with each statement. Please encircle the number that represents your answer.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

S.N		1	2	3	4	5	6
1.	In relation to my academics, I feel confident to analyze a long-term problem and find a solution.	1	2	3	4	5	6
2.	I feel confident to represent my class in meetings with teachers and management.	1	2	3	4	5	6
3.	I feel confident to contribute to discussions about school functioning.	1	2	3	4	5	6
4.	I feel confident to help set targets/goals for my school.	1	2	3	4	5	6
5.	I feel confident to contact people outside the school and discuss problems.	1	2	3	4	5	6
6.	I feel confident to present information to a group of students.	1	2	3	4	5	6
7.	If I should find myself in a jam of schoolwork, I could think of many ways to get out of it.	1	2	3	4	5	6
8.	At the present time, I am energetically pursuing my academic goals.	1	2	3	4	5	6
9.	There are lots of ways around any problem.	1	2	3	4	5	6
10.	Right now, I see myself as being pretty successful in my academics.	1	2	3	4	5	6
11.	I can think of many ways to reach my current academic goals.	1	2	3	4	5	6
12.	At this time, I am meeting the academic goals that I have set for myself.	1	2	3	4	5	6
13.	When I have a setback in my academics, I have trouble to recover	1	2	3	4	5	6

	from it and move on.						
14.	I usually manage difficulties in one way or another at school.	1	2	3	4	5	6
15.	I can be "on my own," so to speak at academic work if I have to.	1	2	3	4	5	6
16.	I usually take stressful things at school in stride.	1	2	3	4	5	6
17.	I can get through difficult times at school because I have experienced difficulty before.	1	2	3	4	5	6
18.	I feel I can handle many things at a time related to my academics.	1	2	3	4	5	6
19.	When things are uncertain for me at schoolwork, I usually expect the best.	1	2	3	4	5	6
20.	If something can go wrong for me academic work-wise, it will.	1	2	3	4	5	6
21.	I always look on the bright side of things regarding my academic work.	1	2	3	4	5	6
22.	I am optimistic about what will happen to me in the future as it pertains to my academics.	1	2	3	4	5	6
23.	In academic work, things never work out the way I want them to.	1	2	3	4	5	6
24.	I approach my academic work as if "every cloud has a silver lining."	1	2	3	4	5	6

Appendices A2: Amharic Version

አዲስ አበባ ዩኒቨርሲቲ
የትምህርትና ባህሪይ ጥናት ኮሌጅ
የልዩ ፍላጎት ትምህርት ክፍል
የወላጅ/አሳዳጊ ስምምነት መጠየቂያ ቅፅ

ውድ የጥናቱ ተሳታፊ ወላጆች/ አሳዳጊዎች

የዚህ ጥናት ዋና ዓላማ በአዲስ አበባ ከተማ መስተዳድር ውስጥ የሚማሩ የረጅም ጊዜ ወይም ሙሉ የህይወት ዘመን የጤና ክትትል የሚፈልግ የጤና ጉድለት/እክል ያለባቸው እና የሌለባቸው ተማሪዎችን የትምህርት ቤት-ነክ ውጥረት፣ የትምህርት ውጤት፣ የባህሪይ ችግር እና ዓወንታዊ ሥነ-ልቦና ኃይልን በጥልቀት ለመመርመር ነው፡፡ ጥናቱ የሚካሄደው በአዲስ አበባ ዩኒቨርሲቲ፣ የልዩ ፍላጎት ትምህርት ክፍል ለዶክትሬት ዲግሪ ማሟያ ነው፡፡ የዚህ ጥናት ግኝት የትምህርት ቤት-ነክ ውጥረት ከተማሪዎች ትምህርት ውጤትና የባህሪይ ችግር ጋር ያለውን ዝምድና በተመለከተ ጠቃሚ መረጃ ከመስጠቱ በሻገር ሥነ-ልቦናዊ ጥንካሬን መሰረት ያደረገ እና ትምህርት ቤት-ነክ ውጤቶችን ለማሻሻል የሚረዳ ፕሮግራም ለማዘጋጀት እና ለመተግበር እንደ ግብዓት ሆኖ ያገለግላል፡፡

ልጅዎ በጥናቱ እንዲሳተፍ/እንድትሳተፍ ፍቃድዎን ከሰጡ፣ ልጁ/ልጅቷ አራት የተለያየ ክፍል ያለው ጥቅል መጠይቅ እንዲሞላ/እንድትሞላ ይጠየቃል/ትጠየቃለች፡፡ ጥቅል መጠይቁ የልጁን/ልጅቷን ዳራዊ መረጃ፣ ትምህርት ቤት-ነክ ውጥረት፣ ባህሪይ እና ዓወንታዊ ሥነ-ልቦና ኃይልን ይዳስሳል፡፡ በተጨማሪም የልጅዎን አማካኝ ድምር ውጤት ከትምህርት ቤት መዝገብ ላይ እንድዎስድ ፍቃድዎን እንዲሰጡኝ በትህትና እጠይቃለሁ፡፡ ይህ መረጃ በትምህርት ቤቱ ርዕሰ መምህርና በክፍል ተጠሪው እገዛ አማካኝነት የሚሰበሰብ ይሆናል፡፡

ከልጅዎ የሚሰበሰበው መረጃ በስም ተለይቶ የማይመዘገብ ሲሆን ሙሉ በሙሉ በሚስጥር ይያዛል፡፡ በልጅዎ የተሞላውን መጠይቅ መምህራን፣ ወላጆች እና ሌሎች ተማሪዎች እንደማያዩት ላረጋግጥልዎ እወዳለሁ፡፡በዚህ ጥናት ላይ ልጅዎ የሚሳተፈው/የምትሳተፈው በሙሉ ፍቃደኝነቱ/ቷ ሲሆን በጥናቱ ያለመሳተፍና በማንኛውም ሰዓትም ሆነ ምክንያት የማቋረጥ መብቱ/ቷ/ የተጠበቀ ነው፡፡ ልጅዎ በዚህ ጥናት ከመሳተፉ/ፏ ጋር በተያያዘ ሊገጥመው/ማት የሚችል ችግር የለም፡፡ በዚህ ጠቃሚ ጥናት ልጅዎ እንዲሳተፍ/እንድትሳተፍ ፍቃድዎን ለመስጠት እንደሚስማሙ ተስፋ አደርጋለሁ፡፡

ይህን ጥናት በተመለከተ ማንኛውም ጥያቄ ካለወት ዋና ተመራማሪውን በሚከተለው አድራሻ ማግኘት ይችላሉ፡፡ ብርሃኑ ነብዩ፡- ስልክ ቁጥር- +251911987953 **፣ኢሜል-** birhanu.nebiyou@gmail.com

የስምምነት መግለጫ

“በአዲስ አበባ ከተማ መስተዳድር ውስጥ የሚማሩ የረጅም ጊዜ ወይም ሙሉ የህይወት ዘመን የጤና ክትትል የሚፈልግ የጤና ጉድለት/እክል ያለባቸው እና የሌለባቸው ተማሪዎች የትምህርት ቤት-ነክ ውጥረት እና ውጤቶች ዝምድና መካከል የዓወንታዊ ሥነ-ልቦና ኃይል ሚና” በሚል ጥናት ርዕስ ልጄ እንዲሳተፍ/እንድትሳተፍ በመረጃ ተመርኩዤ ስምምነቴን ገልጫለሁ፡፡ የጥናቱን ዓላማና ምንነት አንብቤ (በግልፅ ተነግሮኝ) ተገንዝቤዋለሁ፡፡ በተጨማሪም ተመራማሪው የልጄን የትምህርት ቤት መዝገብ እንዲመለከት ፍቃዴን ሰጥቻለሁ::

የልጄ ስም_____

የልጄ ትምህርት ቤት ስምና አድራሻ_____

የወላጅ/አሳዳጊ ስምና ፊርማ_____

ቀን_____

<u>የስምምነቱ ተቀባይ መግለጫ</u>

ስለ ጥናቱ ዓላማና ምንነት ሙሉ መረጃ ለተሳታፊው/ዋ ወላጅ/አሳዳጊ እንዳስተላለፍሁ አረጋግጣለሁ፡፡

ስምና ፊርማ_____

በጥናቱ ውስጥ ያለህ/ሽ ሚና_____

ቀን_____

የተማሪዎች ስምምነት መጠየቂያ ቅፅ

ውድ የጥናቱ ተሳታፊዎች

የዚህ ጥናት ዋና ዓላማ በአዲስ አበባ ከተማ መስተዳድር ውስጥ የሚማሩ የረጅም ጊዜ ወይም ሙሉ የህይወት ዘመን የጤና ክትትል የሚፈልግ የጤና ጉድለት/ እክል ያለባቸው እና የሌለባቸው ተማሪዎችን የትምህርት ቤት-ነክ ውጥረት፣ የትምህርት ውጤት፣ የባህሪይ ችግር እና ዓወንታዊ ሥነ-ልቦና ኃይልን በጥልቀት ለመመርመር ነው፡፡ ጥናቱ የሚካሄደው በአዲስ አበባ ዩኒቨርሲቲ፣ የልዩ ፍላጎት ትምህርት ክፍል ለዶክትሬት ዲግሪ ማሟያ ነው፡፡ የዚህ ጥናት ግኝት የትምህርት ቤት-ነክ ውጥረት ከተማሪዎች ትምህርት ውጤትና የባህሪይ ችግር ጋር ያለውን ዝምድና በተመለከተ ጠቃሚ መረጃ ከመስጠቱ ባሻገር ሥነ-ልቦናዊ ጥንካሬን መሰረት ያደረገ እና የትምህርት ቤት-ነክ ውጤቶችን ለማሻሻል የሚረዳ ፕሮግራም ለማዘጋጀት እና ለመተግበር እንደ ግብዓት ሆኖ ያገለግላል፡፡

በዚህ ጥናት ለመሳተፍ ፍቃደኛ ከሆንህ/ሽ አራት የተለያየ ክፍል ያለው ጥልቅ መጠይቅ የምትሞላ/ይ/ ይሆናል፡፡ የመጀመሪያው ክፍል ዳራዊ መረጃን ይመለከታል፡፡ ሁለተኛው ክፍል ትምህርት ቤት-ነክ ውጥረትን ይዳስሳል፡፡ ሦስተኛው ክፍል ባህሪይን የተመለተ ዝርዝሮች ይይዛል ፡፡ የመጨረሻው ክፍል ዓወንታዊ ሥነ-ልቦና ኃይልን ይመዝናል፡፡ በተጨማሪም አማካኝ ድምር ውጤትህ/ሽን ከትምህርት ቤት መዝገብህ/ሽ ላይ የምፆስድ ይሆናል፡፡ ይህ መረጃ በትምህርት ቤቱ ርዕሰ መምህርና በክፍል ተጠሪው ድጋፍ የሚሰበሰብ ይሆናል፡፡

የሚሰበሰበው መረጃ በስም ተለይቶ የማይመዘገብ ሲሆን ሙሉ በሙሉ በሚስጥር ይያዛል፡፡ የሞላኸ/ሽ/ውን መጠይቅ መምህራን፣ ወላጆች እና ሌሎች ተማሪዎች እንደማያዩት ላረጋግጥልህ/ሽ እወዳለሁ፡፡ በዚህ ጥናት ላይ የምትሳተፈ/ፊ/ው በሙሉ ፍቃደኝነትህ/ሽ ሲሆን በጥናቱ ያለመሳተፍና በማንኛውም ሰዓትም ሆነ ምክንያት የማቋረጥ መብትህ/ሽ የተጠበቀ ነው፡ ፡ በዚህ ጥናት ላይ ከመሳተፍህ/ሽ ጋር በተገናኘ ሊገጥምህ/ሽ የሚችል ችግር የለም፡፡ ስለዚህ ይህን መጠይቅ በጥንቃቄ ፣በታማኝነት እና በትክክል እንድትሞላ/ይ በትህትና እጠይቃለሁ፡፡

ይህን ጥናት በተመለከተ ማንኛውም ጥያቄ ካለህ/ሽ ተመራማሪውን በሚከተለው አድራሻ ማግኘት ይቻላል፡፡ብርሃኑ ነብዩ፡- ስልክ ቁጥር +251911987953 ፣ኢሜል- birhanu.nebiyou@gmail.com

ስለትብብርህ/ሽ በቅድሚያ አመሰግናለሁ፡፡

የስምምነት መግለጫ

“በአዲስ አበባ ከተማ መስተዳድር ውስጥ የሚማሩ የረጅም ጊዜ ወይም ሙሉ የህይወት ዘመን የጤና ክትትል የሚፈልግ የጤና ጉድለት/እክል ያለባቸው እና የሌለባቸው ተማሪዎችን የትምህርት ቤት-ነክ ውጥረት እና ውጤቶች ዝምድና መካከል የዓወንታዊ ሥነ-ልቦና ኃይል ሚና” በሚል ጥናት ርዕስ ለመሳተፍ ተስማምቻለሁ፡፡ የጥናቱ አላማና ምንነት አንብቤ ተገንዝቤያለሁ፡፡ በተጨማሪም ተመራማሪው የትምህርት ቤት መዝገቤን እንዲመለከት ፈቅጃለሁ፡፡

የተማሪው/ዋ ስምና ፊርማ_____

ቀን_____

<u>የስምምነቱ ተቀባይ መግለጫ</u>

ስለ ጥናቱ ዓላማና ምንነት ሙሉ መረጃ ለተሳታፊው/ዋ እንዳስተላለፍሁ አረጋግጣለሁ፡፡

ስምና ፊርማ_____

በጥናቱ ውስጥ ያለህ/ሽ ሚና_____

ቀን_____

ክፍል አንድ፡- ዳራዊ መረጃ

መመሪያ፡- የሚከተሉት ጥያቄዎች የአንተን/ችን ግለ-ህይወት ዳራዊ መረጃዎችን ይመለከታሉ፡፡ አማራጭ ላላቸው ጥያቄዎች ምርጫህ/ሽ/ን የያዘውን ቁጥር አክብብ/ቢ፤ አማራጭ ለሌላቸው ጥያቄዎች ትክክለኛውን መልስህ/ሽ/ን በተሰጠው ክፍት ቦታ ፃፍ/ፊ፡፡

1. **ፆታ** 1. **ወንድ** 2. **ሴት**
2. **ዕድሜ**_____
3. **የክፍል ደረጃ**_____
4. **ሓይማኖት**_____
5. **የቤተሰብህ/ሽ ገቢ ከሌሎች ተማሪዎች የቤተሰብ ገቢ እንፃር ሲታይ**
   1. **ዝቅተኛ** 2. **መካከለኛ** 3. **ከፍተኛ**
6. **የጤና እክል አለብህ/ሽ/?**
   1. **አዎ አለብኝ** 2. **አይ የለብኝም**
7. **ለጥያቄ ተራ ቁጥር 6 መልስህ/ሽ/ አዎ ከሆነ፤ ምን ዓይነት የጤና እክል ነው የአለብህ/ሽ/?**
   1. **የስኳር ህመም** 2. **የልብ ህመም** 3. **ሌላ የጤና እክል**
8. **በአንተ/ች እይታ የጤና እክልህ/ሽ ደረጃ**
   1. **ዝቅተኛ** 2. **መካከለኛ** 3. **ከፍተኛ**

ክፍል ሁለት፡- የትምህርት ቤት-ነክ ውጥረት መጠን መለኪያ

መመሪያ፡- የሚከተሉት ጥያቄዎች የትምህርት ቤት-ነክ ውጥረትን የሚፈጥሩ ሁኔታዎችን/ክስተቶችን ይመለከታሉ፡፡ እያንዳንዱን ጥያቄ በጥሞና ካነበብህ/ሽ/ በኋላ ባለፈው አንድ ወር ውስጥ አንተ/ቺ/ን የገጠመህ/ሽ አስቸጋሪ ሁኔታ/ክስተት የፈጠረብህ/ሽን የውጥረት መጠን ምን ያህል እንደነበር የሚከተለውን መስፈርት በመጠቀም ትክክል ነው የምትለ/ይ/ውን አማራጭ ቁጥር በማክበብ መልስ/ሽ፡፡

ተ.ቁ	ክስተቶች						
1	ከሌሎች ተማሪዎች ጋር አለመግባባት	0	1	2	3	4	5
2	ትምህርት ቤት ውስጥ በሌሎች ተማሪዎች የደረሰብህ/ሽ ማስፈራራት/ መመታት/ መገለል/ሸፋት/ሀሜት	0	1	2	3	4	5
3	በትምህርት ቤት ውስጥ ጥቂት ብቻ ጓደኞች መኖር	0	1	2	3	4	5
4	በትምህርት ቤት ውስጥ ከሌሎች ተማሪዎች ጋር አለመግባባት	0	1	2	3	4	5
5	ከመደበኛው ትምህርት ቤት ሰዓት ውጭ ባለው ጊዜ ብዙ ጓደኞች አለመኖር	0	1	2	3	4	5
6	ትምህርት ቤት ውስጥ ጥሩ በአለመስራትህ/ሽ ያጋጠመህ/ሽ ስጋት	0	1	2	3	4	5
7	ስለ ትምህርት ውጤትህ/ሽ መስጋትህ/ሽ	0	1	2	3	4	5
8	ጓጉተህ/ሽያልተመጠኑ፤ለማሳካትየሚያዳግቱግቦች ማስቀመጥህ/ሽ	0	1	2	3	4	5
9	ስለ ፈተና መስጋትህ/ሽ	0	1	2	3	4	5
10	አሳስቦህ/ሽ የነበረ ምንም ያልሰራኸው/ሸው ወይም በጥሩ ሁኔት ያልሰራኸው/ሸው የትምህርት ቤት ስራ	0	1	2	3	4	5
11	ከትምህርት ቤት ውጪ የምትሰራቸው/ሪያቸው ብዙ ነገሮች መኖራቸው	0	1	2	3	4	5
12	የትምህርት ቤት ስራ በጣም አድካሚ እንደሆነ ማሰብህ/ሽ	0	1	2	3	4	5
13	በትምህርት ቤት ስራህ/ሽ በቂ እርዳታ እና ምክር ማግኘት አለመቻልህ/ሽ	0	1	2	3	4	5
14	በትምህርት ቤት ስራ ምክንያት ከወላጆችህ/ሽ ጋር መግባባት/ መስማማት አለመቻልህ/ሽ	0	1	2	3	4	5
15	ከትምህርት ቤት ስራ ጋር በተገናኘ ወላጆችህ/ሽ/ ከአንተ/ቺ ብዙ መጠበቃቸው	0	1	2	3	4	5
16	ከመምህራን ጋር አለመግባባት	0	1	2	3	4	5

ክፍል ሦስት፡- የጠንካራና ደካማ ጎኖች መጠይቅ

መመሪያ፡- ከዚህ በታች የተዘረዘሩት ባህሪያት አንተን/ቺን ይመለከታሉ፡፡እያንዳንዱን መዘርዝር በጥሞና ካነበብህ/ሽ በኋላ ባለፉት ስድስት ወራት ወይም በዘንድሮው የትምህርት ዘመን ያሳየኸውን/ያሳየሽውን ባህሪይ በተመለከተ ምን ያህል እውነት እነደሆነ ከቀረቡት ሦስት አማራጮች መካከል ትክክለኛውን መልስ በመምረጥና ለመረጥከው/ሽው መልስ የተሰጠውን ቁጥር በማክበብ መልስ/ሽ፡፡ የአማራጭ ቁጥሮች ትርጉም እንደሚከተለው ነው፡-

0=እውነት አይደለም
1=በከፊል እውነት ነው
2=በእርግጥ እውነት ነው

ተ.ቁ		እውነት አይደለም 0	በከፊል እውነት ነው 1	በእርግጥ አውነት ነው 2
1	ስለ ሌሎች ሰዎች ስሜት እጠነቀቃለሁ፡፡	0	1	2
2	እንቀዠቀዣለሁ፤ እረፍት የለሽ ነኝ፤ አንድ ቦታ አርፌ መቆየት አልችልም፡፡	0	1	2
3	ብዙ ጊዜ ራሴን፤ ሆዴን አመመኝ ወይም አቅለሸለሸኝ እላለሁ፡፡	0	1	2
4	ለሌሎች ልጆች ያለኝን ነገር በቀላሉ አጋራለሁ(የሚበላ፤ መጫወቻ፤ እርሳስ፤ ወዘተ)፡፡	0	1	2
5	ብዙ ጊዜ በጣም ተናዳጅና ግልፍተኛ ነኝ(እንፈራፈራለሁ፤ እማታለሁ፤እጮሃለሁ፤ እወራወራለሁ)፡፡	0	1	2
6	ከሌሎች ልጆች ጋር አልደባለቅም፤ገለል እላለሁ፤ ለብቻዬ የመጫወት አዝማሚያ አለኝ፡፡	0	1	2
7	በጥቅሉ ታዛዥ ነኝ፤ ብዙ ጊዜ አዋቂዎች የጠየቁኝን አደርጋለሁ፡፡	0	1	2
8	ስለ ብዙ ነገር እሰጋለሁ፤ ብዙ ጊዜ ትንሽ ትልቁ ያሳስበኛል፡፡	0	1	2
9	ሰው ተጎድቶ፤ ከፍቶት ወይም አሞት ካየሁ እረዳለሁ፡፡	0	1	2
10	ያለማቋረጥ በተቀመጥሁበት እቁነጠነጣለሁ፤ እንቆራጠጣለሁ፤ እጠማዘዛለሁ፡፡	0	1	2
11	ቢያንስ አንድ ጥሩ ጓደኛ አለኝ፡፡	0	1	2
12	ብዙ ጊዜ ከሌሎች ልጆች ጋር እደባደባለሁ ወይም ጉልበተኛነቴን አሳያለሁ፡፡	0	1	2
13	ብዙ ጊዜ ደስተኛ አይደለሁም፤ ይከፋኛል ወይም እንባዬ ይመጣል፡፡	0	1	2
14	በጥቅሉ በሌሎች ልጆች ተወዳጅነት አለኝ፡፡	0	1	2
15	በቀላሉ ሀሳቤ ይበታተናል፤ትኩረቴም አንድ ቦታ ላይ	0	1	2

	አይቆይም፡፡			
16	አዲስ ሁኔታዎች ሲገጥሙኝ እረበሻለሁ፤ወላጆቼ ላይ ጥብቅ እላለሁ፤ ወይም አልለቅም እላለሁ፤ በቀላሉ በራስ መተማመን አጣለሁ፡፡	0	1	2
17	ከእኔ ለሚያንሱ ልጆች ደግ ነኝ፡፡	0	1	2
18	ብዙ ጊዜ እዋሻለሁ ወይም አጭበረብራለሁ፡፡	0	1	2
19	ሌሎች ልጆች ይተናኮሉኛል፤ ያበሽቁኛል ወይም ጉልበተኝነታቸውን ያሳዩኛል፡፡	0	1	2
20	ብዙ ጊዜ ሌሎችን ለመርዳት ፈቃደኛ ነኝ(ወላጆች፤ መምህራን፤ሌሎች ልጆች)፡፡	0	1	2
21	አንድ ነገር ከማድረጌ በፊት ስለነገሩ በቅድሚያ አስተውላለሁ፡፡	0	1	2
22	ከቤት፣ ከትምህርት ቤት ወይም ከሌላ ቦታ እሰርቃለሁ፡፡	0	1	2
23	ከሌሎች ልጆች ይልቅ ከአዋቂዎች ጋር በቀላሉ እግባባለሁ	0	1	2
24	ብዙ ነገሮች እፈራለሁ፤ በቀላሉ ድንግጥ እላለሁ፡፡	0	1	2
25	የጀመርኳቸውን ነገሮች እስከመጨረሻቸው ድረስ አከናውናለሁ፤ጥሩ የትኩረት ስፋት አለኝ፡፡	0	1	2

ክፍል አራት፡ ዓወንታዊ የሥነ-ልቦና ኃይል መጠይቅ

መመሪያ፡- የሚከተሉት ዓረፍተ-ነገሮች አንተ/ቺን በአሁኑ ሰዓት ስለራስህ/ሽ ያለህ/ሽን ሃሳብ ይገልጻሉ፡፡ለእያንዳንዱ ዓረፍተ-ነገር ያለህን/ሽን የስምምነት/የአለመስማማት ደረጃ ቀጥሎ በተቀመጠው መለኪያ በመጠቀም አንተን/ቺን በትክክል የሚገልፀውን አማራጭ የሚወክለውን ቁጥር በማክበብ መልስ/ሺ፡፡

በጣም አልስማማም	አልስማማም	በከፊል አልስማማም	በከፊል እስማማለሁ	እስማማለሁ	በጣም እስማማለሁ
1	2	3	4	5	6

ተ.ቁ							
1.	ከትምህርቱ ጋር የተገናኘ የረጅም ጊዜ ችግር በጥልቀት መርምሬ መፍትሄ እንደማገኝ እተማመናለሁ፡፡	1	2	3	4	5	6
2.	ከአስተዳደርና መምህራን ጋር በሚደረጉ ስብሰባዎች መማሪያ ክፍሌን/የክፍሌ ተማሪዎችን እንደምወክል እተማመናለሁ፡፡	1	2	3	4	5	6
3.	የትምህርት ቤቱን አሰራር ጉዳይ በተመለከተ በሚደረግ ውይይት የራሴን አስተዋፅየ እደማበረክት እተማመናለሁ፡፡	1	2	3	4	5	6
4.	ለትምህርት ቤቴ ግብ/ዓላማ ዝግጅት የራሴን እገዛ እንደማደርግ እተማመናለሁ፡፡	1	2	3	4	5	6
5.	በችግሮች ጉዳይ ለመወያየት ከትምህርትቤቱ ውጪ ካሉ ሰዎች ጋር ለመገናኘት እተማመናለሁ፡፡	1	2	3	4	5	6
6.	በአንድ ላይ ለተሰበሰቡ ተማሪዎች መረጃ ለማስተላለፍ በራሴ እተማመናለሁ፡፡	1	2	3	4	5	6
7.	በትምህርት ስራዎች መጨናቀቅ ቢገጥመኝ፣ ከችግሩ የምወጣበት ብዙ መንገዶች ማሰብ እችላለሁ፡፡	1	2	3	4	5	6
8.	በአሁኑ ወቅት የትምህርትቤት ግቤን ለማሳካት በትክክለኛው ጎዳና እየተጓዝኩ እገኛለሁ፡፡	1	2	3	4	5	6
9.	ማንኛውም ችግር የሚፈታበት ብዙ መንገድ አለ፡፡	1	2	3	4	5	6
10.	በአሁኑ ሰዓት በትምህርቴ በአመዛኙ ስኬታማ ነኝ ብዩ አስባለሁ፡፡	1	2	3	4	5	6
11.	የአሁኑን የትምህርት ግቤን ለማሳካት ብዙ ዘዴዎችን ማሰብ	1	2	3	4	5	6

	እችላለሁ፡፡						
12.	በዚህ ሰዓት ያለምኳቸውን የትምህርት ግቦች እያሳካሁ ነው፡፡	1	2	3	4	5	6
13.	በትምህርቴ መሰናክል ሲገጥመኝ፣ ማገገም ይከብደኛል፣ ከገጠመኝ ችግርም መላቀቅ ያዳግተኛል፡፡	1	2	3	4	5	6
14.	በትምህርት ቤት የሚገጥሙኝን ችግሮች በአንድም ይሁን በሌላ መንገድ ብዙ ጊዜ እቆጣጠራቸዋለሁ፡፡	1	2	3	4	5	6
15.	እውነት ለመናገር የትምህርት ስራዬን ግዴታ ብቻዬን መወጣት እችላለሁ፡፡	1	2	3	4	5	6
16.	ትምህርትቤት ውስጥ የሚያጋጥሙኝን አስጨናቂ ነገሮች በእርጋታ አጤናቸዋለሁ፡፡	1	2	3	4	5	6
17.	ከዚህ በፊትም ችግር አጋጥሞኝ ስለሚያውቅ በትምህርትቤት ውስጥ አስቸጋሪ ወቅቶችን ተቋቁሜ ማለፍ እችላለሁ፡፡	1	2	3	4	5	6
18.	ከትምህርቴ ጋር የተያያዙ ብዙ ነገሮችን በአንዴ መቆጣጠር እችላለሁ፡፡	1	2	3	4	5	6
19.	ትምህርቴን በሚመለከቱ ነገሮች እርግጠኛ በማልሆንበት ወቅት፤ብዙ ጊዜ መልካም ነገሮችን እጠብቃለሁ፡፡	1	2	3	4	5	6
20.	ትምህርቴን የሚስተጓጉል አንዳች ነገር ቢከሰት፤የራሱ ጉዳይ ብየ እተወዋለሁ፡፡	1	2	3	4	5	6
21.	ትምህርቴን በተመለከተ ሁል ጊዜ የማየው በጎ ነገሩን ነው፡፡	1	2	3	4	5	6
22.	ትምህርቴን በተመለከተ ወደፊት መልካም ነገር እንደሚገጥመኝ እጠብቃለሁ፡፡	1	2	3	4	5	6
23.	በትምህርቴ ነገሮች በምፈልገው መንገድ በፍፁም አይሄዱም፡፡	1	2	3	4	5	6
24.	በትምህርቴ መጥፎ ሁኔታ ሲገጥመኝ ‘ይሁን ለበጎ ነው’ ብዬ አስባለሁ፡፡	1	2	3	4	5	6

Appendix B: Tables

Appendix B1: Curve Estimation of School-related Stress and Academic Achievement

Dependent Variable: Academic Achievement

	Model Summary					Parameter Estimates			
Equation	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	.053	13.004	1	231	.000	68.206	-3.282		
Logarithmic	.048	11.734	1	231	.001	66.063	-6.852		
Inverse	.041	9.987	1	231	.002	54.493	12.922		
Quadratic	.057	6.926	2	230	.001	61.068	3.358	-1.427	
Cubic	.058	4.686	3	229	.003	47.379	22.690	-10.027	1.217
Compound	.059	14.445	1	231	.000	68.110	.946		
Power	.053	12.907	1	231	.000	65.678	-.114		
S	.045	10.879	1	231	.001	3.992	.215		
Growth	.059	14.445	1	231	.000	4.221	-.055		
Exponential	.059	14.445	1	231	.000	68.110	-.055		
Logistic	.059	14.445	1	231	.000	.015	1.057		

The independent variable: is School-Related Stress.

Appendix B2: Curve Estimation of Psychological Capital and Academic Achievement

Model Summary and Parameter Estimates

Dependent Variable: Academic Achievement

	Model Summary					Parameter Estimates			
Equation	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	.201	58.216	1	231	.000	44.116	4.418		
Logarithmic	.198	56.953	1	231	.000	40.939	15.315		
Inverse	.189	53.910	1	231	.000	74.860	-49.712		
Quadratic	.201	28.986	2	230	.000	44.878	3.972	.061	
Cubic	.201	28.986	2	230	.000	44.878	3.972	.061	.000
Compound	.219	64.813	1	231	.000	45.559	1.076		
Power	.217	63.880	1	231	.000	43.168	.256		
S	.209	60.898	1	231	.000	4.333	-.833		
Growth	.219	64.813	1	231	.000	3.819	.074		
Exponential	.219	64.813	1	231	.000	45.559	.074		
Logistic	.219	64.813	1	231	.000	.022	.929		

The independent variable is Psychological Capital

Appendix B3: Curve Estimation of School-related Stress and Behavior Problems

Dependent Variable: Behavior Problems

	Model Summary					Parameter Estimates			
Equation	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	.049	11.814	1	231	.001	.370	.108		
Logarithmic	.046	11.036	1	231	.001	.437	.229		
Inverse	.041	9.964	1	231	.002	.829	-.443		
Quadratic	.050	6.079	2	230	.003	.533	-.044	.033	
Cubic	.051	4.071	3	229	.008	.833	-.468	.221	-.027
Compound[a]	.	.	.	.	.	.	.		
Power[a]	.	.	.	.	.	.	.		
S[a]	.	.	.	.	.	.	.		
Growth[a]	.	.	.	.	.	.	.		
Exponential[a]	.	.	.	.	.	.	.		
Logistic[a]	.	.	.	.	.	.	.		

The independent variable: School-Related Stress

Appendix B4: Curve Estimation of Psychological Capital and Behavior Problems

Dependent Variable: Behavior Problems

	Model Summary					Parameter Estimates			
Equation	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	.049	11.814	1	231	.001	.370	.108		
Logarithmic	.046	11.036	1	231	.001	.437	.229		
Inverse	.041	9.964	1	231	.002	.829	-.443		
Quadratic	.050	6.079	2	230	.003	.533	-.044	.033	
Cubic	.051	4.071	3	229	.008	.833	-.468	.221	-.027
Compound[a]	.	.	.	.	.	.	.		
Power[a]	.	.	.	.	.	.	.		
S[a]	.	.	.	.	.	.	.		
Growth[a]	.	.	.	.	.	.	.		
Exponential[a]	.	.	.	.	.	.	.		
Logistic[a]	.	.	.	.	.	.	.		

The independent variable : Psychological Capital

Appendix B5: Collinearity Diagnostic Results School-related Stress and Academic Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	68.206	2.233		30.540	.000		
	School-Related stress	-3.282	.910	-.231	-3.606	.000	1.000	1.000

a. Dependent Variable: Academic Achievement

Appendix B6: Collinearity Diagnostic Results Psychological Capital and Academic Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	44.116	2.204		20.013	.000		
	Psychological Capital	4.418	.579	.449	7.630	.000	1.000	1.000

a. Dependent Variable: Academic Achievement

Appendix B7 Collinearity Diagnostic Results School-related Stress and Behavior Problems

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.370	.077		4.813	.000		
	School-Related stress	.108	.031	.221	3.437	.001	1.000	1.000

a. Dependent Variable: Behavior Problems

Appendix B8: Collinearity Diagnostic Results between Psychological Capital and Behavior problems

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.094	.078		13.941	.000		
	Psychological Capital	-.127	.021	-.376	-6.162	.000	1.000	1.000

a. Dependent Variable: Behavior Problems

Appendix B9

Demographic Characteristics of Students with and without Health Impairments

	SWHIs	SWOHIs
Demographic Profile	M (SD)	M (SD)
Age	15.5 (2.32)	15.3(2.27)
	n (%)	
Gender		
Male	110 (47.2)	120(48)
Female	123 (52.8)	130(52)
Grade		
5	31 (13.3)	27(10.8)
6	27 (11.6)	29(11.6)
7	32 (13.7)	28(12.2)
8	24 (10.3)	33(13.2)
9	33 (14.2)	31(12.4)
10	25(10.7)	34(13.6
11	32(13.7)	33(13.2)
12	29(12.4)	35(14)
Religion		
Orthodox	149(63.9)	156(62.4)
Muslim	45(19.3)	49(19.6)
Protestant	36(15.5)	41(16.4)
Others	3(1.3)	4(1.6)
Family Income		
Low	73(31.3)	65(26)
Medium	134(57.5)	151(60.4)
High	26(11.2)	34(13.6)
Type of health impairment		
Diabetes mellitus	115(49.4)	-
Heart Disease	118(50.6)	-
Perceived severity of health		

impairment		
Mild	76(32.6)	-
Moderate	113(48.5)	-
Severe	44(18.9)	-

Note: M=mean; SD=standard deviation; n=number; and %=percentage

Appendix B10: Standardized Loading of PSRS Measurement Model

Latent Factors	Indicators	Standrdized loading	T value	P
Peer-related stressor				
	PRS1	0.79		
	PRS2	0.79	12.65	***
	PRS3	0.78	12.50	***
	PRS4	0.77	12.36	***
	PRS5	0.77	12.25	***
School-achievement related stressor				
	SARS1	0.81		
	SARS2	0.79	13.16	***
	SARS3	0.73	11.88	***
	SARS4	0.78	12.83	***
	SARS5	0.79	12.03	***
School work pressure				
	SWP1	0.75		
	SWP2	0.72	9.39	***
	SWP3	0.73	9.45	***
Parent and/or teacher related stressors				
	PTRS1	0.72		
	PTRS2	0.73	9.32	***
	PTRS3	0.75	9.23	***

Appendix B11: Convergent and Discriminant Validity of the Perceived School-Related Stress Measurement Model

	CRs	PRS	SARS	SWP	PTRS
PRS	0.885	**0.607**			
SARS	0.887	0.354	**0.610**		
SWP	0.779	0.312	0.231	**0.540**	
PTRS	0.779	0.194	0.224	0.311	**0.540**

Note: Diagonal are AVE values and others are squared correlations; CRs=construct reliabilities, PRS=peer-related stressor, SARS=school-achievement-related stressor, SWP= school work pressure, PTRS=parent and/or teacher relationship stressor.

Appendix B12: Standardized Loading of Psychological capital Measurement Model

Latent Factors	Indicators	Standardized loading	T value	P
Self-efficacy				
	SE1	.754		
	SE2	.749	11.171	***
	SE3	.737	10.975	***
	SE4	.733	10.916	***
	SE5	.709	10.534	***
	SE6	.691	10.259	***
Hope				
	HO1	.745		
	HO2	.739	10.938	***
	HO3	.730	10.807	***
	HO4	.746	11.044	***
	HO5	.710	10.500	***
	HO6	.745	10.926	***
Resilience				

	RE1	.741		
	RE2	.713	10.359	***
	RE3	.718	10.431	***
	RE4	.717	10.412	
	RE5	.721	10.470	
	RE6	.711	10.320	***
Optimism				
	OP1	.748		
	OP2	.747	10.886	***
	OP3	.638	9.271	***
	OP4	.677	9.854	***
	OP5	.691	10.052	***
	OP6	.755	11.004	***

Appendix B13: Convergent and Discriminant Validity of the Psychological Capital Measurement Model

	CR	SE	HO	RE	OP
SE	0.872	**0.532**			
HO	0.876	0.327	**0.540**		
RE	0.866	0.255	0.293	**0.519**	
OP	0.859	0.207	0.237	0.201	**0.505**

Note: Diagonal are AVE values and others are squared correlations; CRs=construct reliabilities; SE= Self-efficacy, HO=Hope, RE=Resilience, OP=Optimism

Appendix B14: Standardized Loading of Total Difficulties Scale Measurement Model

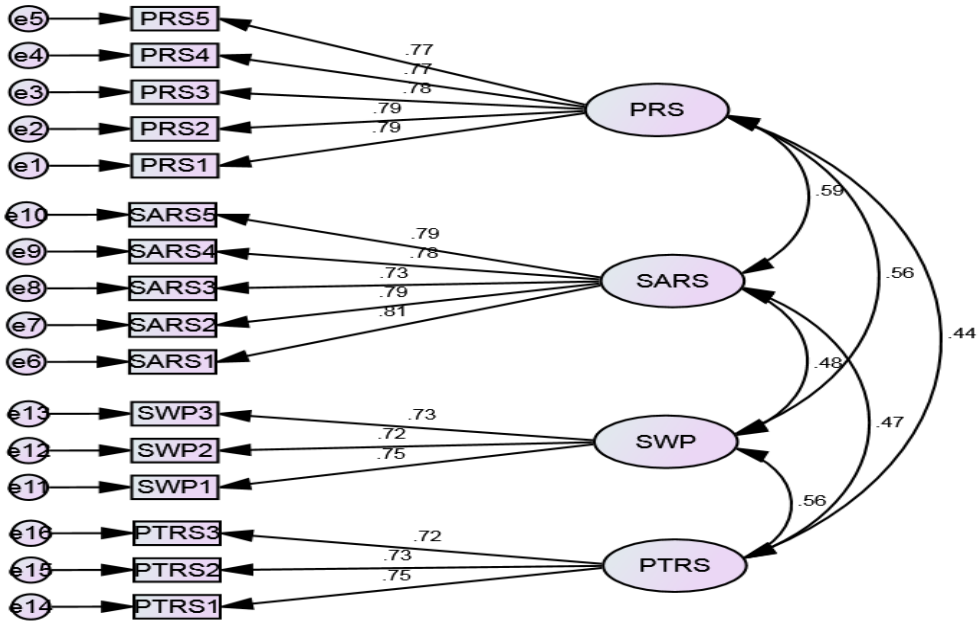
Latent Factors	Indicators	Standardized loading	T value	P
Emotional Symptoms				
	Q03	.637		
	Q08	.642	7.395	***
	Q13	.576	6.846	***
	Q16	.678	7.649	***
	Q24	.531	6.421	***
Conduct Problems				
	Q05	.630		
	Q07	.661	7.252	***
	Q12	.533	6.273	***
	Q18	.561	6.517	***
	Q22	.527	6.217	***
Hyperactivity				
	Q02	.685		
	Q10	.510	6.360	***
	Q15	.626	7.486	***
	Q21	.597	7.231	
	Q25	.581	7.074	
Peer Problems				
	Q06	.627		
	Q11	.563	6.584	***
	Q14	.671	7.401	***
	Q19	.507	6.075	***
	Q23	.619	7.044	***

Appendix B15: Convergent and Discriminant Validity of the Total Difficulties Score Measurement Model

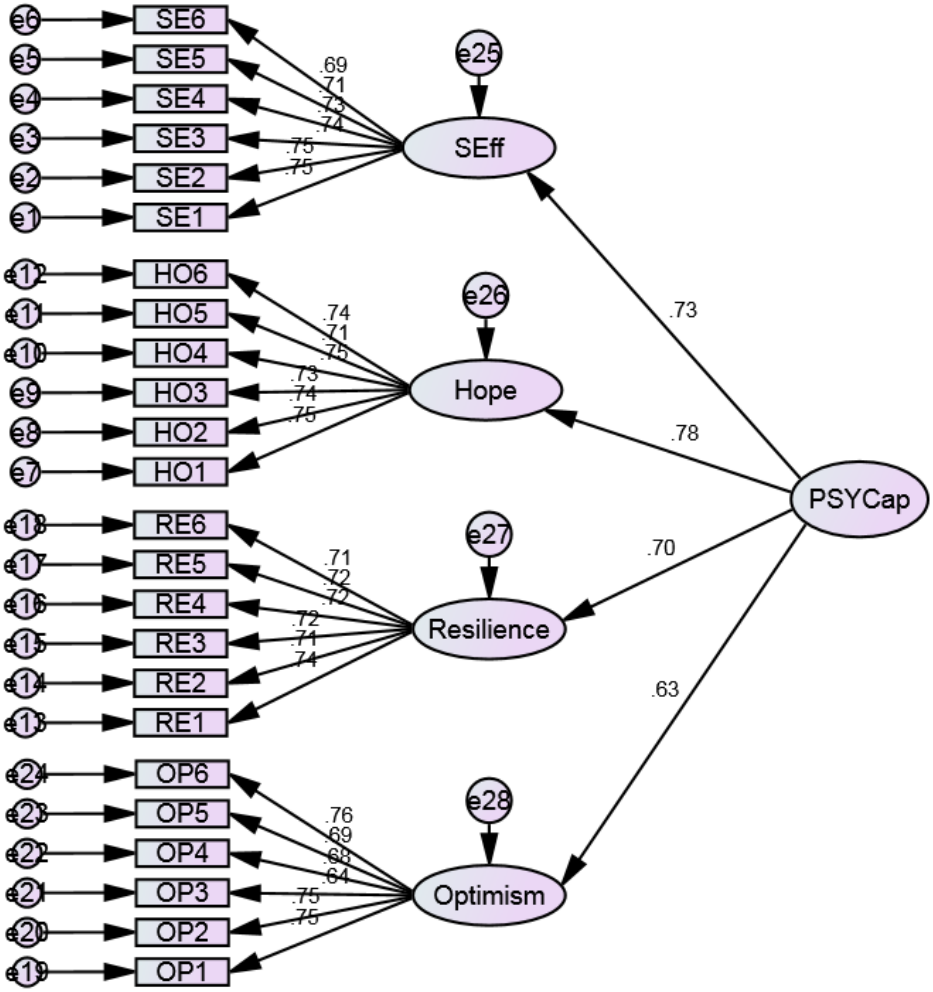
	CRs	ES	CPs	Hy	PPs
Emotional Symptoms(ES)	0.751	**0.378**			
Conduct Problems(CP)	0.720	0.248	**0.342**		
Hyperactivity(Hy)	0.738	0.181	0.267	**0.363**	
Peer Problems(PP)	0.736	0.231	0.239	0.226	**0.360**

Note: Diagonal are AVE values and others are squared correlations; CRs= construct reliabilities; ES= Emotional Symptoms, CP=Conduct Problems, Hy= Hyperactivity, PP= Peer Problems

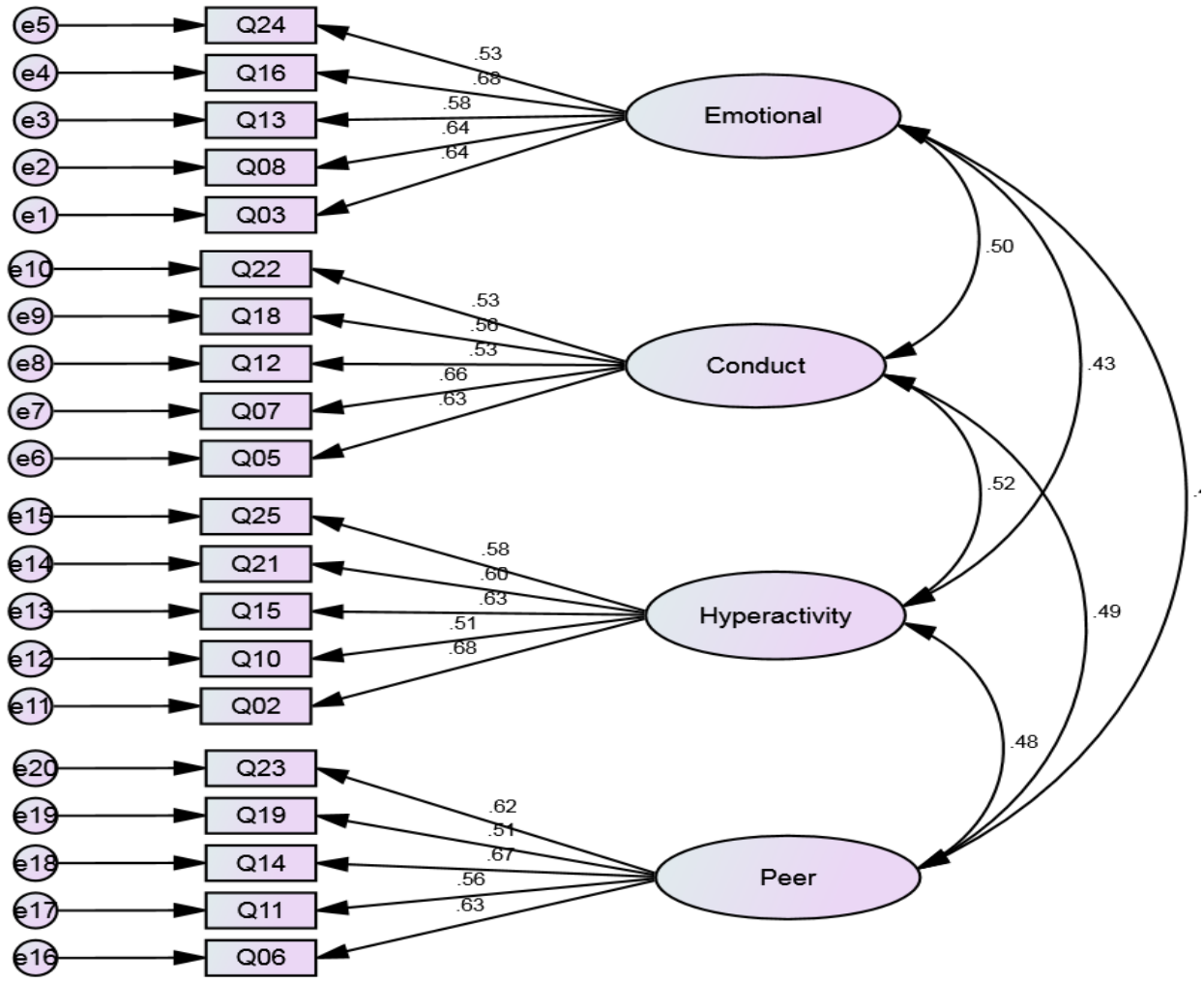
Appendix C: Figures



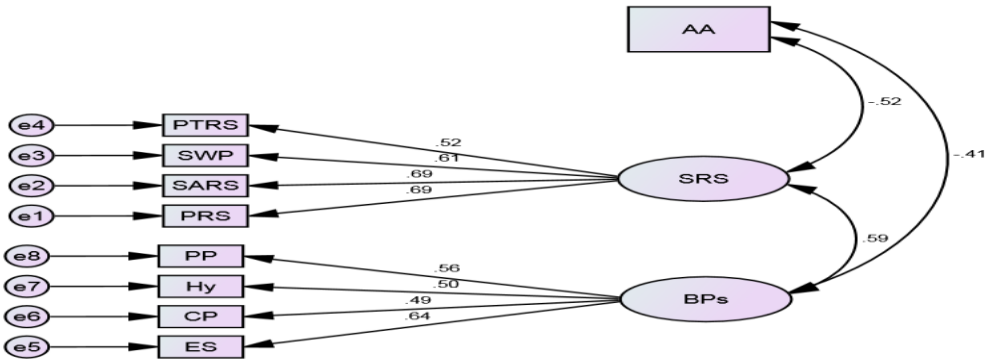
Appendix C1: Measurement Model of Perceived School-related Stress Scale



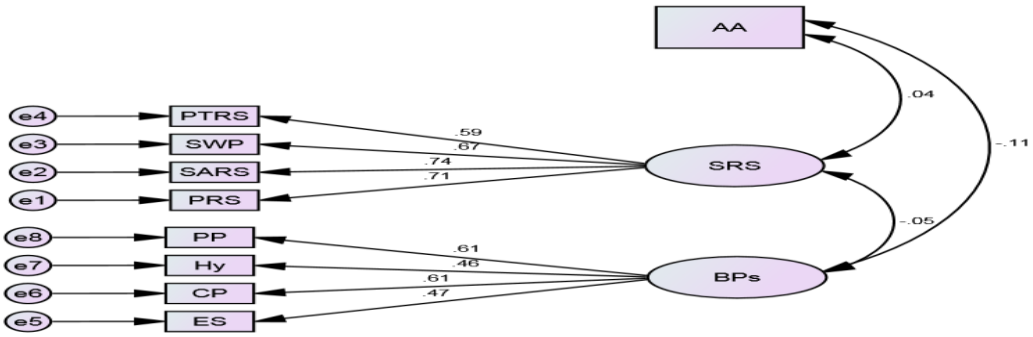
Appendix C2: Measurement Model of Psychological Capital Questionnaire



Appendix C3: Measurement Model of Total Difficulties Scale



Appendix C4: Measurement Model (low Levels of Psychological Capital)



Appendix C5: Measurement Model (High Level of Psychological Capital