Summary of the dissertation

Education: The Missing Link of Life Coherence

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Introduction

Mental health is a core issue in health in general due to the fact that there is no true health or social development without mental health. Contributing to premature death and human rights violation, mental health problems represent a significant global and national economic loss. Anxiety and depression disorders cost US$ 1 trillion per year to the global economy. Because mental health continues to be a neglected part of global work to improve health, the World Health Organization (WHO, 2019) proposed the Special Initiative for Mental Health (2019-2023) in order to help people, achieve a high standard of mental health and well-being.

According to the statistics of WHO (2019), more than 80% of individuals diagnosed with mental health problems are without affordable care despite mental health accounting for 1 in 5 years lived with disability. Suicide is highly affecting young individuals (approximately 800 000 deaths a year) in low and middle-income countries. Although evidence-based care is available, the coverage of treatment is low, and the provision of services is lacking. Nowadays, the scientific community studies the impact of mental health problems aggravated by the recent pandemic restrictions (Jakovljevic, Bjedov, Jaksic, et al., 2020), Russia-Ukraine war and its global impact (Riad, Drobov, Krobot, et al., 2022) in addition to the economic consequences (Astrov, Ghodsi, Grieveson, et al., 2022). Overloaded by excessive demands, many health systems are at the limit of capacity and not properly addressing the burden of mental disorders, therefore the gap between the need for treatment and its provision is wide all over the world.

On the one hand, approximately 76% to 85% in low and middle-income countries, and 35% to 50% of individuals with mental disorders in high-income countries do not receive treatment for their disorders (WHO, 2013). On the other hand, childhood and adolescence are crucial stages of development for investigating mental health making these periods of life very sensitive to the onset of psychological and psychiatric symptoms. A worldwide percent of 10-20% of children and adolescents experience mental disorders (WHO, 2013) with increasing rates in the European

Region (WHO, 2019) that if untreated will severely influence youth's development, educational attainments, and potential to accomplish their productive lives.

Young people with mental disorders face major challenges, stigma, and isolation, as well as lack of access to health care and education facilities, in violation of their fundamental human rights (WHO, 2013). Barican et al., (2022) found that the overall prevalence of mental disorder in childhood was 12.7%. The difficulty of receiving adequate treatment was aggravated by COVID, economic distress, migration and war in Europe. Data from the above authors showed that only 44.2% of children receive any services, besides that given the emerging increases in childhood mental health problems since the onset of the COVID-19, the urgency of treating these issues is priority.

One of the most frequent signs of mental health problems in children and adolescents is low academic achievement, which is a significant problem (Dalsgaard, McGrath, Østergaard et al., 2020), however, there are not enough studies focusing on the relationship between psychological/behavioral symptoms and academic performance. Mental health problems such as emotional disorders, conduct and behavioral difficulties, hyperactivity/inattention cause significant difficulties in functioning and disrupt social and family relationships. These symptoms negatively affect self-esteem, social life, and academic achievement resulting in difficulties in learning and problematic adjustment at school.

Knowing the characteristics of the salutogenic approach and being concerned with this global context, the author decided to contribute to the scientific knowledge community to shed light and better understand these issues through the present research. According to the salutogenic model, prevention programs should propose protective factors to reach individuals, communities, and the systems in which they live in order to promote a better quality of life. Proposed as a psychological factor that predicts good health and proper adjustment (Ristkari, Sourander, Ronning, et al., 2006), the construct of Sense of Coherence (SOC), the main concept of salutogenesis, has been widely used in literature as a wellbeing indicator that has long-term positive influences on stress regarding school work. The general objective of the present research is to investigate whether salutogenic approach through sense of coherence is associated with self-esteem and academic achievement in children and adolescents.

Specific objectives were the following:

a) Validate the Sense of Coherence Scale (SOCS) in a sample of Hungarian youth

b) Analyze the relationship between sense of coherence and psychological/behavioral symptoms

c) Compare sense of coherence, self-esteem, negative life events (NLE) and socio-demographic characteristics between children and adolescents with psychological/behavioral symptoms to average population.

d) Analyze the relationship of sense of coherence, self-esteem and psychological/behavioral symptoms to academic achievement

Furthermore, this research specifically intends to address some gaps in the literature related to this field of study:

- SOC scale has not been validated in Hungarian child and adolescent population previously
- Scarce validity studies of SOCS-29 and SOCS-13 for assessing children and adolescents in general and especially with psychological/behavioral symptoms
- Conflicting results about the factorial structure of the SOC scales in children
- No studies published on the SOC of Hungarian children or adolescents previously
- The relationship of SOC, self-esteem and academic achievement has not been studied
- Studies about the relationship of SOC, self-esteem and psychological symptoms of adolescents are not conclusive
- Scarce research concerning the relationship between SOC and psychological/behavioral symptoms in child and adolescent psychiatric populations
- Lack of studies about the age and sex-related differences in SOC during childhood

Literature Review

The salutogenic approach originated as a stress and coping model (Antonovsky, 1979). Sense of coherence is the term that Antonovsky introduced as a way to manage and adapt to a life of chaos (Mittelmark & Bauer, 2017). In his efforts to study health instead of disease, Antonovsky coined his new word *salutogenesis* from the Greek *genesis* (origins) and the Latin *salus/saluto* (health) and asked the question: what are the origins of health?. After many years of research and study he concluded that "The origins of health are found in the sense of coherence" (Antonovsky, 1979, preface vii). As a paradigm, Antonovsky defined salutogenesis as the study

of the strength that individuals exhibit in order to manage the tension and stress in their lives and not succumb to illness. Human beings must constantly adapt to numerous and diverse factors in order to maintain a relatively steady state. Salutogenesis starts by considering health and looks prospectively at how to create, enhance, and improve physical, mental and social well-being (Antonovsky, 1985) and QoL.

Sense of coherence is interpreted in various ways by different researchers: an internal disposition of the personality (Antonovsky, 1985; Mittelmark & Bauer, 2017); the cornerstone of an intricate human information processing system designed to cope with everyday stress to resolve conflicts (Kouvonen, Väänänen, Vahtera, et al., 2010); a personal trend to interpret the environment as manageable, comprehensive and meaningful (Eriksson & Lindström, 2006). The most relevant aspect of all of these definitions is that health is clearly influenced by the way an individual understands and deals with life (Kouvonen, Väänänen, Vahtera, et al., 2010). SOC integrates the subcomponents of meaningfulness, comprehensibility, and manageability of a situation or disease and in general is considered an adaptive dispositional orientation within the personality that enables individuals to handle adverse experiences (Antonovsky 1979, Eriksson & Lindstrom 2006).

Antonovsky used the concept of General Resistance Resources (GRR) to refer to salutary factors effective in combating a wide variety of stressors (Antonovsky, 1987, p. Xii). One common property of these is to create experiences of life characterized by consistency, participation and balance between underload and overload helping people to perceive the world as cognitively, instrumentally and emotionally making sense (Antonovsky, 1996, p. 15). Social support is one of the most representatives of GRR, besides ego-strength, self-esteem, wealth and so on. During the lifetime, when properly experienced, these resources originate and reinforce SOC. Another relevant personal factor for the development of SOC is self-esteem (Lindström & Eriksson, 2006). Self-esteem is defined as the individual's self-worth or attitude toward oneself (Rosenberg, 1989). Adolescent mental health problems are generally associated with low self-esteem (Guillon, Crocq & Bailey, 2003).

SOC in Youth (Children and Adolescents)

Emotional health for young children is strongly influenced by their environment, the nature of their relationships, the sense of security, and emotional support that they find in their families

(Braun-Lewensohn, Idan, Lindström, et al., 2022). A balanced family system is characterized by love between members, respect and proper communication. Higher levels of SOC are reported by children in families characterized by emotional bonding compared to children in families that don't show emotional bonding toward members (Idan, Eriksson and Al-Yagon, 2017).

Adolescence is a period of development between childhood and adulthood characterized by new demands on the individual. Independence from the family becomes crucial as much as relationships with peers gain relevance as a source of socialization (Romeo, 2013; Spear, 2013). The understanding of adolescence differs considerably among individuals, over time and across cultures. Adolescence definition has long been a very controversial concept in science probably because it encompasses biological transformation and major social and cultural role changes. In almost all populations, precocious puberty has accelerated the onset of adolescence. At the same time, the delay in role transitions (e.g., completion of education, marriage and adulthood) changed popular perceptions of when adulthood begins. An expanded and inclusive definition of adolescence is essential for structuring the development of laws and social policies (Sawyer, Azzopardi, Wickremarathne et al., 2018).

Mental health problems in youth are increasing globally (Bor et al., 2014) appearing as mental and somatic symptoms such as headaches, sleep disorders, anxiety and learning difficulties among others. Therefore, interventions to promote mental health should focus on children, adolescents and families (Volanen, 2011). Research in youth's mental health is also justified for bringing immediate benefits for a balanced future adulthood (Patton et al., 2016).

Salutogenesis Applied to Education
There is a lack of comprehensive information regarding the relationship of salutogenesis, sense of coherence, and education. The literature refers to education or health separately covering a broad extent of subjects such as academic performance (Colomer-Pérez, Paredes-Carbonell, Sarabia-Cobo, et al., 2019), coping (Colomer-Pérez, Chover-Sierra, Gea-Caballero, et al., 2020), health assets (Colomer-Pérez et al., 2020), school performance (Oliva, Cunha, Silva, et al., 2019), psychological strength (Van der Westhuizen, Beer & Bekwa, 2011), social support (Warne, Snyder & Gådin, 2017) to cite some. However, they explore specific aspects of the students, the teachers, or the systems individually lacking the comprehension of the whole picture.

After a literature review on education processes, six models were found providing specific examples of the inclusion of the salutogenic theory and health promotion in education which will be described below. Inspired by the idea of Ombudsman - Mayer and Boness (2011) proposed a didactic model to help the formal educational system to enhance integration, autonomy, quality of teaching, the health of students and improve leadership skills; Garista, Pocetta and Lindström's (2019) model proposed the integration of the invisible features of communication that improve the teaching-learning process and the ability to assimilate previous life experiences in order to enhance SOC and psychological health; The Collegial model by Eriksson (2019), seek to handle stress during research supervision through a sustainable working life style; the model of Lindström and Eriksson (2011) recommends health education lifelong directed to the individual transformation toward a healthy learning lifestyle; Garcia da Costa's (2017) model based on Waldorf pedagogy compared the subject's cognitive, affective, and volitional forces to the three sub-compounds of SOC, working together for the integration of human experience proposing education as a remedy and the teacher as a healer. The pedagogic frailty model by Kinchin (2019) highlighted the relevance of reflection and self-awareness about the teaching process supported by the salutogenic framework which result in resilience and consciousness among professors and managers of universities.

Methods

The research was organized as quantitative and qualitative studies. A validation of the Sense of coherence scale was performed with the purpose to examine whether SOCS is a valid and reliable instrument to be used with Hungarian children and adolescents. The quantitative empirical study analyzed different aspects and relationships of the association among sense of coherence, self-esteem, psychological symptoms, quality of life, social support, negative life events and socio-demographic characteristics. The qualitative studies were operationalized through recorded interviews with the aim of analyzing the participants' representations of their views of the external world, their lives and their self-concepts.

A descriptive, comparative and quantitative method of research and associational cross-sectional design was used. There were 125 children and adolescents in the group under psychiatric care and 269 youth in the control group. The final sample included those who answered all of the questionnaires, N= 323 subjects. Their age ranged from 10 to 18 years; mean age was 14.3 (SD

2.1) years. There were 172 children and 151 adolescents; the cut-off between the two age groups was established by elementary versus high school attendance (ages 14-15 years). The psychiatric sample completed the questionnaires in paper-pencil format, the average sample answered questions on-line due to COVID 19 restrictions. The scales and questionnaires were the same for the psychiatric and average samples and needed approximately 20 minutes to be completed for the parents and youth.

For the psychiatric group, data was collected from patients of the Child and Adolescent Psychiatry Unit of the Department of Pediatrics and Pediatric Health Care Center at the University of Szeged, Hungary. Youth and parents who agreed to participate were asked to sign the consent form and received the set of questionnaires to be answered. Data collection for the psychiatric sample was done from April 2019 to March 2021. Criteria for inclusion in the psychiatric group was the age of 10 to 18 years, male or female, and attending the in- or outpatient department of the Child Psychiatry Unit of Szeged University. Criteria for inclusion in the average sample was studying in 5th grade or above, male or female, having normal intelligence and being enrolled in one of the schools (Karolina Elementary and High School, József Kőrösy Vocational Training Center, and Hansági Ferenc Vocational School) in Szeged that agreed to participate. Exclusion Criteria for both samples were studying below grade 5 at school, and students who didn't attend school regularly.

Research Instruments

Sense of Coherence Scale
Children in this study completed the 13-item version of SOCS; adolescents completed the 29-item version of SOCS. In order to compare adolescents to children, the 13 items of SOCS-13 were extracted from SOCS-29. The response alternatives were on a Likert scale from 1 to 7 points. Scores for SOCS-29 range between 29 and 203 points.

Rosenberg Self-Esteem Scale
Rosenberg Self-Esteem scale was developed for adolescents as a self-report scale to assess positive and negative evaluations of self (Rosenberg, 1989). It contains 10 items rated on a 4-point Likert scale. Respondents indicate their level of agreement on a scale ranging from 1

(strongly disagree) to 4 (strongly agree). The scores range from 0 to 30, higher scores show higher self-esteem.

Strengths and Difficulties Questionnaire (SDQ)

SDQ is a brief behavioral screening questionnaire used for children and adolescents 11 to 18 years old developed by Goodman (2001) which consists of 25 items. Total problem score is calculated by adding the four problem subscales which are emotional symptoms, behavioral problems, hyperactivity/inattention and peer relationship problems; it ranges from 0-40 with lower scores meaning less problems.

Inventory of Life Quality

The Inventory of Life Quality is a self-report scale which measures QoL in healthy, as well as in psychologically ill children and adolescents from 6 to 18 years old (Mattejat & Remschmidth, 1988). The instrument inquiries about satisfaction in 7 areas of life: school, family, social contact with peers, time spent alone, physical and mental health and health in general. Each item is rated on a 1-5 Likert scale, scores range from 0 to 28 points, higher numbers represent better QoL.

Multidimensional Scale of Perceived Social Support (MSPSS)

The Multidimensional Scale of Perceived Social Support (MSPSS) is a brief, self-report questionnaire containing 12 items rated on a 7-point Likert scale ranging from very strongly disagree to very strongly agree. It's used to measure how the individual perceives social support from significant others, family and friends.

Demographic data and negative life events

Demographic data and negative life events were asked from the parents. General information such as living conditions, family structure and subjective income, education and grades were asked about. A list of life events was presented and parents were asked to mark those which happened in the child's life. Events included parents' illness or death, unemployment, divorce, frequent arguments, financial problems, moving, birth of sibling, and stress involving the child, such as bullying, physical or sexual abuse, problems with the police, expel from school or foster care.

Results

SOCS-13 showed good reliability in both child and adolescent groups (Cronbach alfa: 0.872 and 0.886, respectively). Subscales for adolescents had higher internal consistencies (Comprehensibility 0.73, Manageability 0.773, Meaningfulness 0.802) but they were also in the acceptable range for children (Comprehensibility 0.719, Manageability 0.667, Meaningfulness 0.759). SOCS-29 was examined only in adolescents; it showed excellent reliability (Cronbach alpha 0.936). Internal consistency was also good for all three subscales of SOCS-29 (Comprehensibility 0.824; Manageability 0.855, Meaningfulness 0.889). A subsample of the original sample (N=78) completed the SOC scale a second time. Test-retest time was 154 (SD 53) days on average. Retest time was shorter for adolescents than for children (120 days vs 195 days). Pearson correlation coefficient for SOCS-13 was 0.692 for the whole subsample, 0.562 for children and 0.794 for adolescents. The 3-factor model seemed superior to the unidimensional one on both samples; however, the unidimensional model was acceptable on the child sample and it was close to the predefined acceptable range on adolescents.

SOCS-13 clearly and significantly differentiated between average children/adolescents and youth under psychiatric care. The mean score of SOC of the psychiatric sample was significantly lower than the average sample. Self-esteem, quality of life, and subjective social support were also significantly lower in the psychiatric sample. At the same time the scores of psychological/behavioral problems were significantly higher in the psychiatric sample signaling more mental health problems. Both internalization and externalization type psychological symptoms were associated with lower sense of coherence. The differences in the SOCS scores between the normal and problematic SDQ ranges were significant in all subscales.

SOCS total and all three subscale scores of children were significantly higher than that of the adolescents. The same difference could be seen in self-esteem and quality of life. Social support was also higher in the younger subgroup; however, it was not statistically significant. Psychological/behavioral symptoms were significantly less frequent in children. Males had higher scores of SOC in almost all of the age ranges except for the age of 16 years, however, significant difference was found only in the 14-year-old group.

Among mothers', fathers' education and negative life events only the latter predicted sense of coherence in a linear regression model. The regression model predicted 4.9% of the variance of

SOC (F (3,277) = 4.735, p <.003). Self-esteem was also predicted only by negative life events in a similar model explaining 7.1% of its variance (F (3,272) = 6.884, p<.000). Self-esteem, quality of life, social support and psychological/behavioral symptoms significantly predicted SOC (Table 1). The model explained 64.6% of the variance and was significant, F (4,303) = 137.97, p<.000.

Table 1: *Prediction of SOC in the whole sample*

Predictor	Beta	t	p
Constant	35.19	6.874	0.000
SDQ	-0.830	-6.264	0.000
RSE	0.652	5.372	0.000
ILK	0.503	2.574	0.011
MSPSS	0.142	2.635	0.009

Note: RSE: Rosenberg self-esteem scale, ILK: Quality of life scale, MSPSS: Multidimensional Perceived Support Scale, SDQ: Strengths and Difficulties Questionnaire

Grade average of the last school year was used as the variable representing academic achievement. Children in the average group had significantly better grade average than adolescents but no significant difference was seen within the psychiatric group between children and adolescents. The variables predicting grade average were also investigated. Age, gender, psychiatric treatment, SOC, RSE and SDQ were used as predictor variables. This model was significant (F (6,265) = 15.036, p=0.000), explained 25.4% of the variance. RSE did not significantly add to the model (Table 2).

Table 2: *Prediction of grade in the whole sample*

Predictor	Beta	t	p
Constant	6.429	13.307	0.000
Age	-0.061	-3.205	0.002
Gender	0.222	2.659	0.008
Psychiatric Treatment	-0.595	-6.662	0.000
SOCS	-0.009	-2.024	0.044
SDQ	-0.026	-2.490	0.013
RSE	-0.001	-0.159	0.874

Note: SOCS: Sense of coherence scale, SDQ: Strengths and Difficulties Questionnaire and RSE: Rosenberg self-esteem scale

Next, the regression was repeated separately in the psychiatric and the control group. SOC and age were the only significant predictors of grade average in the average sample (β=--0.010, p=0.027 and β=--0.085, p=0.000, respectively), the model explained 16.7% of the variance of grade average (F (5,158) = 6.339, p<0.000). The model in the psychiatric group was not significant.

The author examined the relationship of overall grade average and psychological and behavioral symptoms further including the 4 problematic subscales of the SDQ (emotional, hyperactive-inattention, behavioral problems and peer relationships) as predictors of grade average limiting the analysis to the psychiatric sample. The model explained 19.3% of the variance (F (4,109) = 6.515, p<0.000). Significant predictors were emotional and behavioral symptom subscales (β=0.074, p=0.011 and β=-0.135, p=0.003, respectively). Being under psychiatric care was the strongest predictor of school grades. Other variables which added significantly to the models were gender and age. SOC was a significant predictor of grade average only in the average sample. Among psychological symptoms emotional and behavioral problems were predicting grades significantly.

Qualitative Results

During the interviews, the participants were asked to share their views on their understanding, management, and meaning of the external world, life, and themselves. The qualitative thematic analysis results, using the existentialist approach, showed that participants didn't understand the external world, didn't manage their relationships with the external world, and found it meaningless. They neither understood or managed life nor found it meaningful. And finally, they didn't understand themselves, managed themselves badly, and either didn't know their meaning or found themselves meaningless revealing low SOC and low self-esteem. Their existential circumstances suggested that symptoms may signal difficulties to understand who they were and how to deal with their emotions.

Discussion

Youth from the psychiatric population had less educated parents, lower income and higher divorce rate than youth in the average population. A relevant factor for childhood mental health is the parents' level of education understood as a socio-economic characteristic (Assari, 2018).

Education is one of the protective factors of mental health since it promotes knowledge, emotional self-regulation, reasoning abilities, and interaction skills (Hahn & Truman, 2015). Parents' level of education improves parenting abilities and marital quality (Oreopoulos & Salvanes, 2011). Mothers' educational attainment promotes household decision, the ability to handle finances, control family health and choose the best education for their children (Samarakoon & Parinduri, 2015). Higher level of education may improve the father's view of parenting readjusting the role from a more conventional and distant style to the actual needs of the family (Yeung, 2013).

Negative life events such as parents' psychological problems, divorce, family arguments, bullying, abuse and problems with police were more frequent in the psychiatric sample. According to the literature children experiencing cumulative stress from NLE such as chaos, instability and unpredictability have worse outcomes than average peers (Evans, Li, Whipple, 2013). Low SES, higher prevalence of NLE and family stressors were associated with more severe mental health problems while accumulated NLE exposure in childhood was associated with future mental health issues, including depression and having a chronic illness at age 25 (Bøe, Serlachius, Sivertsen et al., 2018).

Low sense of coherence showed a strong relationship to psychological and behavioral problems in both age groups. This result is in line with the literature. Researchers found inverse relation between SOC and depressive symptoms (Lim et al., 2021; Jellesma et al., 2006), depression and anxiety (Blom et al., 2010, Moksnes et al., 2012), hyperactivity and inattention (Edbom et al., 2010). Problematic emotional states hamper adjusting to stressors related to puberty such as negative life events, peer problems, family and romantic relationships (Hampel & Peterman, 2006) and school context (Moksnes et al., 2010) which may lead to a feeling of inadequacy (Hampel & Peterman, 2006). The negative effect of psychological and behavioral symptoms is also associated with poor self-esteem, lower quality of life and lower social support. Psychological problems and self-esteem are both known to influence SOC and adaptability to life stress and adequate coping. The presence of emotional problems may result in a perception of meaningless of life aggravating the lack of skills to identify useful resources and balance stressors adequately (Volanen et al., 2007).

Alongside the difficulties in various dimensions of life and psychological symptoms, the QoL (the way in which personal circumstances are perceived) is highly relevant. Psychological distress can form a common basis in children and adolescents who suffer from psychological/behavioral problems indicating poor QoL (Mikelli and Tsiantis, 2004). Negative association between QoL and psychopathology are reported by many studies (e.g., Gander et al., 2019; Damnjanović, et al., 2012) in which emotional and behavioral problems are associated to poorer physical, emotional and behavioral well-being. Yasin (2010) found significant negative association between psychological symptoms and social support highlighting that the higher the social support, the less severe the psychological problems. The lack of social support can exacerbate the difficulties of youth with psychological disturbances.

The SOC was predicted by self-esteem, QoL, social support and psychological/behavioral symptoms. The combination of those variables together predicted 64.6% of the variability of the SOC indicating that these are all important factors in understanding SOC. For instance, social support may buffer the negative effect of psychological symptoms on SOC, or self-esteem may mediate the relationship between QoL and SOC. Complex and multidimensional factors affect the academic achievement of students (Jama, Mapesela & Beyleveld, 2008). Academic achievement, in general, is associated with the level of a student's learning. More specifically, academic achievement refers to the school process of students whose learning meets or exceeds their grade-level standards or the level of proficiency in the school work (Sharma & Sharma, 2021).

Sense of coherence might be one of the protective factors acting as a buffer against the school stress (Antonovsky, 1993). There are several studies which showed a positive relationship between SOC and academic achievement in adult (Colomer-Pérez, Paredes-Carbonell, Sarabia-Cobo & Gea-Caballero, 2019), and adolescent samples (Kristensson & Ohlund 2005; Honkinen, Suominen, Välimaa et al., 2005; Oliva, Cunha, Silva et al., 2019). Rivera et al., (2012) concluded that SOC had a positive association with academic achievement and academic aspirations.

SOC is a partially independent, general measure of a person's world view. There is a certain individual variability in SOC that correlates with psychological symptoms. An existing psychopathology may create greater variability in SOC as a consequence. These findings support

the hypothesis of Antonovsky and Sagy (1986) that SOC might be understood as a personality characteristic or coping style and adolescents may be characterized as having stronger or weaker sense of coherence. The greater variability of the SOC values in adolescents may be explained by emotional ups and downs which change more rapidly and with a greater extent than in those adolescents with a stronger sense of coherence (Buddeberg-Fischer, Klaghofer & Schnyder, 2001).

Academic achievement was predicted by SOC, age, gender, psychological/behavioral symptoms. Those factors may have an independent or combined effect on academic achievement. Gender plays a role in academic achievement with females generally performing better than males in several areas. However, the relationship between gender and academic achievement is complex and can be influenced by other variables such as societal expectations and cultural norms. Psychological/behavioral symptoms may interfere in concentration and motivation, making it difficult for youth to perform at their best academically.

According to the results of the present research, grade average was only weakly associated with SOC. Being under psychiatric care was the strongest variable associated with school grades. Other variables which contributed significantly to the models were gender and age. Van der Westhuizen, Beer and Bekwa (2011) studying adult postgraduate students had similar result. They stated that among factors determining psychological strength (such as sense of coherence, locus of control, hope and research self-efficacy) only self-efficacy showed a significant relationship to academic achievement, while SOC did not.

In summary, academic achievement is predicted by several variables, SOC, age, gender, and psychological symptoms among them. While each factor may have an independent effect, their combined impact is complex and requires further research to fully understand. Nonetheless, it is clear that developing a strong SOC can be beneficial for academic success, regardless of age or gender, while addressing psychological symptoms may help improve academic outcomes for those who struggle with mental health issues.

Concluding Remarks

This research investigated SOC and self-esteem of children and adolescents from a salutogenic perspective as well as the factors that may affect their academic achievement. School may

provide opportunity to establish coping resources, as well as stress with regard to performance (such as getting good marks). Childhood and adolescence are periods characterized by learning, adaptation and change. During these periods of life, when young people are building up their self-esteem, the development of identity is made easier by the ability to deal positively with stressors (Compas, 1987). Having a general sense of control over stressors, as well as developing the resources to cope with them, is vital for good health.

Research on everyday stressors and their consequences is largely influenced by a salutogenic orientation (Kristensson & Ohlund 2005). In this scenario the early identification of at-risk youth constitutes an action of great importance to reduce potential failures and implement preventive intervention programs. Individuals with a sound SOC will have the motivation to overcome stress and tension. The accomplishment of a sound SOC relies upon the availability of General Resistance Resources such as adequate social support, self-esteem, education, wealth and childhood living conditions (Volanen et al., 2007) that help successful coping with life demands (Antonovsky, 1979, 1987).

The aspects considered in the present research have a clear implication for educational counseling and orientation tasks. QoL must become an important goal of psychiatric programs of treatment, especially when psychopathology tends to remain (Bastiaansen, Koot and Ferdinand, 2005). The author calls the attention of the health professionals and educators to the relevance of the assessment of psychological/behavioral symptoms and SOC considering the age and gender of the youth in order to give support for the adaptation of changes occurring during these stages of life and prevent deterioration in grades.

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