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Education: The Missing Link of Life Coherence

PhD Dissertation

by

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Abstract

Introduction: Healthcare systems have not yet adequately responded to the burden of mental disorders, especially among children and adolescents who experience mental disorders worldwide. If untreated, these conditions severely influence children's development, educational attainments, and potential to accomplish their lives. Antonovsky proposed salutogenesis contributing with a theoretical and empirical basis through the concept of Sense of Coherence (SOC) to improve mental health. The general objective of this research is to analyze the sense of coherence and self-esteem among children and adolescents with respect to their academic achievement. **Methods:** A mixed method including a cross-sectional design and qualitative interviews was used. Part of the sample (N=199) was recruited from elementary, vocational, and high schools in Szeged, and the other part (N=124) was from patients of the Child and Adolescent Psychiatry Unit of the University of Szeged, Hungary. Mean age of the sample was 14.3 (SD 2.1) years. The instruments used were the Sense of Coherence Scale (SOCS), Rosenberg Self-Esteem Scale (RSE), Strengths and Difficulties Questionnaire (SDQ), Quality of Life Scale (ILK), Multidimensional Scale of Perceived Social Support (MSPSS), demographic and negative life events questionnaire. **Results:** Confirmatory factor analysis showed the 3-factor model superior to the unidimensional one on both samples. SOCS-13 significantly differentiated between average children/adolescents and youth under psychiatric care. Self-esteem, quality of life, and subjective social support were significantly lower in the psychiatric sample. Children had higher SOC, higher self-esteem, and better quality of life than adolescents in both the average and psychiatric subsamples. Self-esteem, quality of life, social support, and psychiatric symptoms significantly predicted SOC. School grade was associated with SOC, age, gender, and psychological and behavioral symptoms. SOC was a significant predictor of grade only in the average sample. Emotional symptoms seemed to be the strongest predictors of academic achievement among all psychological/behavioral symptoms in the psychiatric sample. The qualitative study showed that participants with depressive symptoms didn't understand themselves, managed themselves badly, and either didn't know their meaning or found themselves meaningless revealing low SOC, low self-esteem, and a lack of purpose in their lives. **Conclusion:** Quality of life must become an important goal of psychiatric programs of treatment,

especially when psychopathology tends to remain. The assessment of sense of coherence and psychological/behavioral symptoms considering the age and gender of the youth should be a priority to prevent deterioration in grades and give support for the adaptation of changes occurring during these stages of life.

Key words: Sense of Coherence, Self-esteem, Quality of Life, Adolescence, Mental Health.

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Dedication

I dedicate this dissertation to my loving ancestors, especially my paternal grandmother who taught me to look for my place through the accomplishment of my studies.

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List of Abbreviation

ADHD	Attention Deficit Hyperactivity Disorder
BMI	Body Mass Index
CLCP	Cleft Lip Cleft Palate
CSOC	Children Sense of Coherence
DCD	Developmental Coordination Disorder
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders IV
FSOC	Family Sense of Coherence
GRD	Generalized Resistance Deficit
GRR	General Resistance Resource
ILK	Quality of Life Questionnaire
IMT	Integrative Meaning Therapy
LD	Learning Disabilities
MMR	Mixed Methods of Research
MPSS	Multidimensional Perceived Social Support
NLE	Negative Life Events
OHRQoL	Oral Health-Related Quality of Life
OLQ	Orientation Life Questionnaire
PTSD	Post-Traumatic Stress Disorder
QoL	Quality of Life
RSE	Rosenberg Self-Esteem Scale
SDQ	Strengths and Difficulties Questionnaire

SMH	Salutogenic Model of Health
SOC	Sense of Coherence
SS	Social Support
SOCS	Sense of Coherence Scale
SRR	Specific Resistance Resource
WHO	World Health Organization

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Chapter 1: Introduction

The present chapter introduces an overview of the research project. The chapter begins with the background of the study and the problem statement followed by the presentation of the research objectives. Thereafter the relevance of the research is presented before the structure of the dissertation as the end of the chapter is delineated.

1.1 Background of the Study

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; Msherghi, Alsuyihili, Ashini, et al., 2021; Ćosić, Popović, Šarlija, et al., 2020), Russia-Ukraine war and its global impact (Riad, Drobov, Krobot, et al., 2022; Surzykiewicz, Skalski, Niesiobędzka, et al., 2022; Leon, Jdanov, Gerry, et al., 2022) in addition to the economic consequences (Astrov, Ghodsi, Grieveson, et al., 2022; Health-Europe, 2022; Ahmed, Hasan, & Kamal, 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. Knowing the characteristics of the salutogenic approach (which will be described in chapter 2) 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 and offer strategies for future prevention.

The science of prevention has contributed to several types of 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 towards comprehensibility, manageability, and meaningfulness investigating the factors related to health. 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) has been widely used in literature as a wellbeing indicator that has long-term positive influences on stress regarding school work. This desire to contribute to the emotional health of youth has created this PhD research project operationalized through the Stipendium Hungaricum scholarship program through the Hungarian government at the University of Szeged.

1.2 Problem Statement

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 received any services. Even in high-income countries, most children with mental disorders are not receiving treatment. Given the emerging

increases in childhood mental health problems since the onset of the COVID-19, the above authors discuss the urgency of treating these issues.

One of the most frequent signs of mental health problems in children and adolescents is low academic achievement (Dalsgaard, McGrath, Østergaard et al., 2020), which is a significant problem, however, there are not enough studies focusing on the relationship between psychological/behavioral symptoms and academic performance. Psychological symptoms in childhood and adolescence are related to emotional, social, physical and academic deficits that need to be addressed by the scientific community in order to help youth to reach their full potential.

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, sense of coherence and academic achievement resulting in difficulties in learning and problematic adjustment at school. Therefore, research addressing this issue and proposing early interventions might prevent more severe psychological/psychiatric disorders making this kind of research of great relevance (Harrington et al. 1996). 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 and propose a useful way to improve it.

1.3 Research Objectives

The general objective of the author was to analyze the sense of coherence and self-esteem among children and adolescents in respect to their academic achievement in a salutogenic perspective.

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

1.4 Relevance of Research

The relevance of this study is associated with the contribution of salutogenesis to shed light on several issues in the field of education and mental health of children and adolescents. The author believes that sense of coherence, self-esteem, social support, emotional and behavioral problems and negative life events together can clarify the mechanism how some age-related developmental changes such as the puberty affect educational achievement. Based on this knowledge educational and psychological measures can be taken to avoid serious emotional symptoms and school failure. 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
- Scarce studies about the differences in SOC and self-esteem in children with distinct types of psychological/behavioral problems

1.5 Structure of the Dissertation

The content of the dissertation includes seven chapters. Chapter 1 provides the overview of the research including the research background, problem statement, objectives of the research, research questions, the relevance of the study, and structure of the dissertation. Chapter 2 outlines the theoretical framework of the research based on salutogenesis. It presents the origins of salutogenesis, the salutogenic health concept and its association with quality of life, and other key concepts such as sense of coherence and its antecedents, the Orientation to Life Questionnaire, General Resistance Resources (presenting self-esteem and social support as GRR), and Specific Resistance Resources. Furthermore, sense of coherence is discussed in association with childhood, adolescence, and mental health. A summary of the main literature is presented at the end of the chapter. Chapter 3 discusses salutogenesis applied to education, especially teaching and learning processes. The chapter encompasses the search procedures used in the review and relevant subjects discussed in the literature such as education and health promotion, benefits of the salutogenic theory to pedagogic health ending with a summary of the main points presented. Chapter 4 introduces the research methods including the research approach, aims and structure of the empirical studies, research questions, hypotheses, research design, sample description and characteristics of participants, setting of research, inclusion and exclusion criteria, ethical issues, research instruments, data analysis of quantitative and qualitative studies ending with a summary of the described methods. Chapter 5 presents the results of the quantitative and qualitative studies describing the validity and reliability of SOCS, the comparison between psychiatric and average samples, children and adolescents, and male and female subsamples. Furthermore, the variables found to predict the sense of coherence and academic achievement are presented. Furthermore, the results of the qualitative studies are also presented. A summary of the main findings concludes the chapter. Chapter 6 discusses the results of quantitative and qualitative studies in connection with the theoretical background and literature reviewed in the previous chapters. Implications are described so that stakeholders can foster the concepts of the sense of coherence, self-esteem, psychological/behavioral symptoms, quality of life, social support, and negative life events to improve children's and adolescents' mental health and education. A summary of the main relevant discussion subjects concludes the chapter. Chapter 7 describes a summary of the main goals achieved by the research, research

limitations, theoretical and empirical contributions, recommendations for future studies, and concluding remarks. The chapter reveals the relevance of education as a missing link for life coherence meaning that the apparent chaos of life is an opportunity for all human beings to get in contact with inner resources and learn about life and themselves in order to evolve emotionally, cognitively, and spiritually.

1.6 Session Summary

The present chapter introduces an overview of the research project. The background of the study is associated with mental health which represents a significant global and national economic loss worldwide. Overloaded by excessive demands, many health systems are at the limit of capacity and not properly addressing the burden of mental disorders. One of the most frequent signs of mental health problems 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. The general objective of this research is to analyze the sense of coherence and self-esteem among children and adolescents in respect to their academic achievement in a salutogenic perspective. The dissertation includes seven chapters describing the theoretical framework of the present research, salutogenesis applied to education focused in teaching and learning processes, research methods, aims and structure of the empirical studies, result of the quantitative and qualitative studies, discussion of the quantitative and qualitative results and a conclusion with a summary of the main goals achieved by the research, theoretical and empirical contributions, recommendations for future studies, and concluding remarks.

Chapter 2: Literature Review

The general purpose of this chapter is to provide a comprehensive understanding about the salutogenic approach proposed by Aaron Antonovsky. The author will conceptualize and integrate the existing literature on the SOC, the key concept of this theoretical perspective. The health concept of Antonovsky and a brief note on his life and the history on the development of the Salutogenic Model of Health (SMH) will also be presented. Thereafter the analysis of the main salutogenic constructs will be introduced in order to consolidate the discussion. By presenting its historical process of development and the main researches found in the literature, the author of the current dissertation intends to present the most studied issues and contributions of this framework.

The literature review was done in online databases on PubMed, Google Scholar, Wiley, Elsevier, Open University, Lund University, and ResearchGate with the key words of “salutogenesis, children, adolescents, Sense of Coherence”. The criteria for inclusion were theoretical or empirical articles, books and thesis written in English or Portuguese, primarily on the SOC of children and adolescents. Some articles on parents’ SOC were also included in order to strengthen the comprehension of the concept and its application to childhood and adolescence. The exclusion criteria were publications in languages other than English or Portuguese as well as articles on researches addressing subjects other than problematic issues associated with the SOC of children, adolescents and parents.

Some of the most representative studies in the form of researches, theoretical discussions and proposition of interventions will be discussed. At the end of the chapter, a specific literature review about the implementation of sense of coherence in education will be presented discussing six models about the teaching and learning processes. The chapter summary compiles the main concepts such as SOC and the salutogenesis framework which will be the basis of the present research and the interpretation of the collected data.

2.1 The Origins of Salutogenesis

The salutogenic approach originated as a stress and coping model (Antonovsky, 1979). Ontologically, Antonovsky understood that humans are often in interaction with their

environment and that chaos is a normal part of life. In order to understand this situation, he used the idea of complexity. Complexity may contribute to conflicts; the greater the complexity, the deeper the conflicts. Since conflict conducts to tension, it is essential to know how to handle tension and avoid stress. Sense of coherence is the term that Antonovsky introduced as a way to manage and adapt to a life of chaos (Mittelmark & Bauer, 2017).

The development of the Salutogenic Model of Health is described as a ‘personal odyssey’ over the decades (Antonovsky, 1990) where Antonovsky presented himself as a sociologist of health studying the stress process and how society can develop competence to cope with stressors (Antonovsky, 1979). In his article, the traditional medical view of homeostasis was abandoned and the philosophical view of “the human organism as in the state of heterostatic disequilibrium was introduced as the core understanding of the salutogenic orientation” (Antonovsky, 1987). In his relentless quest, Antonovsky sought useful inputs from the socio-cultural context, the physical environment, and even the organism at the cellular level to understand the normal tendency of entropy. At that time, he presented the term negative entropy, concluding that it was futile to try to understand and control the causes of diseases. A more fruitful approach would be to focus on the problem of adaptation to an environment in which stressors were omnipresent and inevitable (Antonovsky, 1987). 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? He answered: “The origins of health are found in the sense of coherence” (Antonovsky, 1979, preface vii). Trying to understand the greatest mystery of “How do we manage to stay healthy?” (Antonovsky, 1979, preface vii), Antonovsky worked on the Salutogenic Model of Health for about 30 years. The first 15 years resulted in his book *Health, Stress and Coping* (1979), and the presentation of the Salutogenic Model of Health.

The plural form ‘origins’ relate to the possibility of multiple health determinants. However, Antonovsky suggested a confluence of all salutogenic processes into a particular mental orientation represented by the SOC (Mittelmark & Bauer, 2017). Salutogenesis started as a paradigm which developed from a number of independent but related constructs, such as sense of

coherence (Antonovsky, 1979), potency (Ben-Sira, 1985), hardiness (Kobasa, 1982), learned resourcefulness (Rosenbaum, 1980), locus of control (Rotter, 1966) and stamina (Thomas, 1981).

Antonovsky investigated cognitive coping responses to socially structured psychosocial stressors (Antonovsky, 1979). Minority groups and restricted social conditions were the focus of his research. After completing his PhD at Yale University, he emigrated to Israel in 1960. In Jerusalem at the Israeli Institute for Applied Social Research and in the Department of Medical Sociology at the Hebrew University of Jerusalem, his work accentuated the role of social class differences in morbidity and mortality emphasizing social aspects for a better quality of life. He helped to establish the medical school at Ben-Gurion University of the Negev in Israel in 1972, holding the Chair in Medical Sociology. Along his twenty years in that Department, Antonovsky developed his theory of health described in *Health, Stress and Coping* (1979), followed by *Unraveling the Mystery of Health* (1987).

One of the main reasons for the proposition of salutogenesis was to counterbalance the pathogenic orientation. Salutogenesis recognizes that stressors are endemic in our lives and that there is a need to manage this tension. It rejects the common assumption that stressors are bad, and declares that they may have beneficial consequences. The salutogenic question is concerned with the way that individuals learn to live well with stressors, and additionally turn the existence of problems into advantage. In contrast, the pathogenic orientation is concerned with the way individuals can eradicate stressors from their lives. In this regard, Antonovsky (1987) introduced the concept of “Generalized Resistance Resources” (GRRs). GRRs explain what facilitates our movement towards the most salutary end of the breakdown continuum when searching for specific disease-relevant factors. This shift from the pathogenic to the salutogenic research resources has created a new conceptualization in which cognitive processes and coping strategies are incorporated and the exchange between the individual and the environment is responsible for the maintenance of the organismic balance. Therefore, it becomes possible for individuals to take responsibility for their health, if their environment enables them to act autonomously and to cope with health impairing stressors (Antonovsky, 1987).

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.

Antonovsky's (1987, p. 7) question: "Whence the strength?" shows the salutogenic reasoning inspiring many researches about the investigation of why some cope successfully in spite of omnipresent stressors and others do not. With this question, salutogenesis has become associated with man's ability to thrive on adversity, receive gratification from one's own health work and generate health (Antonovsky, 1987). Since this scholarly orientation focused on the origins and the assets of health instead of the origins of disease and its risk factors (Mittelmark & Bauer, 2017), salutogenesis gained extensive recognition as an approach oriented to coping, learned optimism, cultural and social capital, quality of life, empowerment and action competence. Salutogenesis provides the framework for a redesigned health care system based on the causes and precursors to physical, mental, and social well-being (Becker et al., 2010).

Inspired by the work of Aaron Antonovsky, Ventegodt et al. (2005) proposed the theory of existential coherence explaining that quality of life (QoL) and health are determined by consciousness. The abovementioned theory is a matrix of nine key elements (coherence, purpose of life, strength, consciousness, love, sex/physicality, being enlightened, joy, and meaning/QoL). According to the theory of existential coherence our ability to function is in our thinking, caused by our physical, mental, spiritual, sexual, and social health, which allows us to express our purpose of life. This model holds the person responsible for one's happiness and assures that healing is the primary goal of personal development. In its most complete meaning, salutogenesis refers to a model which looks for life experiences that could form and improve sense of coherence. A strong SOC helps to mobilize resources to cope with stressors and manage tension successfully. Through this mechanism, SOC helps to determine the movement along the health ease/dis-ease continuum (Mittelmark & Bauer, 2017).

Introducing the theory of salutogenesis, Antonovsky did not abandon the idea of pathogenesis, but viewed it in a complementary way. This new understanding enlarged the interventions in health promotion to involve the whole population, not only people who were ill or at risk and focused on the identification of factors promoting health (called salutary factors). The above represent some of the most relevant contributions brought by this model. The Salutogenic model is a sociological approach to health that can be understood as an interdisciplinary foundation under which several concepts can be included (Antonovsky, 1996). It is useful for both research

and health interventions because it's in agreement with the WHO directive claiming that health promotion should be aimed at the population in the context of daily life, instead of focusing on people at risk of disease (WHO, 1986).

Antonovsky's ideas were first showed in the book *Health, Stress and Coping* (1979), the publication which completed his definitive turn from pathogenesis to salutogenesis. After that Antonovsky dedicated his efforts to develop, operationalize and measure the core construct of his model, the SOC concept. Later he published *Unraveling the Mystery of Health* (1987), focusing his attention on the SOC and its role as an independent variable in health research (Eriksson & Lindström, 2006; Mittelmark & Bauer, 2017). As it was mentioned before, salutogenesis proposes a healthy/dis-ease continuum; opposed to the risk factors of pathogenesis, salutogenesis highlights salutary factors that actively promote health; instead of focusing on a particular pathology of a person, salutogenesis prefers to work with a community (Antonovsky, 1996).

Relevant contributions of Antonovsky include the writings about the role of culture producing life situations which on the one hand could create predictability and load balance and thus facilitate the development of the SOC or on the other hand increase stressors and result in illnesses. One of the hardest social demographic characteristics is low-economic status. Social and cultural contexts in the salutogenic perspective are understood as scenarios which can lead to the creation of psychosocial stressors or resistance resources. SOC is structured as the result of life experiences to face and cope with stressors. There are several researches investigating the relationship between childhood socioeconomic position and oral health-related behavior. It seems that a strong SOC is linked to better oral health even in low-income families (Bernabé et al., 2012, Da Silva, da Silva and Vettore, 2014), this phenomenon is true for both the mothers' and the children's SOC. Characterizing the philosophical background of salutogenesis, Antonovsky claimed that entropy is the norm and that the experience of illness is part of the human condition. Illness, being the subjective experience of not feeling well is in this manner a more holistic experience than a specific disease. While an action toward the ease pole is a salutogenic movement, the flow towards the dis/ease pole is considered pathogenic (Antonovsky, 1979). The Salutogenesis model is more than simply the measurement of the SOC. Lindström and Eriksson (2010) in Mittelmark & Bauer (2017) talk about salutogenesis as an umbrella

concept beneath which many other comparable theories and concepts can be sheltered sharing common dimensions. Seen in this perspective, salutogenesis might be defined as a process in which people and communities are engaged to individual and collective health and well-being.

2.2 Salutogenic Health Concept and Quality of Life

Human beings must constantly adapt to numerous and diverse factors in order to maintain a relatively steady state. The main problem for survival is not only to remove the excess stimuli, but to extract information from all possible sources, to search for negentropic (more highly organized) resources and to make sense of the constantly bombarding stimuli. According to Antonovsky the central problem to all sciences is to find order out of chaos. World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948). However, Antonovsky (1979) considered that this definition is too optimistic, makes no reference to the struggles of life, and can be neither operationalized nor measured. The disagreement with the broad concept of health of the WHO, the search for a more precise definition with the consideration of values such as social and mental well-being led Antonovsky to the search of an alternative definition of health achieved through the scale of sense of coherence (Vinje, Langeland, & Bull, 2017).

Parallel to his role as theoretician and researcher, Antonovsky also significantly contributed to education in medicine. Being a teacher of medical students, Antonovsky was questioned about a proper definition of health many times. He thought: “it is crucial that students learn to see health in a broad context going far beyond the physiological level.” (Antonovsky, 1979, p. 67). Health should be understood beyond the Cartesian dualism in a wide context involving imagination, love, playing, meaning, will, and the social structures that promote these results (Antonovsky, 1987) therefore encompassing quality of life. Health must be narrowly defined to facilitate empirical research and to avoid value-based definitions that might create abuse of power. The origins of health are created when the individual focuses on the ease pole of the health ease-dis/ease continuum (Vinje et al., 2017). Having in mind the concept of health promotion, Antonovsky proposed some crucial key points which understood health as a continuum (not as a dichotomy between sick and healthy people), focused on the individual’s own story (not only on the diagnosis), comprehended the importance of salutary factors, understood stress as

pathogenic, neutral, or salutogenic, and helped the individual to develop the ability to adapt to find cure (Vinje et al., 2017). In salutogenic approach, no one is categorized as healthy or diseased since we are all somewhere between the imaginary poles of total wellness and total illness. Health is the movement on the continuum of ease and dis-ease pole (Antonovsky, 1993).

The importance of comprehending the whole situation of life and the capacity to use the available resources (such as the SOC) was highlighted by Antonovsky several times. This is a combination of the individual's ability to understand the situation and to find the meaning to move in a health promotion direction (Vinje et al., 2017). A key concept in Antonovsky's theory is how specific personal traits contribute to making individuals more resilient to the stressors that they face in daily life. Through research, Antonovsky identified these characteristics, which he believed helped a person to better cope and remain healthy by providing a sense of coherence about life and its challenges.

The different definitions of QoL are based on subjective well-being, human needs, and phenomenological perspectives (Bowling, 2005) including life satisfaction and flourishing. These include conscious evaluation of contentment in one's life (Peasgood, Brazier, Mukuria, et al., 2014), a cultural perception of the position in life and value systems associated with goals, expectations, and concerns (Kuyken & Group, 1995). Furthermore, it includes personal development and purposeful activity graded by personal values (Felce & Perry, 1995). A more general definition of QoL refers to the wellbeing associated with physical and mental health, self-esteem, perception of activities, relationship with significant others, friends, family, school/work and social functioning (Matza et al., 2004, Kiss et al., 2021). All this is embedded in a worldwide society that faces transformation in high speed often without time for the emotional process of assimilation. Therefore, it becomes crucial for mental health to be able to maintain balance and coherence in oneself while facing so many transformations. The capacity of an individual to learn, develop healthy relationships, work, improve skills to cope with stress, adapt to the changes of the environment are result of one's good mental health (Global Ministerial Mental Health Summit, 2018). An optimum state of health that allows accomplishing full potential and QoL (Becker, Glascoff & Felts, 2010) should be expected according to the definition of WHO. For that reason, it is essential to establish new standards that evaluate health

potential (Breslow, 2006) beyond only diagnosing pathology and/or focusing on the conditions associated with excellent health and QoL. Considering the need to manage and adapt to a life of chaos, Świtaj, Grygiel, & Chrostek, (2017) tried to elucidate the mechanism through which internalized stigma reduces the quality of life (QoL) of people with mental illness by exploring the mediating roles of self-esteem and SOC. Self-esteem and SOC are personal resources that should be considered as potential targets of interventions aiming to prevent the harmful consequences of internalized stigma for the QoL of people receiving psychiatric treatment (Świtaj, Grygiel, & Chrostek, 2017).

Salutogenesis (study of the origins of health) starts by considering health and looks prospectively at how to create, enhance, and improve physical, mental and social well-being (Antonovsky, 1985) and QoL. Assistance for those who are sick and want to recover and for those who wish to look beyond disease for complete health (Antonovsky, 1985) will only be achieved when knowledge about the precursors of health is accomplished. Nowadays most measurements are focused on the lack of disease because the pathogenic framework still governs. Salutogenesis however, proposes the development, measurement, and documentation of practices that aim at the full potential of human beings (Becker, Glascoff & Felts, 2010) encouraging life contentment and work achievement in addition to a full quality of life in physical, emotional, intellectual, social and environmental dimensions. As medical treatment allows for extending the length of life, quality of life becomes relevant in health care. Improving QoL without extending the length of life gained importance (Kaplan & Bush, 1982). Assessment of QoL also became important in the need to assess outcomes beyond biological functioning and morbidity (Kiss et al., 2021).

Sense of coherence is the crucial concept of salutogenesis. It is interpreted in various ways by different researchers: an internal disposition of the personality (Antonovsky, 1985; Antonovsky, 1990; Eriksson & Lindström, 2006; 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; Wainwright, Surtees, Welch, et al., 2008); 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; Wainwright, Surtees, Welch, et al., 2008). The emphasis on a sound SOC for the creation and improvement of proper mental health and QoL has been discussed and encouraged by several studies, especially longitudinal researches.

2.3 Sense of Coherence and its Antecedents

At least one-third of the world's industrial society is characterized by some pathological condition; therefore, disease would not be considered deviance but a normal state of the human condition (Antonovsky, 1987). Antonovsky argues that given the pervasiveness of pathogens (microbiological, chemical, physical, psychological, social, and cultural) and the number of challenges that we have to face every day, it would be hard to keep balance and good health. However, adverse circumstances help us to develop inner resources and become stronger. Despite the ubiquity of pathogens (microbiological, chemical, physical, psychological, social, and cultural), Antonovsky (1979) noticed that many individuals survived and even flourished under these difficult circumstances without succumbing. In terms of the salutogenic approach, personal resources and characteristics are crucial when considering the mechanisms of coping with stress.

The construct of Sense of Coherence designed by Antonovsky (1979), is similar to other concepts such as Hardiness from Kobasa (1979), Locus of Control from Rotter (1966) and Learned Resourcefulness from Rosenbaum (1988) covering a range of personality characteristics and skills linked to managing stress and staying well (Antonovsky, 1991). Antonovsky (1979, 1987) himself confirmed that the above constructs are parts of the “generalized personality orientation” studied in relation to successful coping. SOC is considered an adaptive dispositional orientation within the personality that enables individuals to handle adverse experiences (Antonovsky 1979, 1990, Eriksson & Lindstrom, 2006). SOC integrates the meaningfulness, comprehensibility, and manageability of a situation or disease. The more a person is able to understand and integrate (comprehensibility), handle (manageability), and make sense (meaningfulness) of an experience, the greater the individual's potential to successfully cope with the disease and life stressors. In the 1979 version of the SOC definition, Antonovsky was clearly influenced by the theory of systems and the ideas of order/disorder and gave much attention to the sub-component of comprehensibility (the clear understanding of the problem). In

delineating manageability, he was inspired by the work on mastery and coping, particularly locus of control (Rotter, 1966). As he continued to deepen his understanding of coping it became important to emphasize that the crucial point about manageability is trust that adequate resources to cope with stressors are to be found either: “. . .in one’s own hands or in the hands of legitimate others” (Antonovsky, 1990, p. 79). The third sub-component, meaningfulness was fully delineated in the 1987 book. It had been mentioned only briefly in 1979, and phrases such as the world makes sense was primarily used to describe a cognitive perception of order. Inspired by the work of Victor Frankl, Antonovsky understood meaningfulness as the emotional way of looking at life as worth of living, providing the motivational force: “. . .which leads one to seek to order the world and to transform resources from potential to actuality” (Antonovsky, 1990, p. 79).

The definition of SOC was expanded in the book *Unravelling the Mystery of Health* (1987). “The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement.” (Antonovsky, 1987, p. 19). In 1990, Antonovsky still remained with this rationale but added a new element which was meaningfulness (Antonovsky, 1990) clarifying that the expanded definition has less cognitive emphasis than the initial one. Comprehensibility, the cognitive dimension, refers to the extent to which the individual sees internal and external stimuli as understandable, coherent rather than chaotic, and unexplained (Antonovsky, 1991). The ability to create structure from the chaos helps to understand the context and the individual contribution to the result, for example, one’s role in the family or in the workplace. Manageability, the behavioral dimension, is defined as the degree to which the individual feels that there are available resources that can be used to face the stimuli (Antonovsky, 1991). Formal resources include, for example, social services and health care in public and private organizations. Informal resources include people who are trusted in difficult situations, for example, family, friends, and significant others. Coping also requires motivation, finding meaning in managing the situation, and a willingness to invest energy to solve problems. This leads to the third dimension of the SOC. Meaningfulness, the motivational

dimension, refers to the extent that the individual feels that life has an emotional message and that some of the problems are worth the commitment and are understood as challenges rather than burdens (Antonovsky, 1991).

Explaining the link between stressors and disease, Antonovsky (1990) was trying to solve the methodological problem of getting the right list of stressors. Eventually, he understood that it was a philosophical question. At the time, research focusing on stressors tended to assume life as inherently stable with major stressors only occasionally occurring. Antonovsky believed that this view was inadequate. A more fruitful vision was to see life as turbulent and full of conflicts which he called chronic life burdens referring to structural and cultural situations such as poverty, unemployment, and marginality which were also the sources of many major stressful life events, as well as the daily hassles which people faced (Antonovsky, 1990). Being a respondent of his own study, Antonovsky had the insight that he was exposed to stressors, but they did not result in illness because he was coping successfully. This question moved him to focus on how specific stressors were handled (Antonovsky, 1990). Stressors create tension in people, but if resolved they did not result in anxiety, a health-damaging condition needed to be avoided. In this way coping and tension management emerged as important concepts and intervening variables between tension and illness. At this point, there was a decisive change in his thinking. Reflecting on the “why-question” he realized that it was not just the stressors, but resources to cope with the struggles of life. The experiences and their consequences will be different for people exposed to the same stressor with different resources. The most important factor in coping was not the specific disease but the consequences of the psychosocial stressors, and the collapsing process (Antonovsky, 1979). Antonovsky hypothesized that all diseases have something in common and that General Resistance Resource (GRRs) were to counteract all of these (Antonovsky, 1979).

Antonovsky first conceptualized the sense of coherence as a broad world interpretation that ranges from totally ordered to chaotic. The more someone believes that the world is ordered, the more sound one’s sense of coherence is, the more adequately one can deal with stress, and consequently the healthier someone’s mental health is (Antonovsky, 1991). SOC is related to the ability to face hassle using flexible ways. Therefore, thinking in a salutogenic style, well-being

can be understood as the result of someone positioned at the opposite end of the spectrum of mental health. Supported by the above reasoning, the assumption that someone is capable of successfully dealing with life's negative issues can improve their integration and mental health. This belief gives a feeling to the individual that coping is possible, and conducts to a behavioral change. Therefore, an affirmative association between mental health and SOC can be expected.

The role of SOC (Antonovsky, 1987) is related to mobilizing the General Resistance Resources and the Specific Resistance Resources (SRRs); to understanding the perceived stimulus as welcomed and to moving on the health ease/dis-ease continuum. Salutogenic approach postulates that SOC helps the individual to activate GRR and SRR while facing psychosocial and physical stressors. This tension may result in handling avoided stressors with success or lead to unsuccessful management of stress. SOC is postulated as an orientation (attitude, mindset) that converts information about stressors and resources into coping responses (Mittelmark & Bauer, 2017). Antonovsky (1990, p. 78) listed a range of ways in which SOC affects health such as:

- Leads to engage in health-promoting behavior through a positive attitude.
- Influences the process of understanding a stimulus as a stressor, neutral, or salutary.
- Facilitates interpreting a stressor as ordered.
- Induces the search for GRRs that are appropriate for the specific situation and a flexible rather than rigid pattern of response.
- Creates the response patterns in the brain to send messages to activate appropriate bodily resources.
- Helps to analyze the results of behavior and be ready to redesign responses if needed.
- Makes awareness of the need to cope both instrumentally and emotionally.

2.4 Orientation to Life Questionnaire (SOCS)

Based on abundant use of statistics, Antonovsky proposed that it is very rare to be completely healthy (Antonovsky, 1979). As life is dynamic and there are changes, all human beings are in a considered time located on the health ease-dis/ease continuum from maximal ill (dis/ease pole) to maximal well (ease pole). The most important aspect is to understand what moves someone toward the ease pole of the continuum, despite where the individual was initially placed. Major

negative life events such as illness, changes in the family (e.g., a divorce), and changes in the workplace or unemployment affect health, reducing health temporarily. However, these negative life events bring the experiences that can be used in other similar situations strengthening the individual with the opportunity to manage stress. Life orientation is how the individual orientates himself in his life and this orientation can be positive or negative. Based on that Antonovsky (1987) developed a questionnaire originally named Orientation to Life Questionnaire to measure sense of coherence. The questionnaire later became the Sense of Coherence Scale (SOCS) taking the name of the main concept that sustains it.

The original form of the Orientation to Life Questionnaire consists of 29 items, 11 items measuring comprehensibility, 10 items measuring manageability, and 8 items measuring meaningfulness. The response alternatives are on a semantic scale from 1 to 7 points. Answer possibilities indicate extreme feelings about how life is experienced scored from 1 (never have this feeling) to 7 (always have this feeling). The questionnaire has a summed index with a total score ranging from 29 to 203 points for the original scale of 29 questions (SOCS-29). A shorter version of 13 questions (SOCS-13) of the original form was also developed by Antonovsky (1987), where the overall score ranges between 13 and 91 points.

There are three subscales following the three components of sense of coherence (Antonovsky, 1987) comprehensibility, meaningfulness and manageability. Below are some examples of items measuring the comprehensibility dimension (Antonovsky, 1987, p. 190): “When you talk to people, do you have a feeling that they don’t understand you?” and “Do you have a feeling that you are in an unfamiliar situation and don’t know what to do?”. The following items are examples of the manageability subscale: “When something unpleasant happened in the past your tendency was:” (opposing ends of the answer possibilities are : “to eat yourself up about it” and “to say “ok that’s that, I have to live with it” and go on”) and “When you do something that gives you a good feeling: “ (opposing ends of the answer possibilities are: “it’s certain that you’ll go on feeling good” and “it’s certain that something will happen to spoil the feeling”). Finally, meaningfulness is calculated with items like: “Doing the things, you do every day is:” (opposing ends of the answer possibilities are: “a source of deep pleasure and satisfaction” and “a source of

pain and boredom”) and “When you think about your life, you very often:” (opposing ends of the answer possibilities are: “feel how good it is to be alive” and “ask yourself why you exist at all”).

Antonovsky suggested that SOC should be thought of as a unified construct and therefore researchers should avoid calculating the individual sub-dimensions in order to examine them separately (1987). Later research showed (Eriksson & Mittelmark, 2017) that SOC seems to be a multidimensional construct rather than a unidimensional one, with the three sub-dimensions interacting with each other to form the encompassing factor of SOC.

The Sense of Coherence Scale (the more-known name of the scale) has been empirically tested both in Western and Eastern cultures (Eriksson & Mittelmark, 2017). Studies have been conducted in various samples such as general populations, wide range of professions, individuals with disabilities, patient groups as well as adults, elderly, families, organizations, and also on the societal level.

A systematic research review carried out by Eriksson & Lindström (2005) showed that until 2003, the SOC-29 and SOC-13 had been used in at least 33 different languages in 32 different countries. Another update showed further 16 languages and added one Hungarian study that only tested adult population with the SOC scale (Biro, Balajti, Adany, & Kosa, 2010). According to Eriksson and Mittelmark (2017), the consensual validity of the SOC questionnaire is somewhat weak. Consensual validity indicates the extent to which various scientists agree on the characteristics of an instrument (Cooper, 1998). A research review showed that there were at least 15 different modified forms of the SOCS with 3 to 28 questions between 1992 and 2003 (Eriksson & Lindström, 2005).

Regarding criterion validity, Eriksson and Lindström conducted studies in 2005 about the connection between the SOC-29 and other instruments to measure health, such as perceived self, quality of life, well-being, attitudes, and behaviors. The results showed that the correlation with health varies from insignificant to strong, with instruments like the General Health Questionnaire, the Health Index, the Hopkin’s Symptom Checklist, and the Mental Health Inventory, with health measures explaining more than 66 % of the variance of the SOC-29. In general, the studies about the connection between SOC and well-being show that a high SOC is

related to a high quality of life (Eriksson and Lindström, 2005). Predictive validity is the power of an instrument to predict the future. (Abramson & Abramson, 1999 in Eriksson and Mittelmark, 2017). Some researches such as Lundman et al., 2010; Luutonen, Sohlman, Salokangas, Lehtinen, & Dowrick, 2011; Poppius, Virkkunen, Hakama & Tenkanen, 2006 support the predictive validity of the SOCS (Eriksson & Lindström, 2005) (Eriksson & Mittelmark, 2017).

The assessment of internal consistency measured by Cronbach's alpha ranges from 0.70 to 0.95 using SOC-29 (124 studies) and 0.70 to 0.92 (127 studies) using SOC-13 (Eriksson & Lindström, 2005; Eriksson & Mittelmark, 2017). The test-retest reliability shows the stability of a given phenomenon over time. A reliability of 1 is a perfect match, a test-retest value of 0 means no stability at all. The assessment of test-retest reliability of the SOC-29 varies from 0.69 to 0.78 (1 year), 0.64 (3 years), 0.42 to 0.45 (4 years), 0.59 to 0.67 (5 years), and lastly 0.54 after the 10-year follow-up (Eriksson & Lindström, 2005).

2.5 General Resistance Resources (GRR) and its Antecedents

Among the literature studying resilience, several protective factors were identified enabling the individual to overcome adversity. Hans Selye is considered the father of general adaptation and stress syndrome concepts based on experimental results (Rochette et al., 2023). Lazarus and Folkman proposed the most popular model describing stress pathway. Their model emphasized that the person's relationship with the environment is critical and suggests that the stress response is highly influenced by individual appraisal processes (Obbarius et al., 2021).

Antonovsky was working with women who survived the Holocaust. He noticed that most of those exposed to severe stressors did poorer in the later stages of life. However, a third of them did not become physically or emotionally sick. "What was the miracle?" (Antonovsky, 1990, p. 76). Antonovsky was interested in understanding the nervous collapse which happened as a result of unsuccessfully confronting stressors. ". . . breakdown is a result of unresolved disturbance of homeostasis. It is not, then, the imbalance which is pathogenic. It is, rather, the prolonged failure to restore equilibrium which leads to breakdown. When resistance resources are inadequate to meet the demand, to resolve the problem which has been posed, the organism breaks down" (Antonovsky, 1972, p. 541). An individual can cope successfully with stressors

through the application of resources preventing the tension from being transformed into stress. At that time, the dependent variable that interested him was breakdown, and the independent variables were the GRRs. The formal definition of GRRS is a physical, biochemical, artifactual-material, cognitive, emotional, valuative-attitudinal, interpersonal-relational and macro-sociocultural characteristic of an individual, primary group, subculture or society that is effective in avoiding and combating a wide variety of stressors and thus preventing tension from being transformed into stress (Antonovsky, 1979, p. 103; Antonovsky, 1987, p.105). The level of stressors, (objectively or subjectively defined) was not of importance to him (Antonovsky, 1979, prologue 5) because it was obvious that having resources, being conscious of them, and having the ability to use them was an important factor in avoiding dis/ease.

Antonovsky's understanding about stress and health developed, and he realized that we are all exposed to stressors and illness. As some were doing better than others, he formulated the question: "What moves people towards the health end of the health ease dis/ease continuum?" He needed a word for expressing the movement toward the health end of the continuum and found it in salutogenesis again, which he used in another context 10 years earlier. In 1979, Antonovsky defined stressor as: "A stimulus which poses a demand to which one has no immediate, available and adequate response" (Antonovsky, 1979, p. 72). The strength of this definition was that the individual could classify stimuli without knowing if tension would be transformed into stress or not, however, in 1987 he associated the definition of stressors with resources. He believed that the absence of a GRR could become a stressor so he named the absence of resources Generalized Resistance Deficit (GRD) and explained that the stressor-resource situation (GRR-GRD) could be expressed by a continuum, with many potential possibilities (Vinje et al., 2017). Antonovsky suggested that researchers should understand the 'major psychosocial generalized resistance resources/resistance deficits' (GRR-GRDs) as just one concept. In every case, if wealth, ego strength, cultural stability, etc. is considered, the individual may be ranked on a continuum. A higher place on the continuum will probably bring life experiences conducive to a stronger SOC; lower placement will probably be conducted to a weaker SOC (Vinje et al., 2017).

According to salutogenesis, a stressor is defined as a feature that introduces entropy (life experience characterized by inconsistency and exclusion from participation in decisions). Any event or phenomenon can be characterized by the degree to which it creates consistency, load balance, and participation in making decisions. If an experience is toward the helpful end of the continuum, it indicates the existence and use of GRRs but if it is toward the adverse end, it indicates a lack of GRRs and consequently a GRD. The encompassing concept of GRR-GRDs provides a theoretical basis for a measurement tool and an understanding of not focusing on stressors or resources separately, but on their combined effect. The term Generalized Resistance Resources (GRR) was created by Antonovsky (1979, 1987) and is related to the characteristics of a person, a group, or a community that improves the abilities to cope effectively with stressors and contribute to the development of the individual's level of SOC. GRRs refer to a phenomenon that provides the individual with a collection of life experiences characterized by consistency, participation in creating outcomes, and balance (Antonovsky, 1987). According to Antonovsky (1979, 1987), Eriksson and Mittelmark, (2017), such resources include material resources (e.g., money), knowledge and intelligence (e.g., world information and skills), ego identity (e.g., integrated and flexible self), coping strategies, social support, coherence with cultural background, cultural balance, ritualistic activities, religion and philosophy (e.g., answers to life's mystery), preventive health orientation, strong genetic background, proper constitutional resources, and individuals' mindsets to cite some of them.

Each one of these GRRs is presented on a continuum. An individual who is higher on the continuum tends to have consistent, balanced life experiences and high participation in decision-making. However, an individual who is lower on the continuum tends to have inconsistent, low-balanced life experiences and low participation in decision-making. Individuals who are higher on the continuum GRR/GRDs are viewed as GRRs. Individuals who are lower on the continuum of the GRR-GRDs are viewed as GRDs. Based on this assumption, both GRRs and GRDs contribute to the development of an individual's SOC. Despite the fact that the salutogenic approach supposes that individuals develop SOC through successful applications of GRR-GRDs throughout life, this model also introduces the idea of a reciprocal and active relationship with SOC. The GRR-GRDs contribute to the enhancement of the level of SOC and the level of SOC may contribute to mobilizing GRRs to improve the management of tension. At the same time,

when GRRs or GRDs become consistent as a characteristic, they are viewed as the primary determinants of the strength or weakness of an individual (Antonovsky, 1987).

As described before, three types of life experiences contribute to the process of development of SOC. These are consistency, load balance, and participation in shaping outcomes. Consistency is related to the extent to which messages are clear, ordered and structured more than chaotic. Experiences of consistency in an individual's life provide the basis for the comprehensibility component of the SOC. The second component, load balance, refers to the extent to which, during the development, the individual experiences oneself overloaded or underloaded by the demands or lack of resources. Such load balance is important for the SOC's manageability component. The third life experience, participation in outcomes, refers to the extent to which the individual has a significant part in deciding one's future. Participation in shaping outcomes provides the basis for the meaningfulness component (Antonovsky, 1991). The fourth dimension, emotional closeness (Sagy & Antonovsky, 2000), is related to the feeling of having consistent emotional bonds and a sense of belonging to social groups. Alike the participation in shaping outcomes, emotional closeness is understood as relevant to the meaningfulness sub-component of SOC.

2.5.1 Self-Esteem as a General Resistance Resource

A relevant personal factor for the development of SOC is self-esteem (Lindström & Eriksson, 2006) which is one of the classical General Resistance Resources. Self-esteem is defined as the individual's self-worth or attitude toward oneself (Rosenberg, 1965). High self-esteem refers to a favorable global evaluation of the self (Baumeister et al., 2003). The presence of negative self-esteem indicates traumatic experiences, psychological and behavioral difficulties (Cantón & Justicia, 2008). Self-esteem develops during the first years of childhood from the experiences of the personal concept of oneself (Schultz & Schultz, 2021) and is associated with all aspects of life (Mann et al., 2004). Poor interpersonal skills, limitation in resilience resources, vulnerability to stress, and difficulties in relationships are among the factors associated with negative or low self-esteem (Lamoureux et al., 2012).

Self-esteem has a powerful impact on human cognition, emotion, and behavior. In general, fluctuations in self-esteem bring strong emotional reactions and are often associated with

successes and failures in life (Baumeister, Campbell, Krueger & Vohs, 2003). Self-esteem has been associated with academic achievement (Baumeister, et al., 2003) as a motivational factor (such as the individual trying to succeed at school in order to maintain a generally positive image of him/herself), however, on this matter literature also shows different positions such as Zuffianò, Alessandri, Gerbino, et al., (2013) who found that self-esteem does not predict academic achievement. The author of the present research believes that self-esteem is a core concept in mental health and is relevant in helping youth to accomplish academic achievement. Recent research from Sharma and Sharma (2021) supports this assumption in secondary school students. Their results suggest that high self-esteem is the key factor for the prediction of educational achievement.

Better self-esteem predicted higher SOC (Moksnes et al., 2016), less anxiety and depression (Cederblad et al., 2003) in a sample composed of children from 7 to 18 years and their parents. Self-esteem is a relatively stable but not immutable trait that increases from adolescence to adulthood predicting accomplishment and well-being in dimensions such as relationships, work and health (Orth & Robins, 2014). The relationship between SOC and self-esteem in childhood has not been studied extensively.

Adolescent mental health problems are generally associated with low self-esteem (Guillon, Crocq & Bailey, 2003). A longitudinal study showed that higher self-esteem at baseline predicted fewer symptoms of anxiety, depression, and attention problems three years later (Henriksen, Ranoyen, Indredavik, et al., 2017). Mazzone, Postorino, Reale, et al., (2013) found that subjects with attention deficit and hyperactivity disorder (ADHD) had lower self-esteem compared to normal controls. No recent literature was found in regard to self-esteem and demographic variables in children and adolescents.

2.5.2 Social Support as a General Resistance Resource

Antonovsky (1979, 1987) used the concept of GRRs 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, a global orientation already explained that contributes for the individual self-organizing, self-preserving and self-creating competences (Wiesmann et al., 2004). Studies on social support investigate an individuals' resources from a variety of origins and highlight that the presence of significant others in stressful situations enhances mental health. Omiya & Yamazaki (2017) studied the experience of mothers of children with cleft lip and/or cleft palate (CLCP). The results showed a strong relationship between participants perceived positive change and the experience of sharing emotions with other mothers in the same situation, support from medical staff, and living in safe areas. SOC correlated with the perceived positive change and access to resources in time of need, having someone to trust and having a high level of community engagement. Experiences of being stigmatized about CLCP of their children were associated with low maternal sense of coherence. Noyman-Veksler et al., (2015) investigated the effect of SOC and perceived social support on post-natal psychological symptoms and mother-infant bonding. An emergency mode of delivery predicted an increase in post-traumatic stress disorder (PTSD) only in women with low social support. A strong SOC of the mother, however, predicted a decrease in post-natal PTSD and depression. Ahlborg, Berg, and Lindvig (2013) investigated the SOC of first-time parents during the first 8 years of their child's life. SOC of parents decreased for both genders four years after birth and increased again 8 years later. Variables associated were social support, the experience of parenthood, constrained economy, and health.

Social support provided by classmates and teachers at school and social support from friends in the peer group are very important for children and adolescents. Anmyr, Olsson, Freijd, et al., (2015) explored the personal and social resources of children with a cochlear implant and found that school life was an important scenario for their social network. Some children with implants had low SOC and poor mental health. High SOC and good mental health were associated with closeness of the social network, especially in school. High social support in the first semester raised SOC scores of elementary school children in the following semesters, and increased subsequent social support (Hotoge, Takeda, Togari, et al., 2011). Other studies demonstrated the role of neighborhood social support such as neighborhood social cohesion and safety in the

structuration of SOC during adolescence. García-Moya, Moreno, and Bran-Lewensohn (2013) analyzed the associations among neighborhood assets, neighborhood risks, and SOC. Neighborhood risks were negatively associated with the SOC of adolescents. In contrast, neighborhood assets, especially relationships with significant adults, were positively associated with SOC.

2.6 Specific Resistance Resources (SRR)

Stressors create tension, which can or cannot be successfully solved. The management of tension might function as intervening variables or modifiers of effect. People are exposed to stress, however the resources available to cope vary according to the individuals. Antonovsky (1979) emphasized the importance of Specific Resistance Resources (SRRs), as he found both GRRs and SRRs frequently beneficial in specific circumstances of tension. SRRs are provided by social actions contributing to supportive social and physical environments in addition to health promotion. GRRs facilitate coping with stressors and strengthen the SOC having wide possibilities of application while SRRs have particular applications. Supportive environments should include both GRR and SRR.

Mittelmark, Bull, Daniel, and Urke (2017) discuss the conceptual and concrete differences between generalized and specific resistance resources. SRRs "... are many and are often useful in particular situations of tension. A certain drug, telephone lifelines of suicide-prevention agencies or an understanding look in the eyes of an audience to whom one is lecturing can be of great help in coping with particular stressors. But these are all too often matters of chance or luck, as well as being helpful only in particular situations" (Antonovsky, 1979, p. 99). The mechanism of GRR and SRR are connected. Antonovsky (1979) presented some GRRs that performed through physical and biochemical mechanisms (e.g., immune function), and enabled the acquisition of specific resistance resources (such as money). These GRRS/SRRs might be intrapersonal (e.g., ego identity, intelligence, and coping), social (interpersonal attachment and social affiliation), and/or cultural (guidance as how to handle stressors). Generalized resistance resources play two important roles in coping: they help determine the strength of SOC and enable the use of SRR. In Antonovsky's description of the Salutogenic Model of Health (1979), a strong SOC is shown acting on GRR and SRR with no differentiation between the two. Both

types of resistance resources are postulated to have a function in the avoidance of stressors, in the definition of stimuli, and in overcoming stressors. Mittelmark et al. (2017) noticed that SRR received little attention in the field of Salutogenesis. One possible answer for this fact is that all attention was focused on the measurement of SOC (Eriksson & Lindström, 2005) and its relationship to health and wellbeing (Eriksson & Lindström, 2006, 2007).

In the present research, the psychiatric treatment can be considered an SRR. The relationship between GRR and SRR is crucial because, through SOC, GRR empowers the individual to identify, find and apply the SRR in the direction that keeps tension away from turning into stress. Health promotion interventions must aim attention on both. The SRR can be understood as a tool, an instrument whose meaning is defined by the particular stressor that should be managed. A GRR is a general resource while the SRR is a particular tool. Usually, SRR is not put in action unless tension is seen to intimidate the individual. Specific Resistance Resources are an essential dimension of the practice of health promotion providing fair and reliable resources to support the health of individuals.

2.7 Sense of Coherence in Childhood

The base of mental and emotional health is built by early experiences of life in childhood (Miller & Kinsbourne, 2012). 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. Some authors examined the consequences of extreme family functioning on resilience, anxiety, and depression. 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). The emotional experiences of children occur while interacting with their parents. The role of parental characteristics, such as parents' emotional resources (attachment anxiety/avoidance and negative/positive affect) have been investigated to explain the differences in youth's SOC and coping resources. Associations between positive emotions and the availability of responsive caregivers are strengthened during infancy through behavior and emotions. Young children depend on their emerging capacities to interpret their

own personal experiences and understand what others are doing and thinking, as well as to interpret the distinctions between different responses to them (Braun-Lewensohn, Idan, Lindström, et al., 2022). High level of negative parental affection is a major risk for lower SOC and high level of positive affection is a major protective factor for higher SOC.

Several studies highlight the role of family climate in children's SOC across development. Findings from Olson (2000) revealed that adaptability and cohesiveness are two relevant characteristics for family optimal functioning. Cohesiveness refers to the closeness between the family members and adaptability refers to the capacity to adapt to the different stages and pressures of life (Olson, 2000). Children from cohesive families reported higher levels of SOC, lowest loneliness, and highest personal strength while children from rigid and non-cohesive families reported the highest loneliness and lowest levels of SOC (Sharabi et al., 2012). Considering children from rigid families, Kimura and Yamazaki (2016) studied physical punishment from parents towards their children with intellectual disabilities. They concluded that physical punishments were positively associated with parents' younger age, poorer mental health, lower parental SOC, children's younger age, birth order (firstborns), and disability type (autism/pervasive developmental disorder).

Other studies investigated the specific role of the mother's SOC on her children's level of SOC. As suggested by these studies, mothers with high coherence levels, who tend to perceive stressful situations as more manageable, may provide a more secure and consistent environment and teach their children more effective strategies to cope with stressors. Eli et al., (2016) examined the associations between SOC, maternal and child characteristics and found that SOC increased with mothers' education. Child gender and age were not associated with SOC. Hosokawa, Katsura, and Shizawa (2017) examined the relationships between mothers' SOC and their child's social skills among preschool children. The mother's childrearing style mediated the positive relationship between the mother's SOC and the cooperation, self-control, and assertiveness of the children. Kimura and Yamazaki (2016) studied mothers of children with intellectual disabilities and concluded that the most powerful predictor of SOC was maternal mental health. Togari et al., (2012) studied the association between the child's SOC, the mother's SOC, and the quality of family relationships. Results for boys revealed that mother's SOC was directly associated with

the child's SOC regardless of family relationships. For girls, mother's SOC was directly associated with family relationships and indirectly with the child's SOC through the child's participation in decision-making at home. Based on the above multiple types of research, it seems that improving mothers' SOC may contribute to many different aspects of their children lives. However, other variables related to the ability of youth to cope with stress should be investigated including the role of fathers.

The cognitive, social, and emotional characteristics of children are associated with the formation of their personalities and resources to face the challenges of the developing tasks (Thompson & Lagattuta, 2006). These capacities vary at different ages because children understand, manage, think, feel, and describe their experiences in the function of their developmental stages. These developmental differences are important in understanding the behavioral, emotional risks, and protective factors involved in children's lives. Honkinen et al., (2009) studied the association between childhood psychological symptoms and SOC. Destructive behavior at age 3, attention difficulty at age 12, attention problems, anxiety, depression, delinquency, and somatic complaints at age 15 predicted poor SOC at age 18. Based on the above, it is essential to examine the quality of the children's environments and relationships during their lives in order to avoid the risks of adversaries and promote the protective factors that may assist in positive mental and physical health. Jellesma, Rieffe, Terwogt, and Westenberg (2011) investigated the prospective relationship between SOC, trait intelligence, and children's somatic complaints. The results showed that higher emotional intelligence and stronger SOC were associated with fewer somatic complaints.

Across their development, children develop abilities to experience and express a diverse range of emotions, as well as the capacity to cope with and manage different feelings. The foundations of social competence that are developed in the first years are linked to emotional well-being and affect the child's ability to positively adapt in school later on and build relationships during adolescence and adulthood (Cassidy & Shaver, 1999). Close relationships with teachers and peers also predict children's SOC. Children who felt that their teachers were more available to them and more accepting, reported higher levels of SOC (Al-Yagon & Margalit, 2006). Efrati-Virtzer and Margalit (2009) compared children characterized by behavior difficulties, verbal and

physical aggression with children without behavior problems. Behavior problems were linked to social difficulties, peer rejection, lower academic achievement, and weaker SOC. Children with higher SOC were characterized by emotional self-regulation and fewer behavior problems at school. The authors highlighted that it was not clear if the poor SOC was the result or predictor of academic, social, and behavioral problems.

School setting is a significant factor in the development of hearing-impaired children. Speech intelligibility, loneliness, and SOC were studied by Most (2007) among deaf (hearing-impaired) children in individual inclusion and group inclusion. Speech intelligibility, loneliness and coherence in each educational setting revealed no significant relations among these measures for children in the group inclusion, whereas significant correlations emerged for children who were allocated in individual inclusion. Some researchers explored the influence of school characteristics among students with special needs emphasizing the prolonged academic challenges. These difficulties at school remain a continuous source of increased stress, endless day-to-day struggles with age-appropriate academic roles, and with social and emotional challenges that in turn may contribute to their lower SOC. Liberman et al., (2013) investigated children with developmental coordination disorder (DCD). Their findings showed that SOC, hope, and effort in children with DCD were poorer than typically developing peers. Children's SOC was associated with autonomy, social enjoyment, and leisure activities. Margalit (1998) investigated loneliness and coherence among Israeli preschool children with learning disabilities to identify the sources of social deficits before academic failure was established. Children with learning disabilities and at high risk for developing learning disabilities experienced higher levels of loneliness and lower levels of coherence than peers without such difficulties from the same preschools.

Forstmeier, Kuwert, Spitzer, et al., (2009) examined posttraumatic growth and SOC in German child soldiers of World War II. Traumas, recognition by significant others, and meaningfulness correlated significantly with posttraumatic growth but only recognition as a survivor by significant others and the meaningfulness component of SOC predicted posttraumatic growth. Van der Hal-van Raalte, Ijzendoorn and Bakermans-Kranenburg (2008) studied what factors facilitated adaptation to post-Holocaust life in children Holocaust survivors. Results indicated

that SOC acted as a protective factor buffering the impact of traumatic Holocaust experiences in old age (after 70 years) and moderated the association between traumatic experiences of war and posttraumatic stress. Silventoinen et al., (2014) analyzed the effects of the genetic and family environment during childhood on SOC in young adulthood. Genetic differences between individuals explained from a third to one-half of the variation of SOC. A favorable family environment not only modified the genetic and environmental variation of SOC but also correlated with SOC.

The field of oral health contributes to the research associating SOC with different characteristics of children. A systematic review conducted by Elyasi et al., (2015) analyzed the empirical evidence on the association between SOC and oral health behavior. The impact of SOC on performing positive oral health behavior was related to demographic and socio-economic factors. In addition, mothers' SOC influenced children's oral health practices. Fernandes et al., (2017) showed that SOC was significantly associated with the child's oral health-related quality of life. Nammontri, Robinson, and Baker (2013) tested the effect of a school-based intervention to enhance SOC on oral health-related quality of life (OHRQoL) in children. The findings offered experimental evidence that OHRQoL can be influenced by SOC. Children of mothers with high SOC had a lower prevalence of negative impact on oral health and quality of life.

Khatri, Acharya, and Srinivasan (2014) studied the relationship between mothers' SOC and oral health-related quality of life of children. Mothers' SOC and fathers' education were significantly associated with children's OHRQoL. Children of mothers with high SOC were 12.9 times as likely to have high OHRQoL than mothers with low SOC. Elvasi et al., (2018) explored the association between mothers' SOC and their preschool children's oral health behavior. Results showed that mothers' SOC was statistically associated with children's frequency of sugar consumption and dental visits. Children whose mothers had higher levels of SOC presented a lower intake of sugar and were more likely to visit the dentist for preventive purposes. Da Costa et al., (2017) showed that SOC was associated with self-perceived dental aesthetics. Those with a high SOC were more likely to perceive their dental aesthetics more positively. In those for whom no orthodontic treatment was needed, a low SOC was associated with a negative self-perception of dental appearance. Perazzo et al., (2017) found that a higher monthly household

income, history of toothache, and strong SOC of parents influenced the use of dental services by preschoolers. Viswanath and Krishna (2015) concluded that SOC had an inverse relationship with dental caries. Dorri, Sheiham, Hardy, et al., (2010) found that higher SOC was significantly associated with more frequent oral-health related behavior. This positive association remained significant after adjusting for sex and the father's education level. Boys had a significantly stronger SOC than girls. Mak, Ho and Law (2007) found that SOC showed a moderating effect on a child's autistic symptoms and parenting stress. Mothers with a sound SOC perceived lower stress than their counterparts when their children presented severe autistic symptoms. Parental confidence and acceptance of the child were found to partially mediate SOC and stress. Sagy and Antonovsky (2000) explored the relationship among socio-demographic variables, life experiences, and the development of SOC. The most relevant childhood experience related to adult SOC was participation in shaping outcomes or participation in decisions of the family. Both parental education level and gender were associated with SOC, directly and indirectly. In addition to examining family contexts and factors that could enhance or reduce personal SOC, there is research on family as a source to rely on when facing difficulties and stressful situations.

2.8 Sense of Coherence in Adolescence

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. The definition of adolescence 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).

It is along the years of adolescence that abstract thinking and cognitive processing develop with the enhancement of moral reasoning. Positive processes enable adolescents to explore the world,

gain competencies, and use cognitive skills (Damon, 2004). The ability to think abstractly, reflect, make hypotheses, and observe their own cognitive activity enable adolescents to plan, anticipate consequences, consider the perspective of others, and find alternative solutions to problems (Braun-Lewensohn, Idan, Lindström, et al., 2022). These abilities may influence the sub-components of sense of coherence contributing to different coping strategies (Braun-Lewensohn, Idan, Lindström, et al., 2022). Adolescents' academic success, social competence, and effective coping contribute to well-being and adjustment, while social and behavioral difficulties may be considered risk factors for maladjustment. García-Moya, Rivera and Moreno (2013) analyzed the effect of SOC on the main components of bio-psycho-social health in adolescents. Results supported the association between SOC and positive health outcomes. Better self-rated health, higher quality of life, lower frequency of somatic and psychological complaints and life satisfaction were associated with a higher SOC. Research on adolescents with heart disease contributed to the understanding of associations between SOC and other variables such as quality of life, anxiety and illness cognition. Neuner et al., (2011) studied SOC as a predictor of quality of life in adolescents with congenital heart defects. The results showed that SOC was positively associated with overall well-being.

Wang, Hay, Clarke, et al., (2014) evaluated health-related quality of life in adolescents with heart disease, their understanding of their congenital heart disease, its severity, and its relationship with anxiety. The adolescents' health-related quality of life was positively correlated with low anxiety and depression, good knowledge of their cardiac condition, feelings of optimism, adequate social support, and a strong SOC. Nio (2010) identified the influence of illness cognition and background factors on the SOC among junior high school and high school students with congenital cardiac disease. Results showed that SOC was higher in boys than in girls and higher in junior high students than in high school students. Adolescents with congenital cardiac disease had higher SOC than healthy students. Higher SOC was found among those who scored lower on the illness cognition scale (hardships resulting from limitations for illness, desire to be understood by others, anxieties about the state of the disease and possibility of death and not wanting people to know of one's disease).

Due to the need for independence, it seems that tension between regulation of behavior and sensitivity to positive environment makes the response of the individual more complex during the period of adolescence (Somerville et al., 2011). Smith, Elder, Storch, et al., (2015) investigated the relationship between stress and SOC in typically developing siblings of individuals with pervasive developmental disorder. Sibling adjustment was strongly associated with SOC. Moksnes, Espnes, and Haugan (2014) investigated the association between stress, SOC, and emotional symptoms (depression and anxiety) and found that SOC was strongly and inversely associated with emotional symptoms, especially anxiety in girls. SOC also moderated the association between stress related to peer pressure and depressive symptoms in both genders. Nielsen and Hansson (2007) analyzed the association between SOC, health, and stress in adolescents. Girls with a low SOC who were exposed to stress reported recent illness twice as often as unstressed girls. For boys, there was no such interaction. The relationship of SOC and stress is studied by several researchers in adolescents living in or escaping from war zones. Braun-Lewensohn, Sagi, Sabato et al., (2013) investigated whether adolescents disengaging from a war zone used SOC and the sense of belonging to a community as a coping resource. Results suggested that both SOC and belonging to a community were weakened immediately after the disengagement; however, SOC recovered five years after the event. Furthermore, a few months and 5 years after the disengagement, SOC and sense of belonging to a community had more explanatory power of stress reactions than during the acute hstate. Abu-Kaf, Braun-Lewensohn, and Kalagy (2017) compared coping resources and stress reactions among adolescents from two ethnic groups in southern Israel (Jews and Bedouin Arabs) during a period of political violence. Bedouin Arab adolescents reported lower levels of SOC, higher levels of anger, and higher levels of individual and collective hope showing that the stress caused by political violence lowers SOC. Besides that, cultural differences were found to affect the ability of SOC to predict anxiety. Ebina and Yamazaki (2008) described the social contexts of adolescents with stronger and weaker SOC living in the war regions of Croatia. All participants with high SOC said that their childhood was emotionally and socially stable. However, the individual may tend to depend on others to judge the meaningfulness of what happens, leading to confusion without a secure childhood emotional base and confidence in one's abilities and existential values.

Bazynska, Bronowska, Namyslowska et al., (2002) analyzed sense of coherence in adolescents who were hospitalized with psychiatric problems. The SOC of these adolescents was significantly lower than the SOC of their siblings, mothers, and fathers. Sensitivity was significantly lower in neurotic patients than in psychotic and eating disorder patients. Ristakari et al., (2009) examined associations between early childhood psychopathology and family factors and later SOC. Low parental education and living with other than two biological parents at age 8 was associated with low SOC 10 years later. Boys with internalizing and depressive symptoms at age 8 were at risk for lower SOC at follow-up. Comorbidity of internalizing and conduct problems had the strongest association with low SOC. Gustafsson, Nelson, and Gustafsson (2010) examined psychiatric symptoms and SOC in adolescents exposed to abuse. Significant correlations were found between psychological symptoms and SOC. The correlations were most consistent for internalizing (described as inner-directed distress) and externalizing symptoms (described as outer directed distress generating conflict in the environment of the individual). The role of SOC in modifying the long-term development of ADHD symptoms was studied by Edbom, Malmberg, and Lichtenstein et al., (2010). Results showed that higher SOC at age 16 was associated with less symptoms of ADHD at age 21.

The association between a weak SOC and subsequent risk of not receiving social and healthcare benefits during young adulthood was investigated in longitudinal research by Würtz, Fonager, and Mortensen (2015). Results showed that girls who had an initially weak SOC had a significantly increased risk of being unemployed, required social assistance, and sickness benefit later on. For boys, only minor protective and non-significant differences were found. Jaakkola et al., (2013) investigated the association between dental fear and SOC among adolescents. A weaker SOC was found among those reporting high dental fear more often than those with none to moderate dental fear, also when adjusted for gender and education.

García-Moya, Suominen, and Moreno (2014) examined the role of SOC, the prevalence of bullying victimization, and its impact on physical and psychological complaints. Results showed that adolescents with a weak SOC were significantly more likely to suffer from bullying regardless of the type (physical versus nonphysical) and means (traditional versus cyberbullying). Bullying victimization had more negative effects on adolescents who had a poor

SOC whereas in adolescents who had a strong SOC the psychological complaints were weaker. The medication used for headaches among adolescents was studied by Koushede and Holstein (2009). Analyses adjusted for age, social class, the experience of bullying, and headache frequency showed increasing medicine use by decreasing SOC. No association was found between SOC and medicine use among participants with scarce experience of headaches but a significant association among participants with weekly experience of headaches.

Interactions with teachers and peers during adolescence have a profound impact on quality of life. García-Moya, Rivera, and Moreno (2013) examined the role of school variables and SOC in the explanation of health. School-related stress and SOC mediated the influence of support from classmates and teachers on health, and SOC had a direct effect on stress, therefore a supportive school climate and SOC are relevant to adolescents' health. Torsheim, Aaroe, and Wold (2001) tested the role of SOC in the relationship between adolescents' school stress and subjective health complaints in grade 8 and 10 students. The association between SOC and stress grew weaker with age, whereas the direct association between SOC and health complaints grew stronger. The main effect of SOC accounted for between 39% (11-year old's) and 54% (15-year-old) of the variance in subjective health complaints. Ying, Lee, and Tsai's (2007) study confirmed that SOC mediated the effects of parent and peer relationships on depressive symptoms in addition to moderating the effect of college challenges on depressive symptoms.

Braun-Lewensohn, Sagy, and Roth (2011) found SOC to be a powerful resilience factor in acute stress situations in adolescents. According to the review by Braun-Lewensohn, Idan, Lindström, et al., (2017), SOC is considered a protective factor for adolescents in different cultures. SOC tends to act as a protective personal variable against substance use during adolescence, but the influence of the peer pressure group seems to moderate this effect. García-Moya, Jimenez-Iglesias, and Moreno (2013) analyzed the relationship between SOC and substance use. A strong SOC seemed to reduce the likelihood of tobacco use and being drunk, but it was not associated with being a current drinker. Therefore, the protective effect of SOC depended on the type of substance and the frequency of the addictive behavior. Mattila et al., (2011) found that a strong SOC in adolescents was significantly associated with less use of alcohol, being a non-smoker, better care of oral health, and better social competence. Glanz, Maskarinec, and Carlin (2005)

showed that higher SOC predicted a significantly lower risk of lifetime smoking and smoking in the past 30 days. SOC was most strongly related to smoking among Filipino, Hawaiian/Pacific Islander, and White students; Japanese students experienced the strongest protective effect of SOC for past-month smoking.

Evans, Marsh, and Weigel (2010) intended to promote SOC, test models of risk, protection, and resilience in 8th and 10th grade adolescents. Their results suggest that protective factors were associated to higher SOC while risk factors were associated to lower SOC. Krause (2011) conducted two studies and interventions intended to promote SOC in educational contexts associated with self-concept, self-worth, subjective well-being, and health behavior patterns. Children with an immigration background needed help to identify their resources and strengthen their self-worth and feeling of belonging to the school, and to society. Mayer and Boness (2011) conducted interventions to promote SOC in the educational context by a didactic model (ombuds model) aiming to benefit salutogenesis and SOC. Their results showed increasing transcultural competencies as well as improving comprehensibility, manageability, and meaningfulness of students in learning environments.

Parents' psychological resources, as well as their developmental histories, also influence the quality of their children's development. Studies investigated diverse parental resources such as parents' psychopathology, parents' personality, and parents' patterns of attachment. Kerstis, Engström, Edlund, et al., (2013) examined the association between parents' post-partum depressive symptoms, SOC, and perception of their child's temperament. Parents with depressive symptoms had poorer SOC and perceived their child's temperament as more difficult than parents without depressive symptoms. Feldman, Einav, and Margalit (2018) investigated the role of SOC, hopeful thinking and feelings of loneliness in family cohesion and effort. The results supported the contribution of family cohesion and the mediating role of SOC and hope (as protective factors) and loneliness (as a risk factor) in predicting students' school efforts. García-Moya, Rivera, Moreno et al., (2012) found no significant gender differences in SOC in youth. Higher levels of SOC were found in younger compared to older adolescents. Family variables explained 18% of SOC, with affection, good communication, and parental knowledge being the

most relevant variables. The positive association between parents and family wealth had a significant role in explaining SOC.

Adverse experiences early in life, particularly for vulnerable children, have been shown to predict the emergence of later physical and mental health problems (Edwards et al., 2003). The contribution of individual and family variables for the prediction of loneliness and SOC were examined by Sharabi, Levi and Margalit (2012). Poor childhood living conditions, particularly economic difficulties, diseases, alcohol or smoking, and family conflicts may affect the adult SOC through a negative impact on self-esteem and life attitudes that may lower the levels of SOC. Lundberg (1997) analyzed the degree to which a low SOC is based in childhood experiences. Childhood family size and the experience of a broken home were unrelated to SOC later in life, while economic hardship had a small and indirect effect, mediated via class position in adulthood. Only dissension in childhood family was found to have a direct and modest effect on SOC.

Multiple studies examine the relations between youth's SOC, perceptions of teachers' support, peer friendships, and school experience, revealing complex interactions. Studies of schools focus attention on the effect of the school scenery on SOC and its contribution as a mediating factor. Throughout the school years, adolescents are faced with a range of increasingly difficult challenges related to their academic tasks. García-Moya et al., (2017) analyzed the relationships with parents and teachers (contextual factors) and prosociality and hyperactivity-inattention (individual factors) as precursors of SOC in 15-18 years. Results showed that both contextual and individual factors made significant contribution to the adolescents' SOC. Kristensson and Ohlund (2005) tried to determine if differences in grades and educational track in upper secondary schools represented differences in the ability of the individual to deal with stressors and aggression. They found that salutogenic resources played an important role in coping with stressors and maintaining psychological well-being among adolescents.

One last aspect to be discussed associated with adolescence is the stability of the SOC. Antonovsky (1987) assumed that SOC develops during childhood and early adolescence and stabilizes in early adulthood. Difficult life experiences, such as raising a child with any kind of disability may affect the level of parental SOC. Antonovsky and Sagy (1986) stated that SOC

should increase throughout adolescence, and stabilize at the end of this period. “I have often committed myself, orally and in writing, to the hypothesis that the strength of a person’s SOC is more or less stabilized by roughly the age of 30, that is, when one has been in the normal work and family situation of one’s culture and subculture for a number of years.” (Antonovsky, 1996, p. 175).

However, studies that addressed the issue of age and stability of SOC revealed inconsistencies. Some researchers found an increase in SOC during adolescence (Kuuppelomaki & Utriainen, 2003; Ying et al., 2007; Nilsson et al., 2010) while some results suggested lower SOC as children became older (Apers et al., 2013; Ayo Yusuf, Reddy, & Van Den Borne, 2008; García-Moya et al., 2013; Kristensson & Ohlund, 2005; Moksnes, Espnes, & Lillefjell, 2012). Others did not find differences among age groups (Honkinen et al., 2008) and claimed the stability of SOC during adolescence (Kroninger-Jungaberle, 2013). There are also gender differences in this age group. Honkinen et al., (2008) found that SOC of males at age 15 and 18 was significantly higher than females. Other factors also might influence SOC of adolescents such as living with both parents (Honkinen et al., 2008). SOC is probably different during adolescence than in childhood due to developmental changes, transitions, and challenges (Eriksson, 2007).

Antonovsky’s assumption finds no support in subsequent empirical research. His hypothesis was based on the fact that those experiences that affect the SOC have already happened around this period of life (Antonovsky, 1987, p. 123).

2.9 Sense of Coherence and Mental Health in Youth

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. Youth mental health is priority since it affects the next generation (WHO, 2017) predicting psychopathology and future mental problems (Colman et al., 2009). Therefore, interventions to promote mental health should focus on children 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). Self-harm, eating disorders, sexual problems and suicide may appear as negative strategies for coping with mental disorders (Suchert et al., 2015), however a sound SOC can contribute as a beneficial factor during childhood and adolescence

while a poor SOC may be associated with a wide range of psychological/psychiatric disorders in youth. Previous researches in adult population found SOC negatively associated with different symptoms of psychopathology such as depression, anxiety (Blom et al., 2010), posttraumatic stress (del-Pino-Casado et al., 2019), anguish and stress (Grayson, 2008), hyperactivity and inattention (Edbom et al., 2010; Rodrigues de Oliveira, 2021b). Länsimies, Pietilä, Hietasola-Husu and Kangasniemi (2017) conducted a systematic review on adolescents' SOC and other related health variables concluding that SOC was associated to mental health and negatively associated with psychopathological symptoms similar in magnitude to the relationship found in adult samples. Sense of coherence in adulthood is dependent on intimate and social relationship during childhood which is connected to the ability to recognize emotions and develop closeness. Jellesma, Rieffe, Meerum Terwogt et al., (2011) investigated children's SOC, emotional intelligence and somatic complaints. Results showed that higher emotional intelligence and sound SOC were related with less somatic complaints.

Somatic complaints are frequent in childhood often with a psychological and not organic background. Negative situations evaluated as harmful and not solved later on may be reflected in a poor SOC as far as a proper understanding of an emotional experience is necessary for an effective coping (Antonovsky, 1993). A lower SOC is associated to a lack of ability to handle and find meaning in life situations. Jellesma, Rieffe, Terwogt and Kneepkens (2006) compared the emotional functioning of school children reporting different levels of somatic complaints and the way general mood such as anger, happiness, fear, sadness, depression and SOC influenced these somatic complaints. They concluded that the studied variables were relevant for differentiating the groups of children with diverse levels of symptoms highlighting the existence of emotional difficulties in children reporting somatic complaints.

A low SOC is also associated with a wide range of psychological disorders in childhood and adolescence. There are two types of psychological symptoms, internalizing and externalizing problems. Conflicts with others, aggressive and delinquent behavior are examples of externalizing problems. Hyperactivity and conduct disorder are considered as antecedents of externalizing problems. Oppositional/conduct disorder and breaking-rule behavior in childhood have showed a predictive association with problems in adolescence (Hofstra et al., 2002). It

seems that SOC is associated with both externalizing and internalizing psychopathology. Externalizing problems have received more attention and consequently more research than internalizing problems since internalizing issues result from subjective perceptions of internal hardship and may not be noticeable by external observers (Sourander & Helstelä, 2005). Edbom et al., (2010) found that high SOC at age 16 acted as a protective factor against symptoms of inattention and hyperactivity five years later in a sample of 156 twin pairs diagnosed with ADHD. Behavioral problems and attention-deficit/hyperactivity disorder (ADHD) create difficult interactions and ruin social support that could help to cope with the environment. Internal stress emerging as anxiety, depression, somatic complaints and social withdrawal are understood as internalizing problems having negative consequences on physical health, academic performance, self-esteem, social competence and future psychological adaptation (Sourander & Helstelä, 2005).

Brawn-Lewensohn et al., (2017) found that high scores of SOC were related to decrease in stress, and less internalization and externalization problems in youth. Early psychopathological symptoms such as anxiety and depression during adolescence appear to predict lower sense of coherence (Blom et al., 2010). Based on the above findings, it is important to study which type of psychological problem has a strong negative effect on SOC development and thus function as risk factors for low resilience in adulthood. Schäfer, Sopp, and Fuchs et al., (2021) conducted a meta-analysis quantifying the association between SOC and psychopathology from childhood to early adulthood. They found a negative association between SOC and psychopathological symptoms even in earlier phases of life. A stronger SOC was associated with less severe psychopathology. The association between SOC and psychopathological symptoms increased with age, however was inclined to be stronger for internalizing symptoms, loneliness and depression. SOC, depression and anxiety in adolescents were studied by Moksnes, Espnes and Lillefjell (2012). They found associations that support the positive effects of salutogenic factors to emotional health in adolescents. Depression and anxiety were inversely associated with SOC. Boys had higher SOC than girls and this was especially true for the 15–16-year-old group. It seemed that depression and anxiety was strongly predicted by SOC especially in girls.

Besides anxiety and depression, Moksnes, Espnes and Haugan (2014) investigated the association of stress and SOC as well as the moderating role of SOC between emotional symptoms and stress in adolescents. Females had more stress than males associated to home life, academic achievement, peer pressure, and emotional symptoms. Stress and anxiety about school achievement and stress from peer pressure was associated with depression for males while stress from peer pressure, romantic relationships and school stress was associated with depression for females. SOC moderated the association between depression and stress related to peer pressure in both genders proving confirmation for the association of stress, SOC and emotional symptoms in adolescence. Honkinen, Aromaa, Suominen et al., (2009) found that emotional problems such as anxiety, depression and somatic complaints reported by adolescents explained a lower SOC more than problems reported by parents. Self-report in adolescence greatly improves the early identification of youth at risk of mental health. The SOC scale can be used for screening to enhance mental well-being. Carlén, Suominen and Lindmark et al., (2020) showed that SOC is a clinically sensitive variable to predict mental health during adolescence. They found that SOC scores in the symptoms-free group were 10 units higher compared with the symptomatic group confirming the validity of SOC as a predictor of mental health in adolescence. High SOC was associated with fewer psychiatric symptoms (Blom et al., 2010).

Ongoing developmental changes have different effects on youth which makes it relevant to conduct longitudinal epidemiological studies to provide information on trends in youth well-being which can be used to develop mental health and social policy. Kronström, Multimäki, Ristkari et al., (2021) performed a 10-year longitudinal study among 18-year-old Finnish males during the military call-up process. They studied time changes in psychopathology, bullying, suicidality and SOC. Minor mental health problems (such as emotions, concentration, behavior, etc.) decreased while severe mental health remained stable over the course of the follow-up. Reported suicidal thoughts decreased however the number of subjects bullying others increased. No significant changes were observed in domains such as anxious/depressed, intrusive, aggressive behavior, withdrawn and delinquent behavior. SOC remained stable with no differences in the mean values. The distribution of SOCS-13 scores were identical and no statistical significance was detected in the variances between initial and final measurements.

Koposov, Ruchkin and Eisemann (2003) researched the function of SOC as a mediator between violence exposure and psychopathology in Russian juvenile delinquents. Their results suggest that higher SOC may reduce the levels of psychopathology. Researches in child psychiatric epidemiology show considerable stability of psychiatric symptoms from childhood to early adulthood (Mesman, Bongers and Koot, 2001; Mesman & Koot, 2001; Moffitt & Caspi, 2001). Hofstra, Van Der Ende and Verhulst (2002) used a longitudinal study of 14 years to examine the adult outcomes of psychopathology in an epidemiological sample of children and adolescents. Empirical evidence endorses a relationship between SOC, health behavior and well-being in adolescence (Honkinen et al., 2005). Based on the above findings it is important to study which type of psychological problems have a strong negative effect on SOC development and thus function as risk factors for low resilience in adulthood.

2.10 Chapter Summary

In this chapter, the relevant literature on salutogenesis and the conceptualization of SOC has been presented. The chapter started with the origins of salutogenesis and salutogenesis health concepts. The conceptual framework of Antonovsky's theory was discussed emphasizing the relevance of the enhancement of the quality of life. The main chronological steps of the creation of this groundwork and the way that the word salutogenesis was coined, defined, and developed were also described. Generalized Resistance Resources were disclosed as all resources that influence the strength of SOC and enable the use of SRR. Self-esteem and social support as representatives of General Resistance Resource were introduced. Specific Resistance Resource was understood as an instrument whose meaning is defined by the particular stressor that should be managed. Afterwards, the literature on SOC in the field of childhood, adolescence, and mental health problems was reviewed. The development of SOC as a complex, interactive, and interdependent process and the role of parents, teachers, and school contexts in the development of SOC was also considered.

Chapter 3: Salutogenesis Applied to Education (Teaching and Learning)

The inclusion of salutogenic principles in education deepens and broadens the understanding of the teaching and learning process in a healthy way and opens the potential to create a sound educational environment characterized by the prevention of burnout, improved physical and

mental health and higher levels of achievement. The aim of this review is to fill the lack of comprehensive information regarding the relationship of salutogenesis, sense of coherence and the process of teaching and learning.

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; Van der Westhuizen, Beer & Bekwa, 2011; Salamonson, Ramjan, Nieuwenhuizen, et al., 2016), coping (Colomer-Pérez, Chover-Sierra, Gea-Caballero, et al., 2020; Kristensson & Öhlund, 2005; Modin, Östberg, Toivanen, et al., 2011), health assets (Colomer-Pérez et al., 2020), school performance (Oliva, Cunha, Silva, et al., 2019), psychological strength (Van der Westhuizen, Beer & Bekwa, 2011), self-regulation (Salamonson et al., 2016), social support (Warne, Snyder & Gådin, 2017; Darling, McWey, Stacy, et al., 2007), contextual factors or burnout (Shankland, Kotsou, Vallet, et al., 2019; Graner & Cerqueira, 2019); Hochwälder & Saied, 2018) to cite some. However, they explore specific aspects of the students, the teachers, or the systems individually lacking the comprehension of the whole picture. The present review aims to contribute to the literature by shedding light on health and education processes from a broader salutogenic perspective.

Political changes, high pressure, and dissonance between the expectations and real experiences can be used to describe some educational contexts characterized by stress and burnout among academics (Kinchin, 2019) and students (Shankland, et al., 2019). This calls for concern of the physical and mental health of all participants in the educational system. The environment characterized by tension, stress, disorganization of feelings, and opposition may affect crucial aspects of the teaching experience resulting in an unsound pedagogical context. The consequence is a protective withdrawal of teachers defined as pedagogic frailty (Kinchin, 2019). Some countries recognized students' distress as a public health concern (Dyrbye, Thomas & Shanafelt, 2006). First-year university students are especially sensitive to high-risk behaviors such as addiction (Boujut, Koleck, Bruchon-Schweitzer, et al., 2009), eating disorders or thoughts of suicide (Boujut, Koleck, Bruchon-Schweitzer, et al., 2009). For both new academics and first-year students, the hardship to adjust to academic life involves higher levels of stress and results

in avoidance behavior, loss of interest, or negative attitude. The set of features described above is known as academic burnout syndrome (Shankland, Kotsou, Vallet, et al., 2019).

The most relevant contribution of salutogenesis to science was the commitment to finding the origins of health. According to Antonovsky (1996), health is not a permanent position but a continuum in which the individual moves towards the pole characterized by well-being. The way the individual reacts to stress determines the ability to manage tension and stay healthy. The definition of health in the salutogenic framework involves understanding life even in its chaotic manifestations and using the available resources. SOC is a construct created by Antonovsky (1979; 1987) related to the feeling that life will provide the resources to overcome adverse experiences. The ability to maintain well is related to the capacity to trust that there is a meaning in the circumstances and to keep faithfully in the direction to the positive pole of the continuum of health. The individual's ability to comprehend, manage and give meaning to life is expressed by the components of the SOC which are comprehensibility, manageability, and meaningfulness. The ability to face challenges, recognize and use the resources is highly related to a sound SOC as well as to the Generalized Resistance Resources. SOC involves values, behaviors, feelings, thoughts, and a full style of life that can improve or doesn't as a result of overcoming stressful situations (Garista, Pocetta & Lindström, 2019).

The inclusion of the salutogenic principle in education deepens and broadens the understanding of the teaching and learning process in a healthy way and opens the potential to create a sound educational environment characterized by the prevention of burnout, improved physical and mental health, resilience, optimism and higher levels of achievement. The following questions arise: What are possible connections between salutogenesis and education? How are current issues of the teaching and learning process dealt with in the salutogenic approach? What are the contributions of the salutogenic approach to solving the contemporary problems faced by students, teachers, and educational staff in the educational environment? What are the main challenges of the researchers in the application of salutogenesis to health and education?

3.1 Search Procedures

A literature search was carried out which included articles discussing the connection between education and SOC with the cutoff date of July 2020. The search procedures consisted of the

following three steps: preliminary search, replication verification, and finalized search combining keywords in the following electronic databases: Web of Science and Scopus. The preliminary search was performed by the author, the second and third procedure was performed with the help of a professional librarian. The search words were the following: sense of coherence, salutogenesis, education, school, academic performance, achievement, students, and their combinations.

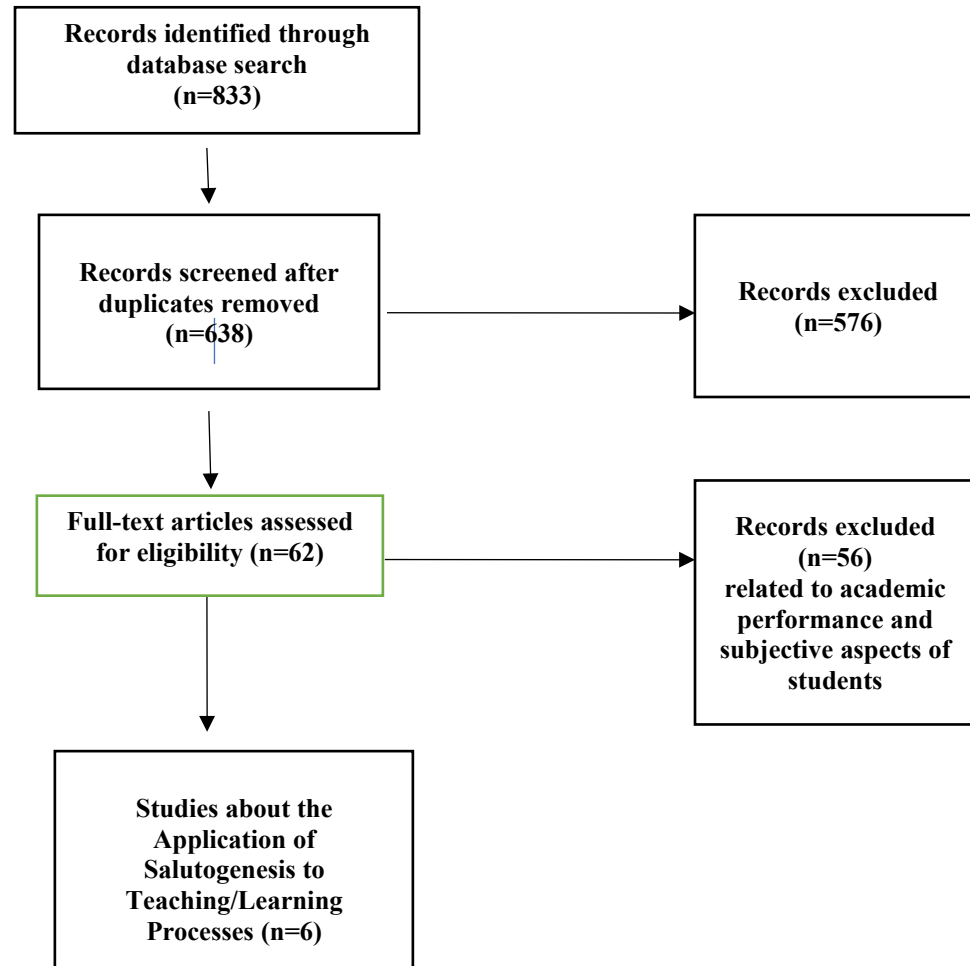
The preliminary search procedure included studies published in English or Portuguese and resulted in 833 articles. After duplicates were removed 638 articles remained. These were screened by reading the title and the abstract. Exclusion criteria were the following: no reference to education, conducted in non-educational environment, or did not include the salutogenic approach. 62 articles were chosen for full-text review. The original theme for the literature review was the relationship of salutogenesis and academic achievement, the later operationalized through school grades. The next step involved grouping the articles into three themes: salutogenic teaching/learning process, academic performance, and subjective aspect of education. 56 articles out of the 62 were related to academic performance and subjective aspects of students. The final 6 articles related to salutogenic teaching/learning process were included in the present review (Figure 1). A standardized data extraction sheet was developed. Data retrieved included author/year, country, aim, education level, main concept, the core idea, educational outcome, and conclusion.

3.2 Education and Health Promotion

According to Antonovsky (1987), SOC develops mainly during the first years of life as a result of the relationship between the child and the caregivers. During adolescence and adulthood, the relationship with friends, teachers, school, community and work also become important. SOC might be the result of all life experiences but three factors seem to be more important than others. These are consistency, balance between underload and overload and participation in decision making (Antonovsky, 1987). In general, a healthy SOC will develop if the individuals experience meaning in their relationships and have the ability to identify proper resources to handle life issues. Based on the above, health promoting schools, teaching and learning processes

rooted in salutogenesis may perform a valuable contribution to the development of SOC taking advantage of the crucial years that children and adolescents spend in education.

Figure 1: *Flow Diagram of Data Search/Salutogenesis Applied to Education*



The concepts of health and education are intertwined and mutually subsidized (Garcia da Costa, 2017). It is valuable to interpret the concept of health as a result of a broader idea resulting from a permanent learning throughout life (Antonovsky, 1987). These complementary concepts are often found together inside the Health Promotion movement, which culminated with the creation of the schools compromised to promote health. The Council, the Commission and the European Regional Office of the World Health Organization (WHO) established the Network of Health Promoting Schools of Europe in 1991. The approach of Health Promotion directed to the educational context combine health education along with teaching connected with actions

committed to improve the well-being and health not only of students but of educational workers as well. It aims to transform the educational environments into a sound place to learn and work.

The WHO described health promoting schools (for 5 to 18-year-old youth) as ones that prioritize health and learning in all activities, provide a proper environment, focus on health-related behaviors, attitudes, skills, knowledge, beliefs and values and engage community leaders in this process. The need of individual participation, comprehension and commitment are highlighted in the distinct models of health promotion (Nilsson & Lindström, 1998).

Educational theories and salutogenesis combined created salutogenic schools characterized by meaningful learning, proper curriculum and teachers encouraging students and each other (Antonovsky, 1993). This rationale is the foundation of the salutogenic schools which increase the comprehensibility, manageability and meaningfulness sub-components of SOC (Nilsson & Lindström, 1998; Lindstrom & Eriksson, 2011).

A healthy university develops health potentials in its particular context, promotes wellbeing and positive health, strengthens the resources available and enables individuals to master their health determinants. This description characterizes universities that create a supportive environment for students and teachers going through life experiences that will result in independence and adequate life skills (Dooris, Wills & Newton, 2014). Healthy universities rely on a working environment that supports health potential, integrates health in the culture, teaching, learning, research and knowledge production (Baríc, 1993). The Healthy Universities movement, inspired by the Ottawa Charter for Health Promotion (WHO: An International Conference on Health Promotion, 1986), understands health as a multidimensional and multi-layered concept composed by physical, mental, emotional, spiritual and social dimensions that result from the interplay between people and their environment (Dooris, Wills & Newton, 2014). The wellbeing of students and educational workers in a healthy university can be enhanced, protected and promoted through salutogenic policies and practices, thus increasing the health promotion of teaching and research (Tsouros, Dowding, Thompson et al., 1998). Since health is not the main goal of the universities, it's crucial to guarantee that well-being will be embodied in its environment. A good example of a healthy university policy is to promote learning and education for global citizenship (Dooris et al., 2014).

3.3 Benefits of the Salutogenic Theory to Pedagogic Health

The concept of health as a continuum and the resources that contribute to wellness are the focus of salutogenesis. The ‘salutogenic functioning’ means the successful way in which people adjust themselves to tension and stress in their daily lives (Mtsweni, 2007). Considering salutogenesis as a foundation for pedagogic health widens the understanding about the process of teaching and learning in a healthy way and requires attention of other concepts related to cultural, political, social and individual dimensions that will create a sound educational environment.

The salutogenic approach improves resilience (Kinchin, 2019) in both individual and systemic dimensions and creates a base for researchers to help students, teachers, schools and universities to reach optimal pedagogic health. Resilience is a highly debated concept understood as a process of dynamic and positive adaptation to adverse life circumstances involving psychological, social, cultural and environmental resources (Brewer, Kessel, Sanderson et al, 2019). Occurring when individuals face adversity and resulting in learning and improvement (Delany, Miller, El-Ansary, et al., 2015), resilience is deeply associated with sense of coherence and highly relevant in the educational environment. Both resilience and sense of coherence bring the core idea of being strengthened throughout life (Reyes, Andusyszyn, Iwasiw et al., 2015).

The learning process in a salutogenic school and university can be understood as an endless reciprocal exchange among students and the educational context in which meaningful standards surface and the students are supported to shape sound attitudes to a healthy life (Lundgren, 2002). Sound physical and mental wellbeing and a high enthusiasm in learning among Japanese students were predicted by a healthy SOC (Togari, Yamazaki, Sasaki Takayama et al., 2008). According to Shankland, Kotsou, Vallet, and colleagues (2019), SOC presents a mediating role between university students’ mental health, and symptoms of burnout related to daily hassles, emotional exhaustion and cynicism. Therefore, it would be useful to help students focus on the positive aspects of life in order to change what they consider as daily problems. Higher levels of well-being, optimism, self-efficacy and lower levels of distress and burnout are associated with SOC of students in healthy universities environment (Bracha & Bocos, 2015; Posadzki, Stockl, Musonda et al., 2010).

3.4 Salutogenic Models in the Literature

Six models can be found in the literature which provide specific examples of the inclusion of the salutogenic theory and health promotion in education (Rodrigues de Oliveira & Kiss, 2021). The models are summarized in Table 1.

The six models will be introduced and summarized below:

The Team Ombuds Model (Mayer & Boness, 2011)

Inspired by the idea of Ombudsman – who defends the law and the interest of the citizens and promotes citizenship - Mayer and Boness proposed a didactic model designed to help the formal educational system to enhance integration, autonomy, quality of teaching, health of students and improve leadership skills. Health conception is composed by the ability of performance, self-realization, and meaningfulness, psychological and physical wellbeing. The model aimed to support students at the crucial time of the development of SOC (Antonovsky, 1987) with specific interventions to help them to overcome critical situations during elementary and high school education. Characterized as a long-term intervention throughout all school years, the model promotes SOC as a permanent educational objective.

The educational environment in this model should be characterized by consistency, safety, and social support. The main idea for the tOmbuds model is citizenship because it raises the desire in children to understand and defend the rights and obligations that they all have in relation to each other. Since responsibility, independence, and respect for others comprise the SOC in relationships, SOC can greatly benefit from comprehension, encouragement, acceptance, collaborative learning and acknowledgement among teachers, students and peers. The emphasis is on transcultural competence operationalized through appreciation of cultural differences, and the ability to solve conflicts across cultures and to decode verbal and non-verbal communication. The model aims to enhance comprehensibility, manageability and meaningfulness in the relationship of students and educational professionals.

Table 1. *Models in the literature applying Salutogenesis to the practice of education*

Author/ Year	Country	Aim	Education Level	Main Concept	Core Idea	Educational Outcome	Conclusion
Lindstrom & Eriksson (2011)	Sweden	Extends the concept of health education and health literacy toward a lifelong healthy learning concept	not specified	Literacy	Approach life as a novice in order to learn more about oneself, others and life as a whole	Health literacy involves participation, empowerment, and action competence	Systems that develop a strong SOC seem to make people live longer and more inclined to healthier behaviors
Eriksson (2019)	Sweden	Application of salutogenic theory and model of health to research supervision of postgraduate students	University post-graduate	Sustainability	Investment in sustainable relationship between teachers and students	Doctoral supervision involves mutual learning processes between supervisor and doctoral student	Better understanding of the learning process (comprehensibility), better research skills (manageability) and the creation of meaningful supervision meetings (meaningfulness)
Mayer & Boness (2011)	South Africa	Presents a didactic intervention in educational systems to promote SOC and transcultural competence	Elementary and high school	Citizenship	Raise the desire in children to understand and defend the rights and obligations that they have to each other	A strong SOC is associated with positive school performance, achievement, ability to manage conflicts, transcultural competences, well-being	Increases transcultural competences and improves comprehensibility, manageability and meaningfulness within students
Garista, Pocetta and Lindström	Italy	Discusses the use of drawings in the framework of	University post-graduate	Integration	Promote self-expression and improve emotional recognition of	Drawings support teaching, health promotion, cope,	Drawings favor salutogenesis and an environment which enhance salutogenic learning.

(2019)		salutogenic and health promotion applied to the learning processes in higher education			experiences which might be difficult to express verbally	integrate new knowledge and help students to express latent aspects of reality	
Kinchin (2019)	United Kingdom	Use of pedagogic frailty and salutogenesis to analyze issues in higher education academics and improve the health of the system	University	Resilience	Uses teaching practice as an opportunity for self-awareness and reflection, bringing the possibility to prevent weakness	Salutogenesis works by creating resilience and a timely potential to add clarity and a sense of coherence to the teaching labor	The contribution of salutogenesis to pedagogic frailty makes the model more responsive to university managers as a developmental tool and helps to treat the mental health concern of students and teachers
Garcia da Costa (2017)	Brazil	Presents and compares Waldorf method to Salutogenesis	Elementary School	Healing	Educates to assist personal transformation, boost personal growth and to be a source of emotional security supporting the pupil's transformation to reach the highest version	Salutogenesis and Waldorf pedagogy help students in integral development, a meaningful view of the world, identification of skills and recognition of life purpose	Waldorf pedagogy has a healing characteristic, the activities of Thinking, Feeling and Wanting, develop a strong sense of coherence in the students

Note: SOC (sense of coherence)

The tOmbuds model focuses on the activation of the GRR of teachers and students working in social units organized in horizontal and vertical hierarchy. The Ombuds are students who work in close cooperation with teachers taking responsibility for team processes. A credit point system is used, the subjects of studies are relatively freely chosen and the teams work towards a common goal. Students are also trained to be able to change perspective and increase empathy which provides the background for the meaningfulness of individual learning course. Group processes include learning input such as understanding the contents in-depth (comprehensibility), working independently, accountably and managing time effectively (manageability), and learning emotional intelligence to comprehend oneself, peers and the teachers concerning mental states and communication processes (meaningfulness); all together promoting the SOC.

Picturing Academic Learning (Garista, Pocetta & Lindström, 2019)

Garista, Pocetta and Lindström presented the potential application of drawings applied to learning in higher education in the context of salutogenic and health promotion theories. The main idea was 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.

Drawings were used beyond psychological interpretation as instruments for understanding human experiences of health and sickness that cannot be expressed verbally. Drawings assisted students to express, cope, assimilate and integrate knowledge and skills by understanding feelings and thoughts such as pain, loss, frustration and joy. The crucial contribution of this proposal was to highlight that the shift towards health and better quality of life is possible by methods such as drawings. Nonverbal techniques help to integrate emotional learning in life trajectories which might improve SOC.

The proposed model characterized by salutogenic learning may offer and support health promotion, problem solving, lifelong learning, guidance, self-knowledge, self-assessment and self-expression improving all skills that enhance meaningful experiences such as emotional recognition and reflection (Nilsson & Lindström, 1998). Drawings help the previous achievements by disclosing hidden aspects of inner or outer reality, expressing the conscious and unconscious dimension of human experience which might be difficult to express verbally.

Drawings can act as metaphors integrating psychological and social perspectives in a salutogenic learning design.

The Collegial Model (Eriksson, 2019)

The Collegial model, presented by Eriksson, seeks to handle stress during research supervision through a sustainable working life style. Salutogenic supervision is characterized by mutual learning, the supervisor and the doctoral students are viewed as a team without level differences. Crucial characteristics are the strong foundation in ethics principles and strengthening SOC in the supervision relationship.

In traditional supervision there is an imbalance in power between the two parties. In the Collegial model the partners are working in collaboration to complete the doctoral thesis. The relationship between the doctoral student and the supervisor is characterized by mutual respect and trust. It offers a promising context in which the SOC can bloom and flourish. Good relationship, positive communication and proper attitudes towards each other are crucial. Supervisors are understood as individuals with high levels of professional expertise and doctoral students are seen as individuals with abilities, resources and specific knowledge who need to improve research skills. Due to the high pressure of the doctoral studies, the supervision process may have an impact on the doctoral student's mental health. The Collegial model proposes a learning process in which supervisor and doctoral student work in a health promotion perspective based in the salutogenic theory.

The key concept for this model is sustainability. A sustainable relationship is one which doesn't threat the personal resources of the partners but brings improvements for their identity, benefits from their experiences as human beings and enhances their senses of coherence. Ethics, mutual respect, fulfillment of needs, ability to listen, acceptance, respect, genuine care, confidence, dialogue and support are all characteristics of sustainable relationships.

Within this model, the supervision requires a clear foundation on ethics and mutuality to produce a sound SOC for the participants that will lead to a better understanding of the learning process (comprehensibility), the acquisition of better research skills (manageability) and the creation of meaningful supervision meetings that will support a true work worth of investment and energy (meaningfulness).

Sense of Coherence as a Lifelong Process of Development (Lindstrom & Eriksson, 2011)

Sense of coherence may be interpreted as a long-term process of development which does not end at young adulthood in contrast to the original idea of Antonovsky (1987). In the model of Lindström and Eriksson, health education is understood as a lifelong undertaking directed to individual transformation towards a healthy learning life style. This process involves the change from traditional health education to health literacy which is related to awareness to promote health. In this regard, the physical, mental, social aspects in addition to the spiritual one should be considered when one refers to health (Nutbeam, 2009).

The concept of health literacy involves participation, empowerment, and action competence. A sustainable transformation requires the active involvement of the students in creating ownership of their learning process about health. Empowerment should be understood as a condition in which the individuals understand that they are the authors of their story and can also alter the circumstances of their lives according to their decisions. Action competence is created by the learning process when the student is supported in achieving the ability to discern proper attitudes and values, being ready to act in order to achieve better outcomes.

SOC can be developed by a learning process in which students interact with each other and the teacher and learn about life and health by the formal and informal experiences which in reverse improve the SOC. Instead of health or risk determinants, Generalized Resistance Resources are used to improve the individuals' SOC. Salutogenic learning has a system approach in this model directed to the harmony between individuals, groups, and society aiming to reach wellbeing. Alongside the individual dimension there is also an emphasis on the culture and in the context in which the health promotion is performed. The reduction of inequality is another concern of the health promotion in which the learning process is continuous and meaningfulness is highlighted.

Individuals who have opportunity to improve their SOC and organizations that insert the concept of SOC in their work environment acquire better mental health and quality of life, thus helping individuals to live longer and more fruitfully (Kickbusch, 1996). The core idea is to approach life as a constant learner, a novice in order to learn more about oneself, others and health. Better

physical and mental health will result when the aim is to experience life as meaningful and rewarding in its core essence (Lindstrom & Eriksson, 2011; Eriksson, 2017). The most relevant contribution of this model is the idea of processing life circumstances in a thoughtful approach. A situation is analyzed by resonating on former events and the experience will increase the behavioral repertoire of the individual to manage the stresses of life. Besides that, it's a mutual learning process shared among humans in the society.

This process will be assisted by the creation of a learning context with adequate support for empowering conditions where students become active participants in mutual synergy with others. SOC can be a process of a lifelong development strongly connected to healthy learning by which individuals and institutions improve the management of their lives, and boost health, wellbeing, and quality of life. Achieving a meaningful life in a socially and spiritually meaningful context is the ultimate goal of salutogenesis (Lindstrom & Eriksson, 2011; Antonovsky, 1987).

Teaching as a Source of Promoting Health (Garcia da Costa, 2017)

Garcia da Costa presented the intercession between Salutogenesis and Waldorf theory, demonstrating the healing nature of the later. The phenomenological basis of Waldorf pedagogy stems from the principle of the subject's cognitive, affective and volitional forces, comparable to the three sub compounds of SOC, working together for the integration of human experience.

Derived from anthroposophy, Waldorf pedagogy supports and promotes students in the intellectual, artistic and practical skills. According to Steiner (2013), education can only be properly practiced if it is understood as a remedy and if the teachers are aware of their double function as a teacher and as a healer. To educate is to assist personal transformation for the development of high qualities, to boost personal and social growth and to help improve critical awareness (Garcia da Costa, 2017). In order to satisfy these goals, the Waldorf method is systematized to develop the integrative characteristics of the human soul.

Teacher-student relationship is highly emphasized in Waldorf pedagogy; therefore, children have the same teacher during the first eight years of the school which gives the teacher the opportunity to get to know the student's strengths and weaknesses more thoroughly. This close relationship naturally evokes the teachers as a source of emotional security, a mentor and a reference person exercising its eventual role as a healer, supporting the pupil's transformation to reach the highest

version of themselves. Concerned with education of the whole student and integrating emotional, spiritual, physical and academic growth, this pedagogy is often referred to as the head, heart and hands pedagogy expressing that those children learn with their bodies, feelings and mind (Easton, 1997).

The foundation of Waldorf pedagogy resonates very well with salutogenesis theory evidenced by the similarity between the three compounds of the SOC (comprehensibility, manageability and meaning) and the three guiding activities of the Waldorf pedagogical method (thinking, willing and feeling). Comprehensibility is comparable to the thinking dimension; manageability to the Willing dimension and meaningfulness to the Feeling dimension. Antonovsky's model of salutogenesis and Steiner's model of Waldorf pedagogy both propose to help students in an integral development that results in a meaningful view of the world, the identification of skills and recognition of life purpose which support the maintenance and promotion of health. The holistic understanding of these theories allows inter- and trans-disciplinary explorations of the individual in the world and in society, covering health and education.

Teaching as Management of Weakness (Kinchin, 2019)

Conflicting discourses, opposing ideas, burnout and frustration describe the atmosphere of some contemporary higher education institutions. The consequence of such environment characterized by ineffective tensions and stressors in the workplace cause disorganization and foggy thinking. Different teaching tasks might be conflicting resulting in pedagogic frailty. Criticizing the neoliberal university, the dominant narratives characterize higher education as a professional environment described as unconcerned and unhealthy. Using a Deleuzian gaze, Kinchin identified care, pedagogic health, and salutogenesis as cornerstones to develop a more productive state of healthy learning adding relevant contribution to pedagogic frailty.

In this model pedagogic frailty is understood as a proper time for reflection about the teaching process and self-awareness which can be enhanced and supported by the salutogenic framework. The main concept for this model is resilience because working on pedagogic frailty brings the possibility of increasing consciousness among professors and managers of universities and prevent weakness.

Four essential subjects are targeted by the pedagogic frailty model. These are the dialogue between teaching and learning, the relationship between pedagogic theory and practice, the relationship of research and teaching in pedagogy and the evaluation and appreciation of teaching in higher education and decision-making processes of the universities. The model is concerned with some elements of the academic context that produce obstacles for the improvement of the professional practice of teaching and with academics who are identified with frailty. Comprehending frailty and resilience as two poles of an axis and adopting the salutogenic model to reinterpret the teacher's pedagogic frailty, Kinchin introduced the approach of mental health literacy across university campuses.

Helping academics and universities to move towards optimal pedagogical health, salutogenesis works by creating a SOC and an accurate timely potential to the labor of teachers. SOC in the educational environment helps to treat the mental health concern of students and teachers and gives direction in the contemporary unpredictable political and economic circumstances (Barnacle & Dall'Alba, 2017).

The concept of pedagogic health is enlarged with the inclusion of the salutogenic theory. Meaningfulness, collaboration and high standard are reached when the teaching/learning environments are treated in a salutogenic way. The contribution of salutogenesis to pedagogic frailty makes the model more responsive to university managers as a developmental tool.

3.5 Chapter Summary

The chapter was devoted to reviewing the literature specifically on salutogenesis applied to education. A literature search was carried out which included articles discussing the connection between education and SOC with a cutoff date of July 2020. The possibilities of consciously including SOC in education were explored by various studies resulting in six models that represented how education was treated by salutogenic authors. 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, 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 (Kinchin, 2019) which result in resilience and consciousness among professors and managers of universities.

Chapter 4: Research Methodology

This chapter aims to describe the methods of research in this dissertation. Firstly, it discusses the reasons for the chosen mixed methods (quantitative and qualitative) used. The next part of the chapter presents the aims and structure of the empirical studies, research questions and hypotheses, research design, samples, and participant characteristics, setting of research, data collection procedures, inclusion and exclusion criteria, and ethical issues. Afterward, research instruments are described, in addition to data analysis performed.

4.1 Quantitative Study

4.1.1 Research Approach

Research would be understood as the search for meaningful relationships and the discovery of their consequences. As life is not one-dimensionally understood, there are no simple dichotomies such as quantitative or qualitative, objective or subjective methods. However, research would be enriched by a pluralistic approach that includes many realities and contradictions. Quantitative method contributes with prediction, control, correlational, causal, and probabilistic aspects of real life. Qualitative methods contribute with the underlying themes including psychological aspects that explain social contexts, the understanding that the individuals and their social behavior have to be interpreted from the inside, not the outside. Qualitative research emphasizes the central place of subjectivity in the research process using verbal rather than statistical analysis. Viewing the social world as being personally created makes the researcher select mixed methods research. Besides quantitative approach, qualitative studies were chosen to understand the way in which participants create, modify and interpret the world in which they live and interpret the subjective meaning which individuals give to their action.

4.1.2 Aims and Structure of the Empirical Studies

The full research was organized as quantitative and qualitative studies. A validation of the sense of coherence scale on a sample of Hungarian youth was performed with the purpose to examine whether SOCS is a valid and reliable instrument to be used with Hungarian children and adolescents. The author aimed to clarify whether SOCS was better fit in a one single factor or a

three-factor solution. Finally, the author wanted to compare the sense of coherence of children and adolescents under psychiatric care to an average sample of youth.

The quantitative empirical study analyzed different aspects and relationships of the possible 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.

4.1.3 Research Questions

The general objective of this research was to investigate the association between sense of coherence, self-esteem and psychological problems in young people with and without psychiatric care and its consequence in the process of learning and education. Therefore, in order to achieve a better organization, specific objectives were built and operationalized, later transformed into research questions described below.

- *Is SOCS-13 a valid and reliable instrument to be used to assess the sense of coherence of children and adolescents?*
- *Is SOC of a psychiatric youth sample different from an average school sample?*
- *Which SOC concept was better fit, an unidimensional SOCS model or a three-factor solution?*
- *Is it possible to differentiate between a youth psychiatric sample and an average sample based on their demographic characteristics (parents' level of education, income, marital status)?*
- *Are psychological problems associated with low SOC, low self-esteem, low QoL and low social support?*
- *Are internalization and externalization type psychological symptoms associated with low SOC?*
- *Is there a difference in SOC, self-esteem, QoL and social support in regard to age?*
- *Is there a difference between sense of coherence in regard to gender?*
- *Is parents' educational level and Negative Life Events associated with SOC?*

- *How is the SOC of average children and adolescents compared with children and adolescents with psychiatric symptoms?*
- *Is SOC predicted by self-esteem, QoL, Social support and absence or presence of psychological/behavioral symptoms?*
- *Is higher SOC and self-esteem associated with better academic achievement?*
- *Are psychological symptoms associated with lower self-esteem and worse academic achievement?*
- *Is school performance predicted by SOC, self-esteem, and psychological/behavior problems?*

4.1.4 Hypotheses

Based on the exploration of the literature the author presents the hypotheses that were tested:

- H1. Psychiatric population can be discriminated from peers in average population by their demographic characteristics (parents' level of education, income, marital status, negative life events) (Kimhi, Eshel, Zysberg et al., 2010), (Kivimäki & Tsakos et al., 2009), (Volanen et al., 2004).
- H2. Psychological problems are associated with lower sense of coherence (Blom et al., 2010), (Schäfer, Sopp & Fuchs et al., 2021).
- H3. Psychological problems are associated with lower self-esteem, lower quality of life and lower social support (Humboldt, Leal & Pimenta, 2014), (Lamoureux et al., 2012), (Guillon, Crocq & Bailey, 2003).
- H4. Both internalization and externalization type psychological symptoms are associated with lower sense of coherence (Ristkari, Sourander, Ronning & Helenius, 2008), (Brawn-Lewensohn et al., 2017).
- H5. Children have higher sense of coherence than adolescents (Moksnes et al., 2012), (Räty et al., 2005), (Myrin & Lagerstrom, 2006), (Honkinen et al., 2009).
- H6. Children have higher self-esteem, higher quality of life, higher social support than adolescents (Robins et al., 2002), (Caldera & Hart, 2004), (Gaspar, Matos, Pais et al., 2009), (Malecki & Demaray, 2002).

- H7. Younger children and children without psychological/behavioral problems will have higher SOC than older ones, and children with psychological symptoms (Schäfer, Sopp & Fuchs et al., 2021), (Moksnes et al., 2010).
- H8. Males have higher sense of coherence than females (Moksnes, Espnes & Lillefjell, 2012).
- H9. Higher sense of coherence and higher self-esteem of youth would be associated with parents' higher educational level and less youth negative life events (Antonovsky & Shifra, 2000), (Feldt, Kokko, Kinnunen & Pulkkinen, 2006), (Groholt et al., 2003).
- H10. Higher sense of coherence is predicted by higher self-esteem, better quality of life, better social support and less psychological/behavioral symptoms (Moksnes et al., 2010).
- H11. High sense of coherence and high self-esteem is associated with better academic achievement (Sharma & Sharma, 2021), (Oliva et al., 2019).
- H12. Psychological symptoms are associated with lower sense of coherence, lower self-esteem and worse academic achievement (Lamoureux et al., 2012), (Guillon, Crocq & Bailey, 2003), (Volanen et al., 2007).
- H13. Academic achievement is predicted by SOC, age, gender, psychological/behavioral symptoms and self-esteem (Kristensson & Ohlund 2005; Honkinen, Suominen, Välimaa et al., 2005; Oliva, Cunha, Silva et al., 2019), (McLeod, Uemura, Rohrman, 2012), (Efrati-Virtzer & Margalit, 2009), Cetin (2016), Wasonga, Christman, & Kilmer (2003), Reynolds, Scheiber, Hajovsky et al., (2015).

4.1.5 Research Design

The author used a descriptive, comparative and quantitative method of research and associational cross-sectional design. Data are collected only once and multiple results can be studied, so, this type of study is not expensive. Another advantage of the cross-sectional design is that more data can be collected on a greater number of participants. Disadvantage is that it is not possible to examine causal relationships.

4.1.6 Samples and Participants of Quantitative Study

The number of participants who agreed to participate was 394 altogether. There were 269 youth in the control group and 125 in the psychiatric 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 as for the psychiatric and average samples and needed approximately 20 minutes to be completed for the parents and youth.

For the psychiatric group (N=124), 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. Initially the head of the Child and Adolescent Psychiatric Unit of Szeged University was informed and the consent for the research was obtained. Parents and youth attending the in- or outpatient child and adolescent psychiatry clinic were informed about the ongoing research, received the information and were invited to participate. 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.

For the average sample (N=199) data was collected from Karolina Elementary and High School, József Kőrösy Vocational Training Center, and Hansági Ferenc Vocational School in Szeged/Hungary. The head of every school was contacted and informed about the research. After the consent of the principal was obtained, written information about the research with contact information of the researchers was sent home with the children. Youth and parents who agreed to participate were asked to sign the consent form and send it back to the school. Parents and youth who agreed to participate received a link through e-mail addresses to access a platform in which the questionnaires were answered and sent back to the researcher. Parents and children received separate links. Elementary, high and vocational school students of both genders were eligible from grades 5th to 12th who agreed to participate and had the consent of their parents. The average sample was tested between January and June, 2021. The scales and questionnaires needed approximately 20 minutes to be completed for the parent and the same for the child and were answered in paper pencil format.

4.1.7 Setting of Research

Data was collected in Szeged city, Hungary. Szeged is the third largest city of Hungary situated near the southern border known as the higher education center of the Southern Great Plain. It is often called 'the city of sunshine' due to the reported high hours of sunlight.

4.1.8 Inclusion and Exclusion Criteria

Criteria for inclusion in the psychiatric group was the age of 10 to 18 years old, 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 above-mentioned schools in Szeged. Exclusion Criteria for both samples were studying below grade 5 at school, and students who didn't attend school regularly.

4.1.9 Ethical Issues

Prior to conducting the study, the approval of the Institutional Review Board of the University (IRB) of Szeged was obtained. Confidentiality and anonymity were carefully protected and ensured during all stages of the study.

Permission for use the sense of coherence scale was obtained and received from Ph.D. professor Monica Eriksson (Head of the Center on Salutogenese/Projectleader ARK University West/Sweden), the legal representative of Antonovsky, who granted license for the use of the questionnaire.

All participants and their parents recruited for the research were asked to sign a consent or assent form after explanation about the purpose, potential risk, and procedures of the research. They were also informed that they have the right to refuse answering any questions and withdraw from the study at any time.

4.1.10 Research Instruments

4.1.10.1 Sense of Coherence Scale (SOCS)

Antonovsky created the sense of coherence scale (1987) as an instrument to assess the factors that increase health potential. Initially, a 29-item SOCS was developed from which a shorter version of 13 items was later extracted. Since the creation of the Orientation to Life Scale

(Antonovsky, 1987), the SOC concept has received a considerable examination by the scientific community across a wide range of cultures and different research settings. These studies support the reliability and validity of the SOCS supporting the usefulness of the construct. The instrument has been examined in different populations, different kind of patients, professionals and many areas of practice from health services to research settings (Eriksson & Lindström, 2006; Naaldenberg et al., 2012). Hungarian adaptation and validation on adults were done by Balajti et al., (2006).

Several researchers have examined the adaptability of the original SOC questionnaire (Antonovsky, 1983) to the adolescent population. Based on that, the adolescent sense of coherence scale was adjusted to fit adolescents' characteristics (development of self-identity, confusion, unpredictable changes, etc.). Several items were removed from the original 29 items scale and others were rephrased to make sure that the adolescents understand the items (Antonovsky & Sagy, 1986), resulting in the final version of 13 items which has been considered a single factor and not the three separate components (meaningfulness, comprehensibility, and manageability) (Hagquist & Andrich, 2004). No validation study was done with adolescents or children in Hungary before.

Children in this study completed the 13-item version; 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. Scores for SOCS-13 range between 13 and 91 points, higher scores indicate stronger SOC. Literature shows good reliability data for both scales on adult populations (internal consistency of SOCS-29 was between 0.82 and 0.95 (Antonovsky, 1987; 1993), (internal consistency of SOCS-13 ranged from 0.70 to 0.92, test-retest reliability scores were between 0.69 and 0.72 (Eriksson & Lindström, 2005). In our sample SOCS-13 showed good reliability in both child and adolescent groups (0.872 and 0.886, respectively). The short version of 13 items is used when time and space impede the application of the longer one.

4.1.10.2 Rosenberg Self-Esteem Scale (RSE)

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. Original internal consistency ranged from 0.77 to 0.88, test-retest reliability from 0.82 to 0.85 (Rosenberg, 1989). According the research of Rosenberg the original validity results described that criterion validity was 0.55 and the construct validity correlated with anxiety (-0.64), and depression (-0.54) (Rosenberg, 1989). Reliability in the present study was excellent (data are shown later); Cronbach alpha was 0.93 for children and 0.91 for adolescents. Hungarian adaptation and validation of the scale was done by Rózsa et al (2014).

4.1.10.3 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. It has been translated to more than 80 languages and is widely used in both research and empirical fields. 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. SDQ intends to assess both psychological problems and strengths through a multi-informant approach. While the prosocial scale indicates the number of prosocial characteristics, the other combined scales reflect total difficulties (Goodman, 1997). It has also been used as a treatment-outcome measure and as part of clinical assessment as well. Hungarian adaptation and validation were carried out on various samples (Birkás et al., 2008; Turi et al., 2011; Rózsa & Kő, 2015).

Reliability of SDQ in the present study was in the acceptable range; Cronbach α for children was 0.72, for adolescents was 0.70. The good reliability and validity of the SDQ make it a useful measurement of the adjustment and psychopathology of youth.

4.1.10.4 Quality of Life Scale (ILK)

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 & Remschmidt, 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. ILK includes one item for global evaluation and six items addressing subjectively reported well-being in regard to the child's physical and mental health, perception of alone activities, perceived relationship to friends, family and school. General quality of life measures allows ILK to assess different diseases as well as healthy children and adolescents. Earlier results of the ILK validation in Hungary showed acceptable internal reliability (Cronbach alpha: 0.66 in children, and 0.73 in adolescents) (Kiss et al., 2007).

4.1.10.5 Multidimensional Perceived Social Support (MPSS)

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. MSPSS has proven to be psychometrically sound and to have good internal reliability, test-retest reliability, and robust factorial validity (Cecil, 1995). Hungarian validation showed similar results (Papp-Zipernovszky et al., 2017). Study of Wongpakaran, Wongpakaran and Ruktrakul (2011) found that the internal consistency of the scale was good, with Cronbach's alpha of 0.91 to 0.87. After a four-week retest for reliability measurement was found to be 0.84.

4.1.10.6 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.

4.1.11 Data Analysis of Quantitative Study

The following software was used for the statistical analyses: IBM SPSS 25, 27 (Apache Software Foundation, USA) and MPlus 6.12 (Muthen and Muthen, USA). Demographic variables were compared between children and adolescents. Mean scores and standard deviations were calculated separately in the two age groups. Due to the nonparametric distribution of the scale variables, Mann-Whitney test was used to compare children and adolescents on SOC, self-esteem, QoL and emotional/behavioral problems. Internal consistency was measured by Cronbach alpha which is acceptable between 0.7 and 0.95 (Tavakol, Dennick, 2011). Pearson product-moment correlation was used to test bivariate associations between SOC and psychological/behavioral symptom groups.

Confirmatory factor analysis (CFA) was performed to examine the fit of the original 3 factor models and the unidimensional models of SOCS-13 and SOCS-29 on both child and adolescent samples. Due to the non-parametric distribution of the variables, we used a robust estimator (the maximum likelihood estimation with robust standard errors and a mean- and variance adjusted, MLMV) for CFA, which appropriately corrects for the standard errors of the parameters. The following indices were calculated to evaluate the model fit and the recommended criteria were adopted: chi-square (χ^2), degree of freedom (df), χ^2/df (<5.0) (Tabachnick, 2007), root mean square error of approximation (RMSEA <0.06), comparative fit index (CFI >0.95 good, >0.90 acceptable), Tucker-Lewis Index (TLI >0.95 good >0.90) (Hu & Bentler, 1999).

Mann-Whitney test was used to compare self-esteem, NLE and other demographic characteristics. Pearson product-moment correlation was used to test bivariate associations between SOC and the other variables between the samples. Stepwise linear regression was used in order to analyze which demographic variables and life events predicted sense of coherence and self-esteem. Regression analyses were made with sense of coherence score and grade average as dependent variables and questionnaire scores and demographic factors as predictors.

4.2 Qualitative Study

4.2.1 Participants of Qualitative Study

Subject 1 - pseudonym John

Subject 1 received the pseudonym of John. He was 14 years old at the interview and stayed two months in medical treatment in the Child Psychiatric Hospital due to an attempt of suicide. He was diagnosed with depression and adjustment disorder. During this period of time, two interviews were performed with him besides an interview with his mother.

The mother of John is a nurse and his father is a medical doctor, so they first met when working in a countryside hospital. She described John's father as very similar to her own father except that John's father was never physically abusive but instead very narcissistic and mentally abusive. John has an older brother and his parents spent five years in court disputing the custody of the children with mutual accusations. She described this period as one of the hardest of her life because she was demoralized and never knew if the kids were going to be taken away from her.

In her interview, John's mother described him as a very quiet and perceptive child, always being quieter and withdrawn if there were changes. Born in the USA, John was four years old when moved to Hungary that change being, in the mother perception, the biggest formative experience because John is a quiet and reserved adolescent. She said that John is very intuitive but keeps everything in.

She explained that John suffered from insomnia lasting more than 3 hours before sleep which made him tired and irritable. She also said that he used to hurt himself in different ways. Low academic achievement was one of the first consequences of the psychiatric symptoms. John stopped caring about homework and got grades like two or three on some tests, which had never happened before. About school life, the mother said that John was really intelligent and was always at the top of his class in his previous school; however, he never really joined in team sports or similar activities. John likes Math and Physics.

After a while, John's father proposed to register John in a bigger school since the countryside school, where they used to live nearby, was not adequate for him anymore. In her opinion, this

change was just too much stress for him. Asked about the reasons for the psychiatric symptoms of John, his mother answered that the combination of hormones, family history, the change of schools, and the stress from having to fit into this new class of kids was too much for John.

Subject 2 - pseudonym Robert

Subject 2 received the pseudonym of Robert. He was 15 years old at the interview and stayed in medical treatment due to thoughts of suicide. He was diagnosed with depressive disorder. Robert's mother was interviewed once. She traveled to the United States of America almost 20 years ago looking for a better life with plans to come back after one year, however, she met Robert's father, started to live with him and decided to stay there. Since Robert's father is Jew, she converted to Judaism during the pregnancy with Robert because she understood how important religion was for him.

Robert was born in the USA. The parents of Robert were together until Robert was about two years old and still tried to reconcile until he was about three. She described Robert's father as emotionally abusive and a very controlling person. When things didn't go in his way there had to be some kind of price to pay such as name callings and threats. The first two years were pretty difficult with a lot of arguments. As she was in America illegally, every time that there was some sort of disagreement, her husband used to make her believe that she was worthless, threaten to take Robert away from her and deport her so she would never see her child again.

During the divorce, he used to accuse her of all kinds of things such as being bipolar and alcoholic in order to win the case in court and have the sole custody of Robert. After there was a change in the elected leading American party, she felt more pressure on her immigration status and therefore decided rather not risk and came back to Hungary. Robert did not want to go at the beginning. However, after a while, he accepted and they returned.

After the separation, the relationship of Robert with his father and relatives basically didn't exist. Robert's relationship with his mother's family in Hungary is also not close because he only met his grandmother a few times besides the fact that they don't speak the same language. Robert never met his uncles and his aunt, therefore according to his mother, he doesn't really feel like he has a family because they're not connected. Robert's mother described him as stubborn and more

introverted. He usually talks with his friends in America on the weekend; however, she thinks that he would need a friend in Hungary, too.

Robert is learning Hungarian but is still not able to communicate. His classmates don't speak English well enough to actually chat with him and he doesn't speak Hungarian well enough to chat with them, so they don't connect. He doesn't understand what the teachers are teaching to him. He feels like it is a waste of his time. The pandemic situation with the online school was good for Robert because he could use Google Translate from home in order to complete his school assignments.

Asked about the reasons for Robert's psychiatric symptoms, the mother explained that as a teenage boy, Robert is going through a lot of changes. His body is changing, his voice is changing, everything is changing, and then on top of that, he has to learn a new language. According to her, it's hard for him to feel like this is the place where he belongs. He can't make connections with people and he couldn't learn so far what he's supposed to. Basically, the whole problem is due to not speaking the language, not being able to communicate, and not being able to understand a lot of things that are around him.

Subject 3 - pseudonym Emma

Subject 3 received the pseudonym of Emma. She was 14 years old at the interview and stayed under medical treatment at the Adolescent Psychiatry Unit due to thoughts of suicide. Her parents were both interviewed once and Emma was also interviewed after her parents by the researcher.

Emma and her parents are Hungarians. Her father is a software developer and her mother works as a bookkeeper. Emma has a 24-year-old brother and a 21-year-old sister. She was born from a non-expected pregnancy. During Emma's childhood, the parents of Emma's mother lived with them. The grandmother was diabetic, went to dialysis, had amputation and passed away so they had a hard time when Emma was around two years old.

At school, Emma had a smooth starting point. The first four years were really nice, she liked her teachers and friends and had really good grades, especially in Math and Sciences. Emma was described by her parents as a patient young child with a good mood always smiling. According

to them, there was no big trauma or arguing between the parents or the children. Since she was the last child, they were not so strict with her allowing her more things than the other two kids.

They said that she was mostly healthy but since the age of 8 or 9 she got to be overweighted. They started to notice the hormonal transformation in the beginning of the 6th grade. At that time, Emma didn't want to listen to their advices, started not to tell things to them, wanted to stay awake in the evening, but she was sleepy in the morning, and used Internet much more. She was always trying to show happiness with her friends even if she was tired and sad. She wanted to help her friends; however, the relationship was asymmetric and not balanced. She received lower and lower grades at school and every time achieved worse in her studies. At that time the parents decided to look for a psychologist who said that Emma was on the way of being depressed.

Asked about their assumptions about Emma's psychiatric symptoms, both parents explained their point of view. The father explained that maybe he was concentrating too much on his career and although spending time with Emma, she was not so sure about her importance for him. Emma's mother also said that maybe she didn't do the right time priority. They explained that the problem started with COVID because Emma wanted to finish the homework even at late in the evening and it was a fight to make her understand that it was not the right time for that. Besides that, the home studying, the online meetings and tasks to be done without enough support were too much and too early for her age. Different teachers used different information and requirements and the students got confused. In summary, they thought that the Covid situation, studying alone and puberty all contributed to the symptoms.

Subject 4 - pseudonym Greta

Greta is a 17 years old adolescent suffering from eating disorder and depression. She was interviewed once at the Psychiatric Unit of Szeged University. Her mother received the main questions and answered them in writing characterizing her child and the main aspects of Greta's life.

Greta's mother was 28 years old when Greta was born. It was a planned pregnancy. At that time, she was not working but was at home taking care of her first two-year-old son. It was a normal delivery and compared to the first child-birth it was faster and easier. Greta was born weighing

almost 4 kilos and was breastfeeding until 1 year. According to the mother, Greta cried a lot in kindergarten. She was willful, strong, and definite character. She was a good student and had a lot of friends.

Asked about negative life events, her mother answered that she was 8 years old when she behaved rudely. Greta wanted to break the friendship of two other girls sowing discord between them. They were friends since their childhood. Their parents came to Greta's parents and questioned them. It was a very shocking and unexpected event. They discussed it together. Now they are good friends. The mother described Greta as a good actress. Sometimes she is cute and sometimes disgusting and rude. She promises everything then she doesn't keep half of it. According to the mother, Greta always has to have an interest in doing something for someone else.

Asked to describe the relationship between Greta and her, Greta's mother answered that she always thought that they had a good relationship but actually they became closer and closer since Greta had the eating disorder. At first her father didn't believe that she was sick, however now he realized that he was wrong. Her brother has a completely different mindset and helps a lot but finds it hard to accept her. Greta has a good relationship with the whole family.

Subject 5 - pseudonym Charlotte

Charlotte is a 14-year-old adolescent suffering from an eating disorder. She was interviewed once at the Psychiatric Unit of Szeged University. Her parents couldn't be interviewed due to time restrictions and not speaking English. Charlotte described herself as someone who has really harsh emotions and always has a hard time in controlling her emotions, especially when angry: *"(...) when I'm happy... I'm very happy, when I'm angry, I'm very angry. And mostly I think that's all!"*

Charlotte said that she had a very good childhood. She didn't have many friends, but she got along with her brother. Her parents divorced when she was 9 and then she got depressed. At that time, she felt weird, was very much underweight and had to get therapy until she was 13 which culminated in the eating disorder. She used to live with her mother described as *"kind of narcissistic and she treated me really badly and she sometimes still causes me ups and downs"*,

so Charlotte decided to move out to her father place but she also had issues with her father: “ *I used to have issues with my father because he drinks a lot, but... it’s kind of better than my mom, so I don’t really mind him drinking anymore, so I have a good relationship with my dad now, but I had a really bad relationship with him when he was alone.* ”

Her grandparents from her mother’s side hate her for moving out, so their relationship is not good. She has a good relationship with her brother but not with her step sister because she’s like five years younger and little kids are a little weird for her. She has a dog and 5 cats and loves to ride horses. She doesn’t feel like a teenager but still sometimes as a child mainly because she doesn’t have friends. She usually spends her time playing with her pets and riding horses.

Subject 6 - pseudonym Sabrina

Sabrina is 16-years-old and was diagnosed with eating disorder. She was interviewed once at the Psychiatric Unit of Szeged University. Her parents couldn’t be interviewed due to time restrictions and not speaking English.

She said that her eating disorder started when she was in 7th grade and 13-years-old. At that time, at night before sleep, she was usually very down crying and feeling depressed but she was dancing and feeling happy in the afternoon. She said that there is a battle inside her between her thoughts, between two halves of herself. One of them tells her to lose weight or eat less and the other one is opposed by telling her not doing it.

She has had a bad opinion about herself since she was in second grade. It started really early in primary school. She was chubbier as a young child, and her classmates started calling her “fat”. Even her teacher used to make remarks on her weight and embarrassed her in front of the whole class, then she got older and after a while her eating disorder started in 7th grade. She remembered a survey where she had to step on a scale and the nurse told her how much her body fat percentage was. It was 24 for her and the nurse told her that it should be under 20. That final remark was the point where she started to count calories.

4.2.2 Data Collection of Qualitative Study

Semi-structured interviews were used to obtain data on the symptoms, overview of external world, life, oneself, symptoms, stressors, resources and life-experiences of the participants which

could contribute to their SOC. The interviews lasted for 1 to 1.5 hours, were audio-recorded and later transcribed. Data were categorized, coded, and analyzed to arrive at a reliable understanding of the sense of coherence of the participants as well as their emotional and existential characteristics.

Before the interview, the researcher introduced herself and established a warm rapport in order to have a proper climate and provide safety for deeper answers. The parents and the adolescents received information about the qualitative study and signed the consent form. The anonymity and confidentiality of the answers were guaranteed. Along this chapter, in order to show the emotional nuances of the participants, some extracts of their responses will be presented always in italics.

4.2.3 Interview Guide of Qualitative Study

The cornerstone of salutogenesis is the sense of coherence characterized as a life orientation or feeling of confidence that life, no matter what challenges need to be faced, will work. SOC is associated with internal strength (Lundman et al., 2010), positive emotional and cognitive evaluation of the relationship between the individual and his environment (Margalit & Eysenck, 1990), development during childhood and adolescence (Antonovsky, 1987), learning processes (Lindstrom & Eriksson, 2011), perceived health (Honkinen et al., 2005) and emotion awareness (Jellesma et al., 2006). In spite of all this, the question arises, what the sources of SOC are. If SOC is a predictor of well-being then it is important to study its developmental origin (Sagy & Antonovsky, 2000).

Sense of coherence, as the name implies, can be defined as a worldview characterized by coherence in the aspects of understanding, feeling and acting. Integrated by a wide variety of General Resistance Resources (GRR) (such as ego-strength, social support, income, etc.), SOC facilitates coping with stressors promoting health (Antonovsky, 1979) and is composed by its three dimensions which are comprehensibility, manageability and meaningfulness. The most relevant subjective aspects of life are found in our inner feelings, personal relations, major activities and existential questions (Antonovsky, 1987). These aspects were transformed in questions related to external world, life and oneself. The external world corresponds to major activities, the self is associated to inner feelings, and life corresponds to existential matters

(Flensburg-Madsen, Ventegodt & Merrik, 2005). Table 2 introduces the main questions based on Antonovsky's theory used during the interview.

4.2.4 Data Analysis of Qualitative Study

Data were analyzed using thematic analysis. The researcher immersed herself in the data by checking the transcripts against the audio recordings and reading the transcripts repeatedly. It was read line-by-line and the textual data which addressed the research question were coded. These codes were extracted to a broader level of themes and sub-themes followed by a review and reduction of themes until they fit together into a core idea that depicted the answer. The salutogenic theory, particularly SOC, was used as a base to guide the development of interviews and the interpretation of findings; however, it was not used as an analytical framework to categorize themes. The themes that emerged are presented in relation to participants' psychiatric experiences to elucidate their SOC towards mental health and existential circumstances. The existentialist approach was used due to its proximity to the theme of this research. As the themes related to the question of being in the world, the meaning of life, and the purpose of oneself are more often treated by existentialism, there is no way to avoid considering them in the analysis of the data.

Table 2: *Basic Questions used in the Qualitative Interview*

	Comprehensibility	Manageability	Meaningfulness
External World	How well do you understand your external world?	How well do you manage your external world?	How meaningful do you experience your external world?
Life	How well do you understand your life?	How well do you manage your life?	How meaningful do you experience your life?
Self	How well do you understand yourself?	How well do you manage yourself?	How meaningful do you experience yourself?

Based on Flensburg-Madsen, Ventegodt & Merrik, (2005)

4.3 Chapter Summary

The chapter has presented the methods of study. The chapter began by providing reasons for the mixed methods of research. Mixed methods help to integrate numerical and qualitative data allowing to explain, describe, illustrate and enlighten the results. The quantitative method of research allowed the investigation of sense of coherence, self-esteem, and factors which may influence the relationship among the above variables. The qualitative method provided additional data concerning the existential experience to the understanding of being in the world, one's own life, and oneself. The instruments used to collect quantitative and qualitative data were also described. Data was collected concurrently in a quantitative and qualitative approach. The former employed a set of scales and questionnaires applied to 323 children and adolescents from the Child and Adolescent Unit of Szeged University as well as a sample of elementary, vocational and high schools in Szeged, Hungary. The later used face to face semi-structured interviews with 6 participants and their parents (mostly mothers). Participants treated in the Child and Adolescent Psychiatry, who were able to speak in English, were invited, those who agreed to participate were assigned to the qualitative interview. Both quantitative and qualitative data were analyzed separately. The effectiveness of quantitative data has been ensured by the validity and reliability of the sense of coherence scale. Reliability of the other questionnaires was also checked before descriptive and inferential statistical analyses were performed. Qualitative data was analyzed through themes and codes.

Chapter 5: Results

This chapter presents the findings from the quantitative study with 323 children and adolescents divided into two samples in addition to the qualitative results from a set of interviews performed with 6 participants and their parents. The chapter begins with results of the validity and reliability analysis of the sense of coherence scale. Then, the descriptive and inferential statistics corresponding with the hypotheses were also demonstrated.

Demographic comparisons between psychiatric and average samples and analyses regarding the association among psychological/behavioral problems, self-esteem, quality of life, social support, and SOC were also presented in addition to another comparison between children and adolescents, males and females. Associations among SOC, self-esteem, psychological symptoms, and academic achievement were also investigated. The chapter ends with the results of the qualitative study in which the main subjects and themes were identified in regard to the understanding of the external world, life, and oneself.

5.1 Quantitative Results

5.1.1. Validity and Reliability of the Sense of Coherence Scale

Internal consistency

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).

Test-Retest Reliability

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.

Convergent Validity

Convergent validity measures the association between the construct and similar measures. Since there is a strong association between SOC and QoL (Eriksson & Lindström, 2005; 2007), we used the ILK scale for validity measure. Results showed a strong positive correlation between the two test scores for the whole sample (Pearson r : 0.712, $p=0.000$) and for children and adolescents separately (Pearson r : 0.624, $p=0.000$; Pearson r : 0.762, $p=0.000$, respectively). Every 1-point increase in SOCS-13 resulted in 2.2 (95% CI 1.96, 2.44) point increase in ILK score.

Discriminant Validity

It has been shown that behavioral and mental problems have a negative effect on SOC (Jellesma et al., 2006). Therefore, we compared SOCS-13 to SDQ. Results showed a strong negative correlation for the whole sample (Pearson r : -0.739, $p=0.000$) and also for both age groups (children: Pearson r : -0.642, $p=0.000$; adolescents: Pearson r : -0.81, $p=0.000$). Every 1-point increase in SOCS-13 resulted in 1.86 (95% CI -2.04, -1.67) point decrease in SDQ.

Confirmatory Factor Analysis (CFA)

CFA was performed to examine the fit of the original 3 factor model and the unidimensional model both on children and adolescent. The 3-factor model seemed superior to the unidimensional one on both samples; however, the unidimensional model was acceptable on the children sample and it was close to the predefined acceptable range on adolescents (Table 3). We compared the 29 item and the 13 item scales on adolescents by CFA. As it is shown in Table 3, SOCS-13 showed better model fit than SOCS-29 (Rodrigues de Oliveira, Öri & Kiss, 2023).

5.1.2. Comparison between Psychiatric and Average Samples

Table 4 shows the demographic characteristics of the whole sample and the psychiatric and average samples separately. Except for the age of the child, all examined demographic variables were significantly different between the two subsamples. The most frequent clinical diagnosis in the psychiatric sample was emotional disorder (79.8%) and anxiety disorder (35.5%). ADHD

was present in 8.1%, conduct disorder in 3.8%, eating disorder in 2.5%. The income was a self reported category reflecting a subjective decision among the parents responding the questionnaires. Income was self-reported as ranges and were divided into three categories such as average, below and above average.

Table 3: *Confirmatory Factor Analysis of SOC-29 and SOC-13 in Children and Adolescents*

SOCS	χ^2	χ^2/df	RMSEA	95% CI of RMSEA	CFI	TLI
Adolescents 29 items unidimensional	549.842	1.46	0.054	0.044-0.064	0.770	0.752
Adolescents 29 items 3 factors	511.914	1.37	0.049	0.038-0.059	0.816	0.800
Adolescents 13 items unidimensional	114.371	1.73	0.068	0.047-0.089	0.905	0.888
Adolescents 13 items 3 factors	83.234	1.34	0.047	0.012-0.071	0.958	0.947
Children 13 items unidimensional	89.923	1.38	0.048	0.019-0.071	0.935	0.921
Children 13 items 3 factors	78.643	1.27	0.040	0-0.065	0.956	0.945

Note: SOCS: Sense of coherence scale, χ^2 : chi-square, df: the degree of freedom, RMSEA: root mean square error of approximation, CI: confidence interval, CFI: comparative fit index; TLI: Tucker-Lewis Index.

We investigated negative life events experienced by the youth during lifetime. The frequency of the parents' psychological problems, divorce, family arguments, bullying, abuse and problems with police were higher in the psychiatric sample as showed in Figure 2.

SOC-13 clearly and significantly differentiated between average children/adolescents and youth under psychiatric care. Table 5 reveals that the mean score of SOC of the psychiatric sample was significantly lower than the average sample's and this was also true for the sub-dimensions of comprehensibility, manageability and meaningfulness. 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 at the time of the evaluation.

Table 4: *Demographic Description of the whole Sample, Psychiatric and Average Subsamples*

	All Sample N=323 mean (SD)	Psychiatric S N=124 mean (SD)	Average S N=199 mean (SD)	P
Age (years)	14.28 (2.18)	14.5 (1.9)	14.3 (2.3)	0.46
Mother age (years)	45.3 (4.8)	43.7 (5.3)	46.09 (4.4)	0.000
Father age (years)	48.1 (6.8)	47.3 (7.3)	48.5 (6.5)	0.044
Mother education (years)	15.88 (3.7)	13.7 (3.5)	16.9 (3.2)	0.000
Father education (years)	14.88 (3.4)	13.8 (3.3)	15.4 (3.3)	0.000
N life events	2.67 (2)	3.08 (2)	2.45 (1.9)	0.005
	No (%)	N (%)	N (%)	p
Female	220 (60.8%)	86 (68.8%)	134 (56.5%)	0.024
Parents' Divorce	126 (35.1%)	70 (57.4%)	56 (23.6%)	0.000
Income				0.009
Below Average	36 (10.1%)	20 (16.9%)	16 (6.8%)	
Average	207 (58.3%)	66 (55.9%)	141 (59.5%)	
Above Average	112 (31.5%)	32 (27.1%)	80 33.8%)	

S: sample, SD: standard deviation, p: significance, N: number

Figure 2: Percentages of Negative Life Events in Psychiatric and Average Samples

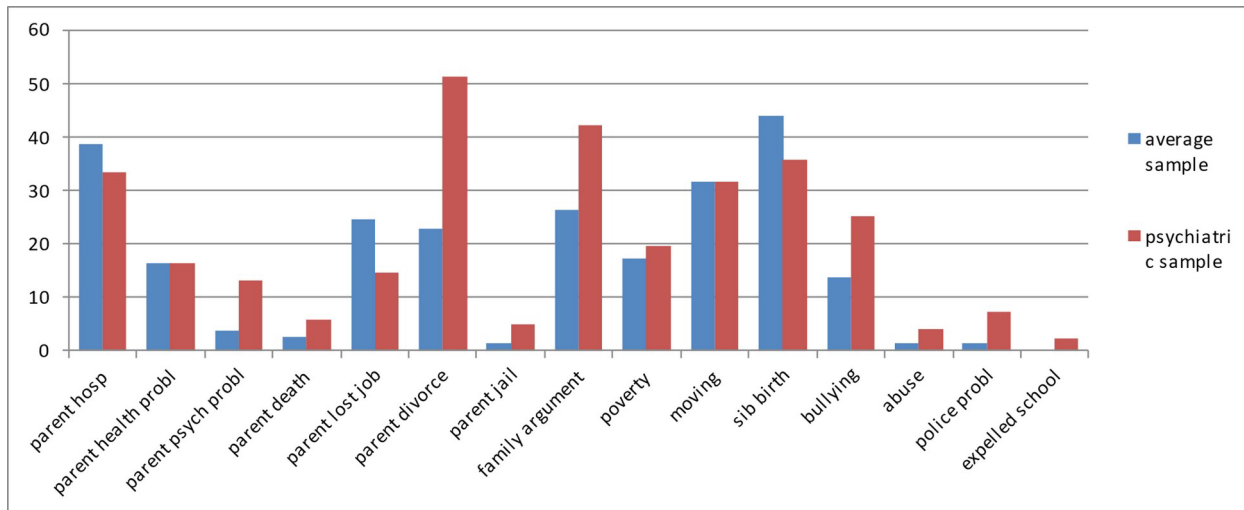


Table 5: Sense of Coherence, Self-Esteem, Quality of Life, Social Support and Psychological/Behavioral Symptoms in Psychiatric and Average Samples

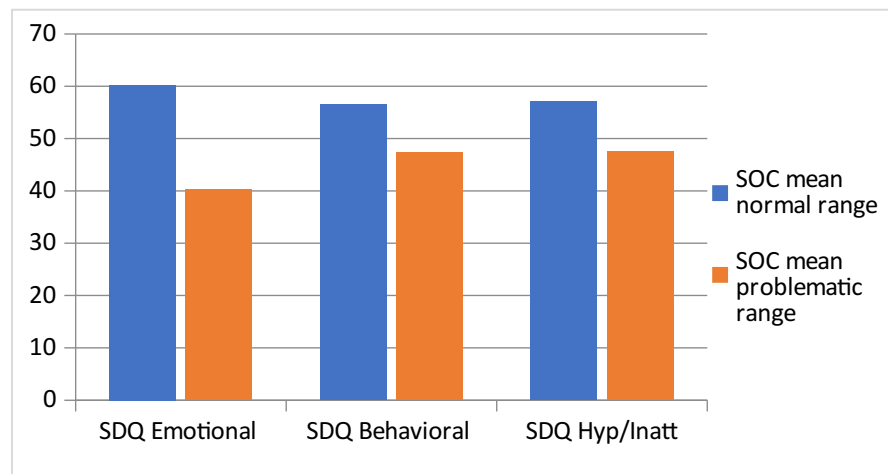
	All Sample	Psychiatric S mean (SD)	Average S mean (SD)	P
SOCS13	55.5 (15.2)	50.2 (15.4)	59.8 (14.2)	0.000
SOCS13 Comprehensibility	20.2 (6.4)	18.2 (6.3)	21.9 (6.2)	0.000
SOCS13 Manageability	16.9 (5.2)	15.6 (5.3)	18 (5)	0.000
SOCS13 Meaningfulness	18.4 (5.5)	16.4 (5.8)	20 (5)	0.000
RSE	17.7 (7)	14.1 (6.9)	20.4 (6)	0.000
ILK	19.6 (4.9)	16.6 (4.8)	21.6 (3,9)	0.000
MSPSS	69.2 (12.7)	65.1 (14.1)	71.8 (11)	0.000
SDQ	13.3 (6.1)	16.4 (6.1)	11.3 (5.2)	0.000

Note: SOCS 13: Sense of Coherence Scale 13, RSE: Rosenberg Self-esteem Scale, ILK: Quality of Life Questionnaire, MPSS: Multidimensional Perceived Social Support Scale, SDQ: Strengths and Difficulties Questionnaire

Both internalization and externalization type psychological symptoms were associated with lower sense of coherence. Figure 3 shows mean SOCS values for three subscales of SDQ comparing problematic symptom scores below and above the cutoff. Internalization type symptoms (emotional problems) had lower mean SOCS scores than externalization type

symptoms (conduct problems and hyperactivity/inattention problems). The differences in the SOCS scores between the normal and problematic SDQ ranges were significant in all subscales.

Figure 3: *Sense of Coherence scale in association with Emotional, Behavioral and Hyperactivity sub-scales of Strengths and Difficulties Questionnaire*



Note: SOCS: Sense of coherence scale, SDQ: Strengths and Difficulties Questionnaire, Hyp/Inatt: Hyperactivity/Inattention

5.1.3. Comparison between Children and Adolescents

The comparative analysis between children and adolescents is shown in Table 6. 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.

Children had higher SOCS scores than adolescents in both the average and psychiatric subsamples. The lowest SOC scores were found in adolescents under psychiatric care (Figure 4).

Figure 5 shows the mean SOCS scores by age and gender of youth. Males have 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. When children and adolescents were compared as groups, significant sex difference in SOC was found among children only (Table 7).

Table 6: *Sense of Coherence, Self-Esteem, Quality of Life, Social Support and Psychological/Behavioral Symptoms in Children and Adolescents*

	All sample mean (SD)	Children mean (SD)	Adolescents mean (SD)	p
SOCS13	55.5 (15.1)	58.9 (14.6)	51.7 (14.9)	0.000
SOCS13 Comprehensibility	20.2 (6.4)	22.0 (6.2)	18.1 (6)	0.000
SOCS13 Manageability	16.9 (5.2)	17.6 (5.2)	16.2 (5.2)	0.022
SOCS13 Meaningfulness	18.4 (5.5)	19.4 (5.2)	17.3 (5.7)	0.001
RSE	17.7 (7)	18.9 (6.7)	16.3 (7.1)	0.002
ILK	19.6 (4.9)	20.6 (4.4)	18.5 (5.2)	0.000
MSPSS	69.2 (19.7)	70.4 (12.1)	68 (13.1)	0.107
SDQ	13.3 (6.1)	12.3 (6.0)	14.4 (6.0)	0.001

Note: SOCS 13: Sense of coherence scale 13, RSE: Rosenberg self-esteem scale, ILK: Quality of Life Questionnaire, MPSS: Multidimensional Perceived Social Support Scale, SDQ: Strengths and Difficulties Questionnaire

Figure 4: *Sense of coherence scores of children and adolescents in average and psychiatric subsamples*

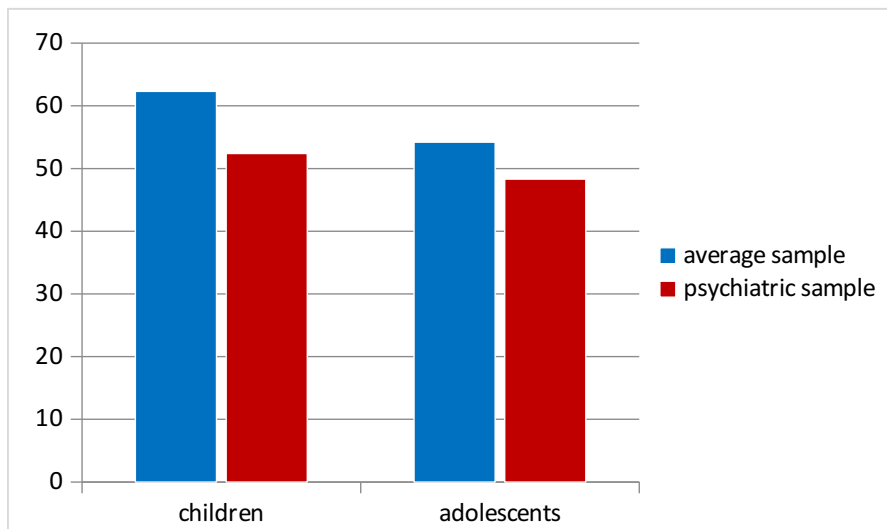
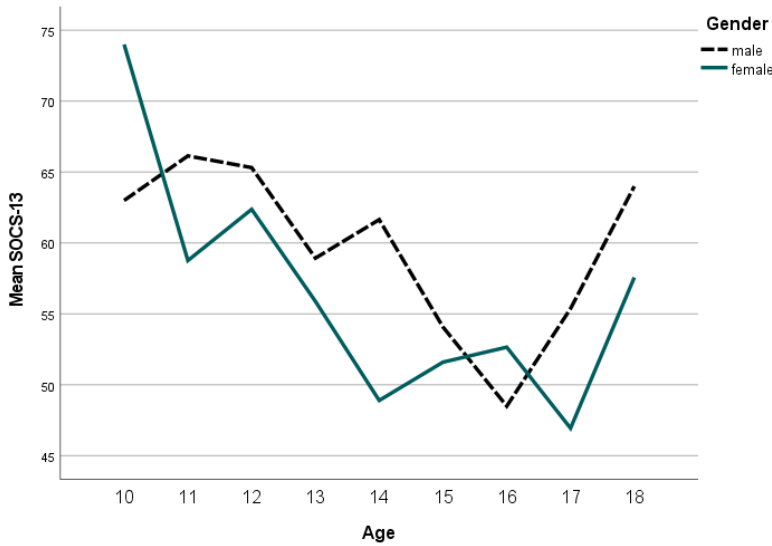


Figure 5: *Sense of coherence scores by age and gender in the whole sample*



Note: SOCS-13: Sense of Coherence Scale

Table 7: *Mean SOC and Standard Deviation in Males and Females, Children and Adolescents*

	Male mean (SD)	Female mean (SD)	p
Children	62.3(12.4)	56.6 (16.3)	0.016
Adolescents	54.3 (12.9)	51 (15.7)	0.243

Finally, we compared parent's SOC-29 to the SOCS-13 scores of the youth. There was weak correlation between parents' and youth SOC scores, Pearson r was 0.167, $p < 0.05$.

5.1.4 Prediction of Sense of Coherence

I investigated factors that influence and predict sense of coherence and self-esteem of children and adolescents. At first, I investigated the correlation among variables of interest (Table 8).

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 ($F(3,272) = 6.884$, $p < .000$).

Table 8: *Correlation between parents' education, number of negative life events, SOC and RSE*

	SOCS	RSE	Mother edu	Father edu	NLE
SOCS	1	0.731**	0.145*	0.135*	-0.172**
RSE		1	0.197**	0.156**	-0.188**
Mother edu			1	0.542**	-0.129*
Father edu				1	-0.50
NLE					1

Note: SOCS: Sense of coherence Scale, RSE: Rosenberg Self-esteem Scale, edu: education, NLE: negative life events

Next, the author investigated whether RSE, ILK, MSPSS, SDQ predicted sense of coherence. Correlation among the variables is shown in Table 9.

Table 9: *Correlation among Sense of Coherence, Rosenberg Self-esteem, Quality of Life, Multidimensional Perceived Social Support, Strengths Difficulties Questionnaire*

	SOCS	RSE	ILK	MSPSS	SDQ
SOCS	1	0.731**	0.712**	0.579**	-0.739**
RSE		1	0.764**	0.543**	-0.703**
ILK			1	0.648**	-0.734**
MSPSS				1	-0.549**
SDQ					1

Note: SOC 13: Sense of coherence scale, RSE: Rosenberg self-esteem scale, ILK: Quality of life scale, MSPSS: Multidimensional Perceived Support Scale, SDQ: Strengths and Difficulties Questionnaire

Results of the linear regression indicated that the model explained 64.6% of the variance and was significant, $F(4,303) = 137.97$, $p < .000$. It was found that self-esteem, quality of life, social support and psychological/behavioral symptoms significantly predicted SOC (Table 10).

Table 10: *Prediction of SOC in the whole sample*

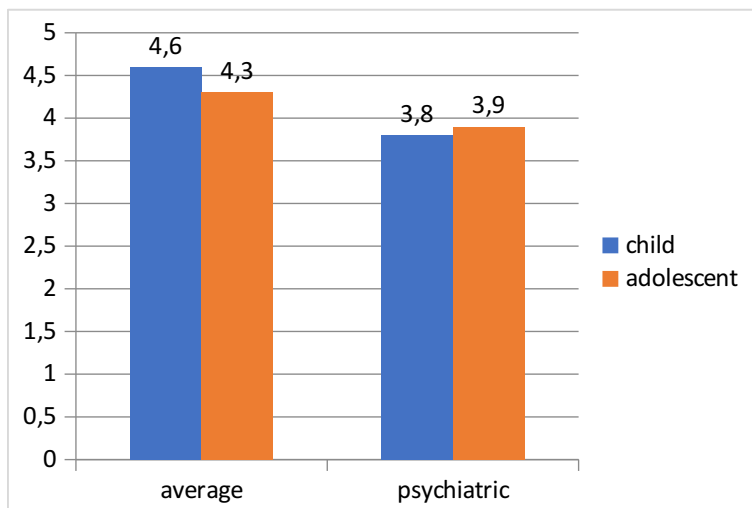
Predictor	Beta	t	p
Constant	35.19	6.874	0.000
SDQ	-0.830	-6.264	0.000
RSE	0.652	5.372	0.000
ILK	0.503	2.574	0.011
MSPSS	0.142	2.635	0.009

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

5.1.5 Prediction of Academic Achievement

Finally, the author was interested to see what predicted academic achievement. She used school grades, specifically overall grade average of the last school year as the variable representing academic achievement. Overall grade averages of the previous school year in the four subsamples are shown in figure 6. There were significant differences between average children/adolescents and youth under psychiatric care. Furthermore, 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 same trend was seen with grades in math (Figure 6).

Figure 6: *Overall grade of average and psychiatric sub-samples*



The author examined the correlation between school grades, SOC, RSE and SDQ. Table 11 shows the Pearson r correlation coefficients and the significances. Grade average in the last year showed significant but weak correlation to all three variables.

Table 11: *Correlation between School Grades, Sense of Coherence, Rosenberg Self-esteem Scale and Strengths and Difficulties Questionnaire.*

	grade average	SOCS	RSE	SDQ
grade average	1	0.127*	0.170**	-0.262**
SOCS		1	0.731**	-0.739**
RSE			1	-0.703**
SDQ				1

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

Finally, the author investigated which variables predicted grade average. She used age and gender of the youth, being under psychiatric treatment, SOC, RSE and SDQ as predictor variables.

The linear regression model included grade average as the dependent variable. This model was significant ($F(6,265) = 15.036$, $p=0.000$), explained 25.4% of the variance. Predictor variables are shown in table 12. RSE did not significantly add to the model.

Table 12: *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

Since psychiatric care seemed to be a strong predictor of academic achievement, the author repeated the linear regression separately in the average and psychiatric groups. Results revealed that SOC and age were the only significant predictors of grade average in the average sample ($\beta = -0.010$, $p = 0.027$ and $\beta = -0.085$, $p = 0.000$, respectively) and 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. She included 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 ($\beta = 0.074$, $p = 0.011$ and $\beta = -0.135$, $p = 0.003$, respectively).

Based on the results, 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.

5.2. Qualitative Results

5.2.1 Thematic Analysis Result

During the interviews, the participants were asked to share their views on their understanding, management, and meaning of the external world, life, and themselves. When necessary, the literal words or expressions used by the participants (always in italics) are presented to illustrate specific conditions or circumstances.

Understanding of the External World

Two categories were identified for youth's understanding of the external world: "I don't understand the external world" and "I understand it through internet or by reading about it".

a) "I don't understand the external world"

Asked about the understanding of the external world, John answered that it is known “*from psychology that humans are unpredictable and it's hard to understand a lot of things that they do*”. He added that he doesn’t do a lot to change the external world because he doesn't think that he would have enough effect to get his desired product implying that he feels powerless. He also said that it's impossible to fully understand how the entire “*universe works*” because there are “*just theories*” showing a rational interpretation of the world (in his words characterized as having a “*cynical way*” of thinking about it).

Emma answered that she doesn’t really understand the external world. Greta, besides not understanding commented: *I’m just trying to understand and deal with it because I can’t do anything*. Greta answered that there is mostly sadness in external world, mentioned the Russia/Ukraine war and the pandemic situation of virus. Charlotte explained that she never understood anything for the first time so she made a lot of mistakes. Sabrina said that in her opinion it’s really difficult to understand things that happen around her because the external world can’t be controlled. She felt hopeless when facing the external world such as for example three days ago, it was hot and she was having terrible headaches because of the weather.

b) “*I understand the external world by Internet or reading about it*”.

The second category of answers came from Robert who said that he understood the external world by the Internet or by reading about it. He explained that he didn’t look for a meaning showing a more superficial and intellectual understanding of the external world.

Management of External World

In regard to the management of the external world, two categories appeared which were “I don’t manage it” and the external world “should be managed to defend innocent people”.

a) “*I don’t manage the external world*”

John said that the management of external world always depended on whether it directly affect him or not. If it didn't directly affect him, or his close friends then he usually doesn't care. He added: *I might get like a bit obsessed ... or a bit upset or angry, but I don't care that much*. Robert said that he didn’t really manage it and that he was mostly fine with what happened

however he later contradicted himself showing silent rebellion against his move to Hungary which manifested in his symptoms. Greta don't manage because she doesn't know how to do manage and try to ignore it. Charlotte responded that she felt really annoyed when something wrong happens in the external world and she can't do anything about it such as the divorce of her parents. She got depressed because her parents used to fight a lot sometimes physically hurting each other and it was really bad to see it. Sabrina usually felt her external world out of control and concluded saying that she was not sure whether it was just her or people in general that couldn't control things in life.

b) *"The external world should be managed to defend innocent people".*

Emma represents the second category of answers summarized by the idea of "defense" and "protection". She said that her mother always suggested that she shouldn't be taking care of the external world if it was not something that directly affected her. However, she protested vehemently against that statement and affirmed that she really cared when, for example, human beings were suffering. She gave the example of war when innocent people were being massacred: (...) *because there are innocent people dying. And even if it's even, if it's not right next to us, even if it ... isn't in our country we still care about that because we are all human beings and it's important to think about everyone's safety and health.*

Meaning of the External World

Two categories appeared which were "I don't know the meaning" and "it is meaningless".

a) *"I don't know the meaning of the external world"*

Emma, Greta and Charlotte answered that they don't know the meaning of the external world. Emma sighed during the interview while saying (...) *I don't know because sometimes I think about my future and I'm living in the future and I am really... it's funny because I am always living in my head about the future and how I will be in the future and how my life will be in the future or how I don't want to be future anymore and how to end my life.*

b) *"The external world is meaningless"*

Sabrina answered that the meaning of external world is to keep life on happening in the sense that it is meaningless for human beings. She thought that there were more things that were difficult to control than things that could be controlled.

John and Robert found the external world meaningless. Robert added “*I think it’s just the world just exists but not really for a reason but I think that’s alright*”. John answered that as he is an “*existential nihilist*”, he doesn’t believe in the meaning of life, or in God or any higher power because he is an atheist so for him the world has no meaning.

Understanding of Life

Two categories were identified in youth's understanding of life which were “life is a complex interaction between cells” and “I don’t understand life

a) “Life is a complex interaction between cells”

The category represented by “life is a complex interaction between cells” came from John who showed a perception characterized by a scientific approach.

b) “I don’t understand life”

The second category of answers is composed by the answers of Robert, Emma, Greta, Charlotte, and Sabrina who responded “I don’t understand life”. The answers of each one of them were characterized by their personal and existential circumstances. Some of them didn’t add comments such as Robert and some others started to describe a series of details associated with other aspects of their lives. Emma immediately started to talk about herself and her life saying that sometimes she thinks that she “*is pure evil and don't deserve to live*”. Sometimes she thinks that “*people around her are pure evil and she is just innocent and they are hurting her*”. Sometimes she blames herself, sometimes she blames others for her traumas and sometimes she wants to end her life. Greta answered that she doesn’t understand her own life. She thinks about it and talks with her friends, family, and doctors but doesn't find any answer.

Greta feels weird and different from other people: “*It’s hard to understand but I’m trying*”. The core answer of Charlotte was that she doesn’t understand life since she gets confused about her own self. She said that a lot of people describe her in a different way. Some people say that she is

really nice and that is nice to be with her but some people describe her as a “*dork crackers*” or “*dork assful*” so she gets really confused. Sabrina answered that she thinks about life a lot but it’s hard to understand because sometimes things happen to some people, and the same things don’t happen to other people. Great things and tragic things happen to different people and she doesn’t understand how these people were chosen to go through these events.

Management of Life

About the management of life four categories of answers were identified: ‘I manage my life by thought’, ‘I manage my life really bad’, ‘I don’t manage my life’, and ‘I don’t know how to manage my life’.

a) “I manage my life by thought”

John said that he manages his life by thought. After a moment of silence, he added that he hadn’t really been managing his life properly due to his attempt of suicide:

“I guess I manage by thinking a lot. (...) My life... I try very hard to manage it but... It’s very difficult. Other people try to help me and I try to help myself and...well, I guess I manage by thinking a lot. I...I probably think too much actually”.

b) “I manage my life really bad”

Charlotte answered that she manages life really bad:

“Well, sometimes really bad like I used to self-harm because I I just couldn’t handle what happen around me, myself... so I used to self-harm, but I cannot anymore because they checked me so”

c) “I don’t manage my life”

Robert, Emma, Greta and Sabrina answered that they don’t know how to manage life. Adolescents who are beginning to form their own understanding of the world, relationships, and themselves may find it difficult to manage life however not at this level. It is necessary to help adolescents to focus on their own abilities in order to improve them.

Meaning of Life

The third set of questions about the meaning of life got three categories: “Life is meaningless”, “I don’t know the meaning” and “Life is meaningful”.

a) *“I don’t know the meaning of my life”*

About the meaning of life, Charlotte answered: *Well, I don’t know the meaning of my life, so I I don’t know I... I’m not sure.* Greta summarized that she has no idea about the meaning of life. She doesn’t know why things happen neither what is the reason why be here so. Emma’ answer is part of two categories since she said that she doesn’t know the meaning of life and at the same time her life is meaningless.

b) *“Life is meaningless*

About the meaning of life, Robert commented that he doesn’t think that life is meaningful. He also said that he doesn’t need a reason to live. John answered that as he is a nihilist, there is no meaning of life.

Emma answered that she doesn’t know how to find the meaning of life and gave a deep existential answer: *I thought about it a lot. I thought about that when I wake up I. I think about that every every time, every minute of ... of every day but I really don't know ... and that's why I want to kill myself. Because I... that that that is also a reason why I want to kill myself because of course self-hatred is one of them, but the other is really I... I don't... I don't think my life is meaningful and I don't think that I mean a lot to others and I don't think that... that with my life I can change anything and make anything better for the people or I don't...I don't think that with my life I can...I can be person to grow up and do good things, so yeah...I I I find my life meaningless and my whole existence is meaningless.*

c) *“Life is meaningful”*

Sabrina said that in her opinion, as we only have this life that we are living now, we have to live it to the fullest. It can be hard sometimes, but she believes that everything that happens has a meaning behind it. She thinks that we have to live our life in a way that when get older we look back and should think that:

“Yeah, I lived a long and great life and of course sometimes, like tragic accidents happen and you can’t control that, but...but you have, you have to live life because it’s...it’s such a meaningful thing and you should feel, and I feel really lucky that I can experience this whole thing, you know the world, because it’s beautiful”.

Understanding of Oneself

The answers to the first question about understanding oneself were classified into only one category since all of them responded that they don't know how to understand themselves.

a) I don't know how to understand myself

All participants of qualitative interview answered that they don't know how to understand themselves. According to Sabrina her difficulties of understanding herself are connected to her illnesses that take over her normal thoughts:

(...) I also have these, you know, these mood swings and feeling different emotions... just one minute I'm feeling sad and down the next time, I'm really happy and I...I really struggle to understand it and I am working on, you know, trying to understand that.

Management of Oneself

The answers for the question about the management of oneself were classified in one category "I don't manage myself enough or I manage myself badly"

a) "I don't manage myself enough/I manage myself badly"

About management of oneself, John answered that he doesn't manage himself at least not enough and added: *That's why I became a mess like right now.* Robert answered: *Probably bad!* And commented that he ignores his feelings, thoughts, and emotions. Emma said she is mentally unstable and doesn't understand how the lack of management made her symptoms get so far

(...) but now I...sometimes I don't even recognize myself and I... I can't manage to bear with that and not well, really not well. Yeah... It's gotten worse by the time

Greta explained that every night she goes for a long walk like 2, 3 hours while listens to music and try to deal with it. Sometimes she talks to her friends but she can't really do anything about the management of herself. Charlotte answered that she doesn't really do it well. She used to self-harm because she doesn't know how to handle stress so, she is often angry about herself. Sabrina answered that she admits it has been difficult to do it. She struggles every day but she thinks that with therapy the management is improving:

I think it's been really helpful just talk to someone about it because if you can get these feelings out of you then it actually helps you kind of relax your mood...so that's been really helpful... other than that I kind of just try to find a way always to...to relax myself...I listen to music that really helps, I read or I just talk to my friends.

Meaning of Oneself

The answers for the question about the meaning of oneself were classified in two categories which are “meaningless”, and “I don’t know the meaning of myself”.

a) “I don’t know the meaning of myself”

Greta replied that she doesn’t know what to say. Charlotte and Sabrina answered that they don’t know the meaning.

b) “I am meaningless”

Asked about meaning, Robert explained that he doesn’t think that he is meaningful. John explained that there is no meaning of himself: *I don't think that I'm meaningful at all in anything or in...in anyone's lives. Obviously, I know that that there are people that love me, for example my family, but I don't really change anything in their lives.*

Emma also commented that experience herself not meaningful:

How I ...How I got to think that my life is meaningless and...how I got to to this state where where where my life is something that that I don't want anymore because I can't can't enjoy them, can do good things for other people with that.

John, Robert and Emma answered that they don’t know the meaning of themselves what will be discussed in the next chapter in the subsection of qualitative study. Table 13 is presented below with the summary of the meaning of the external world, life and oneself identified among the answers of the participants from the qualitative interviews:

Table 13: *Meaning of the External World, Life and Oneself Among the Participants of the Qualitative Interviews*

		Understanding	Management	Meaning
External world	John	I don't understand it	I don't manage it	Meaningless
	Robert	I understand by media such as internet	I don't manage it	Meaningless
	Emma	I don't understand	Should be managed to defend innocent people	I don't know the meaning
	Greta	I don't understand	I don't manage it	I don't know the meaning
	Charlotte	I don't understand	I don't manage it	I don't know the meaning
	Sabrina	I don't understand	I don't manage it	Meaningless
Life	John	Complex interactions between cells	I manage my life by thought	Meaningless
	Robert	I don't understand life	I don't manage my life	Meaningless
	Emma	I don't understand life	I don't manage my life	I don't know the meaning/ Meaningless
	Greta	I don't understand life	I don't manage my life	I don't know the meaning of my life
	Charlotte	I don't understand life	I manage my life really bad	I don't know the meaning of my life
	Sabrina	I don't understand life	I don't manage my life	Life is meaningful
Oneself	John	I don't know how to understand myself	I manage myself badly	Meaningless
	Robert	I don't know how to understand myself	I manage myself badly	Meaningless
	Emma	I don't know how to understand myself	I manage myself badly	Meaningless
	Greta	I don't know how to understand myself	I manage myself badly	I don't know the meaning of myself
	Charlotte	I don't know how to understand myself	I manage myself badly	I don't know the meaning of myself
	Sabrina	I don't know how to understand myself	I manage myself badly	I don't know the meaning of myself

5.3 Chapter Summary

Chapter 5 is dedicated to the presentation of the quantitative and qualitative results of the research. Initially, the validity and reliability of the Sense of Coherence Scale including internal consistency, test-retest reliability, convergent validity, discriminant validity, and confirmatory Factor Analysis were presented. Confirmatory Factor Analysis showed the 3-factor model superior to the unidimensional one on both samples. Parents' psychiatric problems, divorce, family arguments, bullying, abuse, and problems with police were more frequent in the psychiatric sample. SOCS-13 clearly and significantly differentiated between average children/adolescents and youth under psychiatric care. Self-esteem, quality of life, and subjective social support were significantly lower in the psychiatric sample. Self-esteem, quality of life, social support, and psychiatric symptoms significantly predicted SOC. SOC was a significant predictor of grade average only in the school sample. Among psychiatric symptoms, emotional and behavioral problems were predicted by grades significantly. 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 require the understanding that symptoms may signalize that learning is needed to understand who they are and how to deal with their emotions.

Chapter 6: Discussion

The objective of the chapter is to discuss the quantitative and qualitative results of some variables associated with the interferences that can be observed in the education process, from a salutogenic perspective. The variables are demographic characteristics, self-esteem, psychological symptoms, social support, negative life events, and the main concept of the sense of coherence. The chapter interprets and discusses the results in relation to the literature and its implication in the lives of children and adolescents.

6.1. Discussion of Quantitative Results

The validation of the SOC scale in its original short form was necessary and relevant in this population due to the fact that there were only a few validation studies published specifically on adolescents and none on children. Furthermore, the questionnaire has not been validated on Hungarian youth. Therefore, we examined the psychometric properties of the Hungarian versions of SOCS-13 and SOCS-29 in children and adolescents. The 13-item SOCS had good reliability and validity in both age groups. Test-retest results showed higher correlation in adolescents than in children which could be explained by the shorter test-retest time and by the more reliable self-report style of adolescents. Our results are in line with earlier ones in adolescents (Eriksson & Lindström, 2005). Since there is no gold standard for the measure of the sense of coherence, SOCS scores were compared to a quality-of-life scale and a psychological and behavioral problem scale. Both convergent and discriminant validity showed good results.

The debate on the factor structure of SOCS has a long history. Antonovsky (1993) had the assertion that the components of SOC should be used as a unified constructs since they are interconnected. This view was supported by some researchers but debated by others (for a summary, see Erickson and Lindstrom, 2005). Most investigations were done with adults; the factor structure of the SOCS on children and adolescents was seldom studied. According to our results, the 3-factor model was superior to the one-dimensional in both age ranges. Other researchers had similar results on adult samples (Saravia, Iberico & Yearwood, 2014; Gana & Garnier, 2001; Balajti et al., 2006). Only three studies investigated the factor structure of SOCS-13 in adolescents, one concluded in a 2-dimensional structure (Zimprich, Allemand & Hornung, 2006), while two found the three-factor solution better (Moksnes & Haugan, 2013, Lim et al.,

2021). My results support the use of the three-dimensional model of the 13-item SOCS for both adolescents and children with the original dimensions of comprehensibility, manageability, and meaningfulness. A possible reason behind the differences in the factor structure of SOCS might be the different statistical methods and sample compositions employed (Zimprich et al., 2006) as well as the cultural meaning associated with the concept.

The author also compared the 13- and the 29-item versions of the SOCS in adolescents. Children were not asked to complete the longer version of the scale due to the higher administration time and the increased complexity of the questions. Even though SOCS-29 showed excellent reliability, results of the confirmatory factor analysis of the 13-item SOCS proved to be superior in adolescents. My results support the use of SOCS-13 in both children and adolescents.

Demographic and socio-economic characteristics are important contributors to the study of the sense of coherence. Therefore, the author compared children and adolescents from average and psychiatric populations on these features. Youth from the psychiatric population had less educated parents, lower income and higher divorce rate than youth in the average population. This is in line with the results in the literature. 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 affects their children's mental health in many ways. It 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). One of the crucial factors that increase father involvement in parenting seems to be education (Fakhrunnisak and Patria, 2022). 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). Fathers with better educational level had more participation in daily activities of children due to the openness and acceptance of their offspring (Juhari, Yaacob & Talib, 2013).

Youth whose parents are from low-income groups usually have low level of education or are employed (to help their parents) in low status occupation with an increased risk of emotional

difficulties (Kiernan & Mensah, 2009) due to the burden of life and the developmental crisis of adolescence. Low income of the family contributes to exposure to factors that interfere with self-perception of health and quality of life (Oliva et al., 2019).

Children from divorced families perform more poorly in multiple domains than intact-family children (Guidubaldi & Perry, 1985). Strohschein (2005) studied the mental health trajectories of children from divorced and married parents. Findings revealed that anxiety and depression in the children was associated with parental divorce. Those children whose parents divorced later exhibited higher levels of anxiety/depression and antisocial behavior than those children whose parents divorced earlier. Parental socioeconomic and psychosocial resources before the divorce fully accounted for the poor mental health of the children among those whose parents divorced later. Exposure to parental conflict and parent mental health explained poorer mental health in children of divorced parents (Lucas, Nicholson and Erbas, 2013). Based on these and my results, divorce shows a strong connection to mental health difficulties. Furthermore, poor mental health outcomes of children that exist before parents' divorce (Sun, 2001) do not diminish after parental remarriage (Amato, 2005) and increase regardless of whether separation occurred during childhood or later. The literature posits that children's mental health problems are the result of socioeconomic disadvantages, poor parental mental health and exposure to parental conflict (Lucas, Nicholson & Erbas, 2013). According to the study of Baxter et al., (2011) children whose parents had a hostile relationship had inferior emotional functioning regardless of parental separation.

The results of the present study showed that 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). Individuals from low SES families reported significantly more stress from unemployment, housing inadequacies, lack

of social support, and issues with their physical and/or mental health. Children from lower SES background had more mental health problems. The association between NLE, low SES, and mental health was modest however the explained variance of mental health problems raised substantially when NLE was joined to the regression models (Bøe, Serlachius, Sivertsen, et al., 2018).

The proper development of SOC, according to Antonovsky (1979), can be done only when General Resistance Resources (GRR) such as proper physical, emotional, and psychosocial environment, parents' educational level, financial security, social resources and coping skills to manage situations are fulfilled. When children experience the absence of GRRs it will decrease their SOC. The absence of GRRs is characterized by lack of consistency, lack of participation in creating outcomes, and lack of balance in overload-overload actions which are associated with deficiency of comprehensibility, manageability, and meaningfulness.

There are numerous studies about SOC in average youth, mainly adolescents but much less is known about the SOC of children and youth with psychological and behavioral symptoms. The author intended to fill this gap by investigating children and adolescents under psychiatric care and comparing them to average youth.

Low sense of coherence showed a strong relationship to psychological and behavioral problems. Emotional symptoms were associated with the lowest SOC 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; Rodrigues de Oliveira, 2021b). 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). Blom et al., (2010) even suggested SOC not to be an independent dimension but rather an inverse measure of persistent depression and anxiety. This is contradicted by our findings, namely that externalization type symptoms such as hyperactivity and inattention and conduct problems were also related to lower SOC in adolescence. Edbom et al., (2010) similarly found significant negative association between SOC and symptoms of

attention deficit and hyperactivity in a 16-year-old community sample. Their results are somewhat weaker than ours but this can be explained by the differences in the study populations (community versus psychiatric ill samples). Having any psychiatric diagnose was also connected to low SOC (Carlén et al., 2020). The early negative effect of stress and adaptation problems in childhood might lead to poor SOC and a wide range of psychiatric disorders. Furthermore, behavioral problems create difficult interactions and ruin social support that could help to cope with the environment.

The negative effect of psychological and behavioral symptoms was also associated with poor self-esteem, lower quality of life and lower social support in the present sample. Psychological problems and self-esteem are both known to influence sense of coherence 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). Crocker and Park (2004) associated low self-esteem with the development and expression of psychopathology. Zeigler-Hill (2011) concluded that individuals with low self-esteem are likely to use self-protective strategies characterized by reluctance to call attention to themselves, having aversion to risk, and preventing others to notice their bad qualities. Individuals with low self-esteem have an inclination to make internal attributions for negative outcomes. Any risk taken has a greater cost because they lack the resources necessary to protect themselves from the self-esteem threats that follow NLE such as failure and rejection (Tennen et al., 1987).

The association between self-esteem and psychopathology is clear in the DSM-IV-TR (American Psychiatric Association, 2000). The inclusion of self-esteem as a diagnostic criterion in the DSM-IV is in accordance with research showing that low self-esteem follows a number of psychiatric disorders and subclinical characteristics such as anxiety (Henning et al., 2007), depression (Orth et al., 2009), bulimia (Kugu et al., 2006), social phobia (Izgcic et al., 2004), anorexia (Gual et al., 2001), body dysmorphic disorder (Buhlmann et al., 2009), obsessive-compulsive disorder (Wu et al., 2006) and so on. Different models explain the association between self-esteem and psychopathology. The Vulnerability Model explains that self-esteem contributes to the development and maintenance of depression through intrapsychic processes

and interpersonal strategies (Orth et al., 2008) such as rumination, excessive seeking of security and sensitivity to rejection. In contrast, the Scar Model proposes that low self-esteem is the result of psychopathology. In line with this model, psychological problems destroy psychological resources, creating a scar that deforms the way that the subjects feel about themselves. For example, depression alters the way that an individual handles self-meaningful memory such as attention, encoding, storage, and retrieval (Orth et al., 2008).

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 & Tsiantis, 2004). Negative association between QoL and psychopathology are reported by many studies (e.g., Gander et al., 2019; Damjanović, 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. Children and adolescents characterized with low social support have denied the emotional, material, informational, and other kind of assistance that friends, peers and special ones can potentially provide (Thompson, Flood & Goodvin, 2015). The lack of social support can exacerbate the difficulties of youth with psychological disturbances. It is assumed that youth who are in dysfunctional relationships, social adversity or social isolation would be at risk of increasing their psychological problems. QoL in children and adolescents with psychiatric problems should be improved by reducing these symptoms. If this is not possible, the aim should be to improve QoL without reducing the symptoms. This means that QoL must become an important goal of psychiatric programs of treatment, especially when psychopathology tends to remain (Bastiaansen, Koot & Ferdinand, 2005).

Predictors of externalizing and internalizing problems during adolescence were investigated by Sourander and Helstelä (2005) who found that both internalization and externalization type symptoms were associated with lower sense of coherence, the relationship was stronger with internalization type symptoms. My results are in accordance with the above and other authors

such as Honkinen et al., (2009) who concluded that anxiety/depression and destructive behavior, delinquency were all associated with low SOC. Ristkari, Sourander, Ronning and Helenius (2008) showed that low SOC correlated with a wide range of self-reported mental health diagnoses, both internalizing and externalizing problems. They further investigated the relationship between internalizing symptoms and SOC in a longitudinal study and found that depressive symptoms at age 8 were associated with lower SOC at 18 years of age (Ristkari, Sourander, and Rønning et al., 2009). Comorbid internalizing and conduct problems had the leading association with low SOC in their research.

Literature shows that male adolescents report more externalization symptoms whereas female adolescents tend to be more vulnerable to internalizing problems (Braun-Lewensohn and Al-Said, 2018). Psychological distress, anxiety, depression, misbehavior and other internalizing or externalizing symptoms were examined by several researchers (e.g., Braun-Lewensohn & Sagy, 2010); Sagy & Braun-Lewensohn (2009); Gustafsson et al., (2010), Koposov et al., (2003), Moksnes et al., (2012); Moksnes, Espnes, and Haugan, (2013); Ristkari et al., (2009). All authors confirmed that a sound SOC decreased externalizing and/or internalizing symptoms; therefore, SOC can be considered a resilient factor (Braun-Lewensohn, Idan, Lindström and Margalit, 2017) for prevention of mental health exhibited in internalization and externalization symptoms.

The author compared sense of coherence in children and adolescents examining sex and age differences. Children had significantly higher SOC than adolescents. There are numerous studies based on adolescent samples (for a review, see Rivera et al., 2012), but fewer in children and none comparing sense of coherence in children and adolescents. Moksnes et al., (2012) studied a school sample between the ages of 13 and 18 and found significantly higher SOC in younger adolescents which shows a similar trend in a smaller age gap. The difference between the two age groups was explained partly by the transformation in components of self-definition such as interests, activities, and relationships that support self-esteem in childhood but not in adolescence (Pickhardt, 2013). Children learn and develop the ability to experience and communicate emotions and handle different feelings. SOC provides a singular and stable indicator of emotional adjustment during childhood; however, the passage to adolescence brings new opportunities but also challenges and difficulties (Idan et al., 2017). The lower sense of

coherence in adolescents may be related to biological, emotional and social adjustments in which these individuals are going through (Buddeberg-Fischer et al., 2001). It seems that a relatively higher SOC characterizes children during normal development which may be less permanent during the passage from childhood to adolescence as a consequence of the developmental transformation. The difference in SOC between the age groups seems to be present with or without psychological disturbances. The author found a strong relationship between emotional problems and SOC (also identified in a previous study such as Rodrigues de Oliveira, 2022b). Since depressive and anxious problems were more frequent in the adolescent group, this effect might also explain the difference in SOC even though emotional symptoms had the same effect on SOC in childhood as well.

According to the results of the present study males had higher SOC in almost all of the age ranges. This is in accordance with the literature (e.g., Moksnes et al., 2012, Myrin & Lagerstrom, 2006 and Honkinen et al., 2009). Sex differences were observed regarding adolescent samples in average populations (Räty et al., 2005; Myrin & Lagerström, 2006) and in psychiatric ones (Carlén et al., 2020). A review by Rivera et al., (2012) summarized the impact of sex and age on sense of coherence. They concluded that in most studies there was no sex difference in children younger than 15 years while males had higher levels of SOC in adolescent samples. The results of the present study contradict this finding since the author found that males had higher SOC in ages 11 and higher. When comparing children and adolescents, a significant difference between males and females was found in SOC only among children. There was a similar tendency in adolescents but the difference was not significant. A possible explanation for the different SOC by sex is the different ability to handle stressors such as emotional and somatic problems, internalization, social withdrawal and depression, more commonly found in females than in males (Räty et al., 2005). Furthermore, males tend to diminish reporting mental problems and amplify their own coping resources and competences, therefore the higher SOC in males might reflect gender differences in styles of self-reporting (Buddeberg-Fisher et al., 2001).

Children had significantly higher self-esteem than adolescents in the present sample. The high self-esteem in the younger group can be explained as a result of unrealistic inflation in childhood. The declination in self-esteem would happen as a consequence of more realistic

information about the self and the cognitive development during the transition to high or vocational school which produces more accurate evaluations of self-worth based on external feedback and social comparisons as well as more negative comments from parents, peers, and teachers. Age differences of self-esteem are conflicting in the literature. Birkeland et al., (2012) reported an increase in self-esteem whereas Robins et al., (2002) accounted for a decrease in self-esteem during adolescence. Affected by internal and external factors, self-esteem is a crucial component of the self-concept (Birkeland et al., 2012), a protective factor working as a buffer against adversities (Orth, Robins & Meier, 2009), and a potential GRR in adolescence (Moksnes & Lazarewicz, 2016). In summary, regardless of age differences, self-esteem is a positive and sound resource for SOC (Moksnes & Lazarewicz, 2016).

Quality of life was also higher in children. The perceived health related quality of life (HRQoL) is conceptualized as a multidimensional construct encompassing the physical, emotional, mental, social, cultural, behavioral and spiritual components of wellbeing (Eiser & Morse, 2001). Gender, age, personal, and family characteristics influence the youth perceptions of their QoL (Caldera & Hart, 2004). The SES also has an impact on QoL, and is often associated to academic background of the parents and the presence or absence of interpersonal conflict (Chen, Matthews & Boyce, 2002). Results of the present study are in accordance with Gaspar, Matos, Pais et al., (2009) who proposed that adolescents (aged 12 to 16) presented an inferior perception of quality of life. They and others confirmed the complex and multidimensional characteristic of QoL associated with physical aspects, self-esteem, optimism, positive and negative emotions, self-perception, autonomy, social support, family relation, school, peers and health-related behavior (Gaspar, Matos, Pais et al., 2009; Bronfenbrenner, 2005; Cummins, 2005; Gaspar & Matos, 2008; Ravens-Sieberer et al., 2005). Many studies endorse the impact of social and psychological variables in the subjective perception of QoL. Social and psychological factors affect cognitive, emotional and behavioral competencies (Cummins, 2005; Gaspar et. Al., 2006). The explanation for this is that children usually have more satisfactory relationship with their families and are involved in more activities with their families than adolescents (Matos, et al., 2006).

A similar result was found in relation to social support. Children felt that they had more social support from family and friends than adolescents. Social support has been associated with

several positive physical and psychological outcomes (Malecki and Demaray, 2002), SOC among them (Myrin and Lagerstrom, 2008). Gaspar, Matos, Pais et al., (2009) showed higher support for 10/11-year-olds than adolescents (aged 12 and up). Malecki and Demaray (2002) found that perceived social support from parents decreased as children moved from middle school to high school. Bokhorst, Sumter, and Westenberg (2010) added to this result showing that support from teachers were also lower in the adolescents' group due to the transition from elementary to secondary school (Bokhorst, Sumter, and Westenberg, 2010).

Children had higher overall SOC than adolescents. When comparing youth with and without psychiatric problems it is reasonable to assume that mental health problems disrupt the normal course of development. Based on my results manageability and meaningfulness are more sensitive to changes in mental health than comprehensibility. Manageability, the belief that there will be resources to solve the issues of life might be strongly connected to emotional problems in which the individual has low self-esteem, and pessimism. Meaningfulness, the motivation to invest energy to overcome the challenges of life, an essential part of sense of coherence according to Antonovsky (1987) can also be disrupted by emotional and anxiety symptoms where motivation and energy is lost. Other psychological and behavioral symptoms can also lower the energy and motivation of the individual on the one hand while increasing the challenges of life on the other. Since my sample included a high percentage of children and adolescents with emotional and anxiety problems, this can explain the evidenced negative effect on SOC in both age groups. Comprehensibility, the view of the world as structured and organized, requires higher level cognitive development and is probably more susceptible to psychological difficulties at older ages. This would explain the stable significant difference in this subcomponent of SOC between children and adolescents with mental health problems. The results underline a significant difference in SOC between the psychiatric and average populations. In agreement with Antonovsky's conceptualization of SOC as a GRR, the average sample showed higher levels of SOC, being probably more optimistic and feeling more in control of their lives and lowering the chances of the detrimental effects of stress on their health and well-being.

Higher SOC and higher self-esteem of youth showed weak association with parents' higher educational level and less youth negative life events. This finding has some support in the literature. Ristakari et al., (2009) examined associations between childhood psychopathology, family background and SOC finding that low parental education was associated with low SOC. Ristakari et al. (2008) found low parental education, parents' serious illness or death, divorce of parents and high-level symptoms of psychopathology associated with low SOC. Most self-reported psychopathology symptoms and the level of education of father's were independently associated with SOC in multivariate analysis.

The SOC of the child and the educational level of parents may be associated promoting more successful parenting and helping children to regulate coping processes with a positive understanding of life. Childhood living conditions, education, social support and financial resources respectively can be classified as some of the most important external GRRs (Volanen et al., 2004). Better chances for a sound SOC will be found among individuals who possess more GRR (Antonovsky, 1987). Analyzing from the perspective of salutogenesis, the associations between parents' education, SOC and self-esteem may be due to the greater capacity of the higher educational level of parents to support and keep emotional health of their children (Rodrigues de Oliveira, 2022a).

Self-esteem is a protective factor contributing to a better mental health through its role as a buffer against negative events as well as an optimistic evaluation about oneself and consequently a better overview of life. Moksnes and Lazarewicz (2016) found relevant association between SOC and self-esteem without the moderating effect of age and sex. Therefore, literature supports the positive role of self-esteem in the SOC of adolescents, equally strong for both sexes. Authors posit self-esteem as a potential GRR for the development of SOC (Marsh et al., 2007). Adaptation and coping are easily performed with a proper self-esteem being a valuable factor for SOC and psychological wellbeing during adolescence.

Individuals with a high SOC experienced less NLE (Surtees et al., 2006) while individuals with poor SOC were more subjected to NLE (Volanen et al., 2007). This is in line with my results showing an inverse association between SOC and negative life events. Antonovsky (1979; 1987) proposed that SOC protected subjects from the negative life experiences and at the same time

prevented them from experiencing NLE. Individuals with a high SOC are able to cope with stressors adequately. Groups from low socioeconomic levels are more susceptible to stress due to fewer resources to cope with than their higher income correspondents. The lower sociodemographic groups have less reserve capacity and therefore break up when facing NLE and situations that require resources that they don't have or have few for renewal (Matthews et al., 2010).

Mayer et al. (2009) examined the association between stressful life events in a clinical sample of depressed children. Their results indicated that while the average sample experienced an increase of stressful life events as a function of age, the clinical sample had twice more NLE. Depression in children was significantly and strongly associated with parental health, death of relatives and other intrafamilial events. My results are in line with these earlier ones, also showing increased occurrence of parental and child NLE among children under psychiatric care. NLE was among the predictors of sense of coherence and self-esteem in my results. Negative life events encompass many types. Garcia-Moya, Suominen and Moreno (2014) studied bullying victimization and its impact on adolescents. Adolescents who had poor SOC were more likely to suffer bullying and had more physical and psychological symptoms of distress while adolescents with strong SOC had less psychological effects and complains. It seems that adolescents with poor SOC are at risk of becoming victims of more NLE such as bullying which affects other aspects of developments of youth.

Eggleston, Watkins, Frampton and Hanger (2020) found that children, adolescents and their parents graded bullying as an NLE that strongly decreased their self-esteem. According to Brito and Oliveira (2013) male adolescents were less affected by bullying than females. Literature recognizes that peer relationship problems such as bullying are associated with low self-esteem. O'Moore and Kirham (2001) showed that children who were victims or aggressors had significantly lower self-esteem than children who never experienced bullying. The more the bullying happened, the lower their self-esteem became. The authors concluded that high self-esteem protected from involvement in bullying behavior and recommended that parents and teachers should prevent feelings of poor self-worth among youth.

The result of my research revealed that self-esteem, QoL, social support and psychological/behavioral symptoms are all important factors in understanding SOC. The above variables predicted 64.6% of the variability of the SOC. Social support may buffer the negative effect of psychological symptoms on SOC, or self-esteem may mediate the relationship between QoL and SOC. Future research can continue to investigate these interactions to better understand how these variables act together influencing SOC. Furthermore, it is worth noting that the high percentage of explained variance suggests that interventions targeting these variables may lead to improvements in SOC.

High self-esteem is characterized by self-confidence, positive self-evaluation and competence, medium self-esteem by oscillation between approval and rejection of self and low self-esteem by inadequacy and inability to face challenges (Scibigo et al., 2010). Several researchers considered self-esteem a relevant contributor for SOC on adult and adolescent populations. Moksnes and Lazarewicz (2016) found a positive relationship between SOC and self-esteem when controlling for age, sex, subjective health, and stress. Primarily secure emotional attachment and active participation of children in the family decisions are essential for the development of a strong SOC (Sagy & Antonovsky, 2000) and self-esteem. The value that parents give to the children's intentions and initiative may be internalized forming the structure of self-esteem (Johnson, 2004). The concepts of autonomy, self-assurance and the experience of basic trust are found in many theories that explain self-esteem. Autonomy or the ability to govern oneself; the self-assurance meaning what we believe that we can do with what we think we have to do (Sudirman and Rahmadani, 2020); and the trust in ourselves form the root of self-esteem. Internal stress resulting from depression, anxiety and social withdrawal may negatively affect self-esteem and result in lower academic performance and lower SOC compromising social skills and future psychological adjustments (Honkinen et al., 2009).

Several studies on the association between SOC and QoL show that a high SOC is related to a high QoL (Eriksson & Lindstrom, 2005). Those adolescents who have high SOC also report a healthy style of life and better quality of life (Honkinen et al., 2009; Neuner et al., 2011). This assertion strengthens the consideration of SOC as a resilient factor. Blom, Serlachius, Larsson, et al., (2010) emphasize that health professionals should identify adolescents with psychological

and psychiatric problems such as Major Depressive Disorders, anxiety and their comorbidities which have a high negative impact on the QoL of youth.

Research on social support emphasizes that the presence of others in stressful circumstances enhance mental health (Srensen, Klungsyr, Kleiner & Klepp, 2011). Social support may be operationalized by emotional support, care, information, material assistance and so on (Cohen, 2004). Antonovsky and Sagy (1986) concluded that stable social support may improve SOC. Several types of social support were investigated (e.g., from classmates and teachers (Natvig, Hanestad & Samdal, 2006), from friends and peer groups (Evans, Marsh & Weigel, 2010; Marsh, Clinkinbeard, Thomas & Evans, 2007), all of them revealing the association between social support and SOC. Volanen et al., (2004) proposed reciprocal relationships suggesting that high scores of social supports may contribute to SOC and a strong SOC may benefit from good social relationships. Srensen, Klungsyr, Kleiner and Klepp (2011) specified that the association between social support and SOC enhances with the number of NLE experienced, therefore all three variables should be considered for health promotion.

The association between SOC and psychological/behavioral symptoms may be explained by some related factors. If untreated or presenting with serious symptoms, the psychological issues have long-term effects and increase the probability of psychiatric problems (Sourander & Helstela, 2005) and low self-esteem both of which are also related to a decrease in SOC. The presence of emotional problems also imply that these individuals lack skills to identify useful resources and balance stressors adequately (Volanen et al., 2007) therefore for them life seems meaningless, chaotic and unmanageable. According to the results of the present study internalization symptoms (emotional problems) were associated with lower SOC than externalization symptoms (conduct problems and hyperactivity/inattention problems). In this matter a strong SOC might act as a protective factor for emotional problems (Idan, Braun-Lewensohn, Lindström & Margalit, 2017) as well as for symptoms of inattention and hyperactivity in young adulthood (Edbom et al., 2010). Overall, the finding that these variables have a significant predictive value on SOC is an important contributor to our understanding of this concept and may have practical implications for future interventions aimed at improving children and adolescents' sense of coherence.

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.

It has been shown in other studies that SOC has a positive influence on self-esteem (Johnson, 2004; Pallant & Lae, 2002) and that self-esteem and academic achievement are bi-directionally related (Baumeister, Campbell, Krueger & Vohs, 2003). According to the results of this study, self-esteem weekly but significantly correlated with grade average. The majority of studies indicate that self-esteem associates with academic achievement although the relationship may sometimes be weaker than what would be expected (Baumeister, Campbell, Krueger & Vohs, 2003). Other authors (Bowles, 1999) understand that high achievement in school influences self-esteem and not the other way around. This argument would explain why the self-esteem of youth with psychological symptoms and other related difficulties would not be nurtured to the point of being associated with SOC, therefore the creation of positive school experience would be crucial since low self-esteem is associated with behavioral problems. On the other hand, youth with higher self-esteem tend to be more motivated which can lead to a greater academic success.

As the author of the present research is interested in understanding the mechanisms by which self-esteem (directly or indirectly) can interfere with academic achievement, the discussion continues showing how literature presents other possibilities of understanding. Specific self-esteem (specific self-evaluation) reflects the individual's sense of competence across particular domains, such as academic competence which is more influenced by contextual factors (Campbell & Lavalley, 1993). In low academic achievement, students may deal with the threat of

poor academic achievement by organizing themselves around an anti-institutional culture (being bad at school). Peer groups can play an important role in this reorganization of values, so through affiliation mechanisms youth identify themselves with the group (Senos, 1997). By this method, global self-esteem is protected, apparently not influenced by academic failure (Robinson & Tayler, 1986). One of the qualitative interviewees, Emma, had low academic achievement. During the interview she described her aspirations to be an actress and how she depended on her close friends to nurture her self-esteem.

Harter (1998) suggested another way of maintaining self-esteem at acceptable levels. Students reduce their investment in areas that represent a threat to their self-esteem related to school and invest in other areas that are potentially more rewarding. In this way, students with poor results at school are able to protect their self-esteem by reducing their investment in the academic subjects and investing in other domains in which they perform well, such as sports or interpersonal relationships (Alves-Martins, Peixoto, Gouveia-Pereira, Amaral & Pedro 2002). Alves-Martins et al., (2002) found that eighth and the ninth-grade students' negative attitudes towards school might help low-achieving students not to devalue themselves, despite their poor academic achievements. In lower grade this rejection does not appear to be enough to enable low-achieving students to maintain their self-esteem. It seems that lower grade students attach more importance to school than their older peers. This comparison reveals a gradual fall in the value attached to school over the 3-year period from seventh to ninth grades which may also explain the predictability of SOC by age.

The concept of SOC created by Antonovsky (1987) intends to explain why some people become sick under stress while others stay healthy. According to Lindstrom & Eriksson (2011) and Moksnes et al., (2012) the development of SOC is a lifelong process with special characteristics along adolescence as a result of developmental fluctuations, transitions and challenges occurring in this period. Antonovsky claimed that an individual emerges from childhood with a temporary sense of coherence that becomes more defined in adolescence. He further suggested that individuals develop a generalized way of looking at the world as more or less coherent by around age 30. Therefore, SOC may be less stable in adolescence than in childhood and adulthood as a

result of the nature of the adolescent period of development. Psychological disturbances, particularly anxiety and depressive symptoms complicate the situation more.

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).

Mental health problems in childhood and adolescence account for a large incidence of problems on educational attainments (Currie, 2005). We found in the psychiatric in- and outpatient child and adolescent sample that emotional and conduct problems were inversely related to overall academic achievement. Efrati-Virtzer and Margalit (2009) compared children with and without behavior problems and found that students with behavior difficulties showed lower academic grades as well as higher levels of hyperactivity and aggression. Children who have disruptive behavior probably have trouble in school. Usually, they have difficulty in paying attention or completing tasks (Currie & Stabile, 2006) which result in lower academic achievement and worse grades.

The variables that contribute to the development of a disorder are influenced by biological (e.g., sickness), psychological (e.g., death of parents, mother's depression) and social (lack of financial resources) factors besides the adaptation that the individual is able to make to the environment, to challenges and to negative life events (Antonovsky, 1987). Negative peer group relationships (such as bullying) and negative family dynamics (such as parenting style characterized by aggressiveness and rejection) are associated with mental health problems in children that can last into adulthood (Basadre, 2014).

Especially in adolescence, schooling becomes a powerful stressor negatively influencing self-esteem, social competences and future expectations which can contribute or aggravate the onset of affective disorders. Psychological symptoms associated to mental health are common in youth and may include anxiety, depression, opposition, conduct problems, obsessive-compulsive behavior, attention deficit and hyperactivity (Parry, 2005). Researchers found significant relationships between poor academic achievement and attention deficit disorders (Jangmo, Stalhandske, Chang et al., 2019), post-traumatic stress disorders (Thompson & Massat, 2005) and depressive disorders (Atienza, Cuesta & Galán, 2002). A depressive disorder can cause poor academic achievement and low academic achievement may be associated with depression (Atienza, Cuesta & Galán, 2002). These behaviors may impede learning and social opportunities requiring a considerable effort to be healed or effectively handled.

Psychological symptoms may affect children and adolescent's academic achievement triggering school failure (McLeod, Uemura, Rohrman, 2012) making youth fall short of their own expectations and the parents' expectation which may reactively make them to engage in more problematic behaviors. Disruptive behaviors such as oppositional, impulsive, aggressive, and hyperactive behaviors are treated by teachers and peers as challenges, since they disturb classroom and are associated with social deficits predicting academic underachievement (Gresham, Lane & Beebe-Frankenberger, 2005; Efrati-Virtzer and Margalit, 2009).

Academic performance is one of the indicators most valued by parents and teachers when it comes to evaluating the behaviors of youth. Poor academic achievement will generate diverse consequences in family relationships (disagreements between parents, parent-child conflicts and family-school conflicts) which in turn can trigger feelings of guilt, negative self-esteem, deficient perceived academic abilities adding to the factors that were already influencing poor performance (Atienza, Cuesta & Galán, 2002). Although achievement pressure from parents and teachers intends to be a protective factor, they may bring additional negative constrain. Psychological symptoms in childhood and adolescence usually are associated with emotional, social, physical, and academic deficits (Atienza, Cuesta & Galán, 2002) that need to be overcome because youth with school failure have diminished possibilities of integrating satisfactorily into the labor market (Lucas, 2007).

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.

When average and psychiatric groups were analyzed separately, SOC was a significant predictor of grade only in the average sample. Grade was not predicted by SOC, self-esteem, age or gender in the psychiatric sample. When the different symptom groups were investigated separately, only emotional symptoms and behavioral problems predicted grades significantly in the psychiatric sample. It is possible that the high percentage of psychological symptoms and psychiatric illness in our overall sample weakened sense of coherence and consecutively masked the effect of SOC on grades. This was supported by the results on the average school sample where SOC and age were found to be significant predictors of grade average of last year.

According to the results of the present study, grade average was only weakly associated with SOC and psychological/behavioral problems. 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.

Buchmann, DiPrete and McDaniel (2008) performed a comprehensive review finding inequalities between male and female students' academic scores. In general males had worse academic scores however the inequalities were complex showing different characteristics that should be interpreted in association to variables such as family resources, behavior related to school, individual and institutional factors, etc. Another study showed that American males earn lower grades during middle and high school (Clark et al., 2008) and complete education with

lower scores than their females' classmates (National Center for Education Statistics, 2004). Academic performance is also found to be superior in girls in Great Britain (Gray et al., 2004). In Germany, females earn better grades in general. Studies comparing children and adolescents' academic achievement are scarce, Ewing-Cobbs, Fletcher, Levin et al., (1998) investigated youth who suffered brain injury. They found that independent of injury severity, adolescents had lower scores than children on sub-tests of computational arithmetic and reading comprehension.

Being under psychiatric care, age and gender of youth, self-rated psychological and behavioral problems and SOC together explained 25.4% of the variance in last years' grade average. Academic success exerts a relevant influence on youth's life as an indicator of psychological improvement and a source of rewards and satisfaction (Salmela-Aro & Tynkkynen, 2010). Youth who have high SOC, when managing their own learning processes, are confident in their capacity to accomplish school demands (Kristensson & Ohlund 2005; Honkinen, Suominen, Välimaa et al., 2005; Oliva, Cunha, Silva et al., 2019); they accurately plan and organize their school activities, are not discouraged by disappointments, recognize difficulties as challenges, persevere in their efforts to accomplish school tasks, choose peers who share the same interest in achievement and create conditions that promote learning (Caprara et al., 2008).

Age is understood to have a significant outcome on the levels of academic achievement. Cetin (2016) performed a study aiming to determine if different (deep or surface) approaches to learning and age significantly correlated to academic achievement in childhood education. He found that there was a negative relationship between students' age and the used approaches to learning as well as a relationship between child's age and deep approaches. According to his results, only age was a significant predictor of GPAs. Wasonga, Christman, and Kilmer (2003) studied protective factors predicting academic achievement among students. Their findings suggested that gender and age predicted resilience and academic achievement. Reynolds, Scheiber, Hajovsky et al., (2015) investigated gender differences in academic achievement in a nationally stratified sample of children and adolescents ranging from 7–19 years. They found that females had the higher latent reading ability and higher scores on a test of math computation. Females scored higher on spelling and written expression.

As extensively discussed above, psychological symptoms affect youth's academic achievement (McLeod, Uemura, Rohrman, 2012). Disruptive behaviors such as oppositional, impulsive, aggressive, and hyperactive behaviors are associated with social deficits predicting academic underachievement (Gresham, Lane & Beebe-Frankenberger, 2005; Efrati-Virtzer and Margalit, 2009). Pritchard and Wilson (2003) found that students' emotional health/psychiatric symptoms were significantly related to academic achievement (e.g., youth who were depressed had lower grades when compared to youth who were not).

Therefore, particular interest should be given to investigating the predictors of youth's success at school. Educators must identify student characteristics that can be modified in the school routine and practice to promote better academic performance. SOC functions as a characteristic of personality that helps youth turn their worldview into more coherent behaviors conducive to academic achievement.

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 require 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.

Before closing this subsection, the author calls the attention of the health professionals and educators to the relevance of the early assessment of psychological/behavioral symptoms and sense of coherence considering the age and gender of the youth in order to prevent deterioration in grades and give support for the adaptation of changes occurring during these stages of life. Specific strategy will be suggested in the conclusion chapter.

6.2. Discussion of Qualitative Study

The analysis of the qualitative interviews provided rich material with data that add existential interpretation to the quantitative data. The interviews showed that one of the most relevant ways to gain an understanding of youth is by listening to them. Listening to adolescents and helping them to analyze their experiences promote self-understanding and healing. Postmodern West

society has mostly given up on man's spiritual dimension triggering what is called the existential vacuum. A rising number of adolescents need psychological and psychiatric care. It is evident that those adolescents are in great emotional pain and need psychological support. It is necessary to help adolescents to focus on their resilience, strengths, and own cope abilities. The adolescents' response may be understood in association with their symptoms and inability to make healthy connections with the external world.

Understanding of the External World

a) "I don't understand the external world"

According to the assumptions of Antonovsky (1987), it is not necessary to have a high sense of comprehensibility, manageability and meaningfulness in all areas of our lives to have a high SOC, however there are some key subjective dimensions in which the individual must feel coherence. Sartre, and Heidegger, existentialist authors explained how the first area in which it was necessary to experience sense of coherence was in the external world in which we live.

Heidegger characterized his philosophy using a German word called *Dasein* which means, 'to exist' (Heidegger, 2010). He captured the distinctive situation of the human being depicted in a complex interplay of multidimensions such as social and personal which would be relevant to understand the external world.

The external world within the society builds up an intricate web of emotions, thoughts, and social roles that create a visceral experience (Nelson, 2022). Heidegger remarked that one of the most relevant ways to gain understanding and self-understanding is to be involved in totalities of tasks, roles, projects, and so on. This is why usually subjects describe themselves according to their seat or position in their environment. Therefore, the totality of relationships and circumstances including other people, objects around them are used as helpers to know and characterize each one of us.

Heidegger called this experience of humans in a social situation, *being-in-the-world*. The lack of understanding of the external world combined with other personal weaknesses may have triggered the existential emptiness and emotional symptoms found in John, Emma, Greta,

Charlotte and Sabrina. Not one of them found an existential meaning in the external world. While answering the questions about the external world, John characterized it as “*unpredictable*” and “*hard to understand*”, associating it with the feeling of powerlessness; Greta expressed feelings of “*sadness*” while Sabrina showed “*hopelessness*”.

b) “*I understand the external world through internet or by reading about it*”.

Robert in some way may represent the contemporary man characterized by an existential vacuum and a life driven by the technological world. A series of social, political, cultural, and economic disruptions over the 21st century driven mostly by the convergence of digital, biological, and physical innovations is discussed by Schwab (2018). The negative impact of the increasing dependence on technology is reported by Johnson (2020) who discovered that the overdependence on technologies, such as social media, can negatively affect people, making them feel more depressed, isolated and anxious. Patients consult psychiatrists and psychologists with narratives of illness, suffering and worries. Indeed, health professionals can ignore medicine’s conspiracy to palliate and hide despair by failing to understand patients in a search for meaning (Schimmoeller, 2019). With this thought in mind, one helpful paradigm would see patients in a search for meaning (Schimmoeller, 2019). This approach is particularly important in the apparently meaningless Postmodern society driven by the internet, fast information, and high technology but lacking transcendence. With this skepticism, the Postmodern West has mostly given up on man’s spiritual dimension suffering from what is called the existential vacuum manifested nowadays as boredom. Morality, bioethics, and the meaning of life are approached as if everything came from nowhere, were going nowhere, and for no lasting and ultimate purpose (Engelhardt, 2017) making the individuals anesthetized by the radical materialism of Postmodernity.

As life seems meaningless to him, Robert also does not understand the external world and looks at it superficially, trying in vain to find its meaning outside of himself, which only deepens his state of helplessness. Robert was brought for psychiatric treatment by his mother for harboring suicidal thoughts as a result of moving from one country to another. Robert feels helpless, lonely, meaningless and friendless, besides the fact of being unable to speak the language.

Victor Frankl, an Austrian Jewish psychiatrist known for his book, *Man's Search for Meaning* (1990) described how his personal experience within Nazi concentration camps resulted in the creation of his theory called Logotherapy. The death camps experience provided the foundation for his later psychiatric practice in assisting patients to find meaning in their lives regardless of external circumstances. Frankl's approach defends the spiritual quality of man (that is not circumscribed to a religious sense) characterizing it as superior to the psychological dimension. He proposes that spirituality is a domain of human existence in which one encounters meanings and values. Therefore, existential frustration comes in when the search for meaning goes unfulfilled.

Frankl highlights the crucial role of meaning in mental health and diverges from reductionist psychology by proposing a meaning-oriented theory. He recognizes man as a spiritual being in need of meaning. Accordingly, emphasis on freedom, responsibility, and listening to the conscience is associated with meaning, as well as the place of acceptance of suffering, which is a crucial experience in the discovery of meaning.

During the interview Robert referred to a purposeless and insignificant routine, a lack of control and responsibility over his life creating feelings of sadness associated with his thought of suicide. *"You can live without a reason (...) I don't really think that is a reason (...) You don't need a reason to live"*. Frankl identified and described a collective neurosis, a kind of disorder that arises from the modern conditions of life. It is characterized by four major symptoms: an aimless day-to-day attitude toward life that emerges from uncertainty about the future, a fatalistic attitude arising from a lack of control over one's own life, a collective thinking in which the individual, for the sake of security, gives up personal responsibility and adheres to the judgment of the group and fanaticism that leads to the denigration of others who think or act differently (Das, 1998). Frankl associates these symptoms to human fear of responsibility and to the desire to escape from freedom (Frankl, 1967).

Management of External World

a) *"I don't manage the external world"*

John, Robert, Greta, Charlotte and Sabrina answered that they don't know how to manage the external world. Let's understand the participants' responses using Heidegger's theoretical formulations (Heidegger, 2008). The insights of Heidegger about the human condition were the fruit of his understanding of what happened cognitively when a person opened a door using a doorknob. Using the illustration of Heidegger, the human mind apprehends the totality of the situation of the doorknob including its function and purpose in relation to its environment and context. If we consider the above situation, a doorknob would be understood and managed as a consequence of its situation in the relationship of the door, walls, hinges, and its purpose and function. In accordance and interaction with the external world, a doorknob is used to open a door and not for other purposes.

The adolescents' response may be understood in association with their symptoms and inability to make healthy connection with the external world and others. Heidegger's analogy and considerations can be used to understand why adolescents' responses are negative in relation to managing the external world. Human beings naturally try to manage their external world in order to reach comfort, safety and accomplishment of their needs. Therefore, when individuals don't understand how to manage their external world in relationship with their major activities, it can compromise their own self-understanding which is always a function of themselves in relation to other entities including other people, objects, social, and historical circumstances.

b) "The external world should be managed to defend innocent people"

It is clear that Emma was referring to herself and how she eventually felt threatened in her relationship with her parents. Different scholars give contrasting explanations and classifications of the meaning of life and the external world (Bradley, 2015). For consonant supernaturalists, the meaning of life is given by a deity. If there is no deity, consequently there is no meaning. For subjectivists, the meaning is given by the subjective state of the individual. Others understand that meaning results from involving oneself in valuable goals and activities. One can make a difference in the internal and external meaning of life such as by making a positive contribution to the world through a life devoted to helping the poor. In contrast, an internal life meaning would be associated with worthwhile activities for the subject. Having a life with a high external meaning may bring a high internal meaning; therefore, these two types of connotations are associated. It seems that this is the case with Emma when she highlights the relevance of

defending innocent people. However, from another angle, it looks like she is talking about herself.

The way that Emma behaved suggested that she was using a lens of victimization. The feeling of victimization by the individual is an etiologic variable for the development of psychological/psychiatric disorders in both childhood and adulthood (Molnar, Buka & Kessler, 2001) even though this victimization would not be real just felt emotionally.

Victimization has several consequences and works through different mechanisms. One that explains both short and long-term distress outcomes is the damage to the self-concept that occurs in response to victimization which affects mastery and self-esteem. Mastery is characterized by the way someone views one's life chances as being under one's own control in opposition to being fatalistically governed (Pearlin & Schooler, 1978). Sense of coherence (Antonovsky, 1987), locus of control (Rotter, 1966), and self-efficacy (Bandura, 1982) are concepts associated with mastery incorporating the idea of personal agency with the understanding that the individuals are causally relevant to their own life outcomes. In regard to self-esteem, the classical definition is given by Rosenberg (1989, 1986) as "the evaluation which the individual makes and maintains towards oneself expressing an attitude of approval or disapproval towards oneself" (Rosenberg, 1989).

The relationship between Emma and her parents is characterized by arguing, lack of understanding and acceptance. Emma oscillates between feeling like a victim and the impulses to impose her own will using suicide attempts to resolve the conflict. Children develop an understanding of the world as reliable and trustful and a perception of themselves as able and lovable based on positive relationship with parents or caregivers (Bowlby, 1982). Children whose caregivers are indifferent or careless or interpreted that way are more likely to develop perceptions of themselves as victims and unworthy (Kim & Cicchetti, 2006) as well as less supplied to accomplish critical developmental tasks compromising emotional health.

Meaning of the External World

a) *"I don't know the meaning of the external world"*

Emma, Greta and Charlotte didn't know the meaning of the external world. However, human beings build their personal characterization, definition, purpose and self-understanding by their intersection, association and entanglement with their external world. It is by being in the world that the individuals build themselves (Nelson, 2022). Of course, there are complex interactions in different levels of our lives and nobody has the fully comprehension of everything. However, the seriousness of this human condition is to be in apparent meaningless world when other circumstances such as negative life events and low self-esteem add a heavy burden which may lead to experience a lack of sense of affiliation. Frankl and other positive psychologists propose that human beings are composed of body, mind, and soul or spirit but most importantly a person is not born in isolation but in a relationship. Human beings must be understood in their relationship with culture and society.

Frankl, differently to Sartre and Camus, believed that humans discover meanings. According to Frankl meaning permeates the whole universe and human beings just need to observe and find it. The human spirit would be the instrument that allows this comprehension. The essence of human beings is the spirit, the core of health meaning that the mind can be disturbed and the body sick, however, the spirit can lift them up (Das, 1998). No matter all circumstances of adversity, life always has meaning. In addition, the emptiness, despair and doubt will be overcome when meaning is found (Frankl, 1990).

b) *"The external world is meaningless"*

Nietzsche (2006) wrote about how the values that had originally been so precious (such as the basis of ethics and God) would have perished and that "God is dead". Nihilism represents the lack of meaning as well as the state of meaninglessness. But in this case what would drive humans forward in relationships, work, and life in the external world? Some background is necessary to orient through right/wrong and to give a purpose to live. Without guidance, someone, especially an adolescent, can be led to inner despair as well as to disconnect from sound rational thinking and emotional health. A small extract from the interview with John can exemplify his existential state in this matter: *"I am an existential nihilist. So uhm. I don't believe in a meaning of life, or like why we're here or in a God or any higher power because I'm an atheist and existential nihilist so I... I don't think the world has any meaning"*.

The term Nihilism is often used as a derogative word for ‘life-denying’, a very destructive and depressive approach in philosophy (Veit, 2018). Philosophy asks for the meaning and purpose of the external world, and certainly for the meaning of human beings as well. Previous to the Enlightenment and Early Modern period, this question of meaning was answered in two ways: one referring to a theological purpose, ethic, and a “plan” (telos) for the individuals; another to claim cultural norms and traditions of society to give purpose to the subjects. Nietzsche declared that these two paths were void (Nietzsche, 2005) creating nihilism which reduces all values to null. Existential nihilism refers to a state of mind in which nothing has value or meaning (Goudsblom, 1980). Veit (2018) defines nihilism as the negative way of denying objective values such as moral nihilism referring to no objective morality, no inherent goodness or wrongness. He suggests that moral nihilism is generally associated with immoralism while existential nihilism is often associated with destructive behavior and suicide. John was brought to hospital by paramedic ambulance. Suicide attempt, anger, sleeplessness, guilt, negative thoughts, anxiety, negative self-esteem, difficulty concentrating and self-aggression were some of the presenting symptoms. After medical examination he was referred to the psychiatrist and admitted to hospital where he remained for 2 months in treatment. His diagnoses included major depression, anxiety and emotional disorder.

According to Veit (2018), the question of suicide coincides with Camus’ question about whether life is meaningful. Besides John, Robert and Sabrina also said that life is meaningless. Camus (1955) affirms that life is meaningless, but claims further that even within the limits of nihilism it is possible to find the way to go ahead. With this idea in mind, the unreasonable derives from the fact that in spite that life is without meaning and the universe is void of purpose, men long for meaning, significance, and purpose by any means (Veit, 2018).

Many authors have discussed this philosophical issue and interpreted it in different ways. Sartre, Camus, and Heidegger assumed that purpose and meaning should be understood in a new self-creating way actively created by individuals, not passively received from an external source. Woodward (2009) understood that this approach to the external world might lead to a lack of

guidelines to evaluate or choose between possibilities or decide about actions that will certainly bring harm to the mental and emotional health of an adolescent.

Understanding of Life

a) "Life is a complex interaction between cells"

Several philosophical questions such as the above "how life should be understood?" certainly may be answered by science, however, an advocate of 'scientism', maintains that only science is the one reliable guide for it. This is the case of John who affirmed: *"I... I'm a big believer in science. I wanted to be a physicist for a while (...) mechanical physics, theoretical physics and quantum physics they all interest me"* therefore for him only science can give an explication: *"I see life as just a series of complex interactions between cells (...) but I see it as a biological thing"*

Scientism will explain the deep desire of man for meaning and purpose as an evolutionary sub-product of the process of evolution and adaptation of life on earth and from the need to predict interaction with nature. But can science at this moment provide an explanation for human existential circumstances? Can only science really answer to what is the meaning and purpose of our lives? Can only science, at this moment, offer an answer for the suffering, the inequalities, and the difficulties in relationships?

Since the paradigm of science is materialistic it would be valuable to include holistic approaches to analyze human existential circumstances such as the salutogenic framework. Johansson et al., (2018), for instance, presented the implementation of an emergency child and adolescent psychiatric unit based on a salutogenic approach. The new unit used eight General Resistance Resources (explanation to admittance, accessible staff, clear language and daily information linked to Antonovsky's cognitive and emotional GRR; participation in decision-making, maintaining contact with family and friends linked to interpersonal relational GRR; advice about self-help linked to the valuative GRR and satisfaction with decorations and furnishing linked to material GRR) to form the base of work for the staff with patients and parents. Following the implementation, the treatment model was evaluated by patients and parents reporting both treatment satisfaction and improvements in the general situation of patients. Reductions in the length of treatment and readmission rates were also found.

b) “I don’t understand life”

Robert, Emma, Greta, Charlotte and Sabrina didn’t understand life. While describing how she tried to understand it, Greta was in fact talking about her life with symptoms: *“I just think about it and talk with my friends and my family, my doctors about it, but it’s hard. I don’t know... like feels weird and different than other people’s lives. It is hard to understand when you were struggling with something and why.... why ... so it’s just hard.”*

A rising number of adolescents need psychological and psychiatric care, bringing pressure to inpatient facilities that already declared restricted treatment resources (Rocha, Graeff-Martins, Kieling et al., 2015). The use of psychotropic medication reduced the mean length of stay and treatment lengths (Case et al., 2007) but resulted in a corresponding increase in readmissions (Tossone, Jefferis, Bhatta et al., 2014) due to the need of elaborate their emotions and psychological symptoms.

Emma confessed: *“(...) I really don't know (...) I don't think that with my life ... I can...I can be a person to grow up and do good things”*. Sabrina subtly doubted the justice of life expressed in everyday events where so many seemingly unfair things happen for no reason: *(...) “and sometimes things happen to some people, and the same things don’t happen to other people. These could be great things and these could be tragic things as well and for example, I don’t understand that. Like, how the people are picked...who these things happen to...so I... I don’t think I can understand that many things”*.

It is evident that those adolescents are in great emotional pain and need psychological support. However, another relevant aspect is that emergency units have limited access to psychosocial treatment programs to promote psychological improvement (Bettmann & Jaspersen, 2009).

Management of Life

a) ‘I manage my life by thought’

One of the most recognized authors studying human development, Piaget (1964) stated that adolescence is characterized by the supremacy of the ability to think. In this sense, the teenager

is an individual who thinks about thought and uses this newly acquired skill indiscriminately, needing a long period of tests, trials and errors to adjust it according to life experiences.

The answer of John about the question of life management can illustrate this premise of Piaget: (...) *“a lot of people like to manage their lives by having a routine and never changing because they think that will bring order and understanding to their life, but I don't agree with that.... I... I manage my life by thought and understanding. Well, I... I... I guess, recently because I am in here for suicide”*

During adolescence, the individual goes through a process of transformation in which the concepts and ideas of childhood transform into a new perception of the external world, life, and oneself. These new perceptions are the result of the increase in cognitive abilities and personal and social awareness that comes with this developmental process (Fitzgerald, 2005). However, in order to achieve identity, the adolescent must create a coherent image of the external world and integrate the countless, and sometimes incoherent information produced by different sources in their context (Marcia, 1966).

The requirement to evaluate one's own internal and external life forces adolescents to look for an authentic self, stimulating the potential sources of meaning in life (De Vogler & Ebersole, 1983). The need to seek meaning can be understood as an adjustment in coping with hardship which may lead to psychological growth (Halama, 2000). In terms of development, the ability to plan, interpret, and manage one's own life and involve oneself in a reflection of meaning may be a relevant part of daily routine (Pasupathi, Staudinger & Baltes, 2001).

b) “I manage my life really bad”

The answer of Charlotte is characterized by extreme feeling of hopeless due to her inability to handle her symptoms and life issues. A usual engagement in aggressive and anti-social behavior may be the result of a hopeless feeling from an adolescent (Bolland, 2003). Hopelessness is characterized by negative emotions and anticipation of a failed future (Beck, 1963). Without hope, and the need to face negative life events can result in the conclusion that the issues are too hard to overcome conducting to avoidance and escapist strategies rather than effective coping (Brassai, Piko & Steger, 2012). The absence of hope and meaning in life or the combination of hopelessness and meaninglessness is associated with aggressive behavior and involvement in

health risk behavior among adolescents (Brassai, Piko & Steger, 2012) such as the existential situation of Charlotte.

c) “I don’t manage my life/I don’t know how to do it”

Robert, Emma, Greta and Sabrina answered that they don’t manage their lives, implying that they don’t know how to do it. It is necessary to help adolescents to focus on their resilience, strengths, and own cope abilities. Emma oscillates between blaming herself and others for her traumas and driven by an uncontrolled impulse threatens to end her life. Greta feels herself weird and different from other people (because of the adolescence process but mainly because of her symptoms). Robert feels frustrated while facing life circumstances that force him to live in a country where he doesn't feel belonging, cannot speak the language and is without friends.

Contrary to existential nihilism discussed some session above, Positive Psychology is an approach directed to the constructive aspects of human experience such as the concepts of resilience, strengths, and adaptive forms of coping. The domains investigated by positive psychology may be considered GRRs in salutogenesis. A central understanding in positive psychology as well as in salutogenesis is that adversity and suffering can bring flourishing, instead of being recognized just as hardship or problems to be overcome.

Empirical evidence supports the assumption that spirituality is linked to physical and mental health (Moreira-Almeida, et al., 2014; Jaiswal et al., 2020; Braam & Koenig, 2019). Addressing these issues, Rajkumar (2021) proposes the unification of positive psychology through integrative meaning therapy (IMT), a therapeutic approach by Wong (2020), with the salutogenesis framework. From the viewpoint of positive psychology and IMT, human beings are transcendent and spiritual (Wong, 2020).

IMT advocates that self-transcendence (understood as a search for meaning in something higher, whether it would be God or other people) and self-detachment (understood as a viewpoint that strengthens mindfulness) may increase the sense of coherence (Wong, 2020). Acceptance and confrontation of the daily distress when properly and wisely managed would result in growth and resilience according to IMT.

IMT highlights the positive outcomes of three GRRs which are psychological (mindfulness, self-affirmation about the meaning of suffering and facing fears), social (altruism, strengthening of relationships), and spiritual (belief in a superior order meaning beyond the current circumstance) when adequately used to face the challenges of life (Wong, 2020) besides to emphasizes mature love translated in seek the good of others (Levine, 2005).

Sabrina was the only one who was emphatically able to state that she didn't know how to manage her life, showing a little more self-awareness. Referring to the effect of psychotherapy in her life Sabrina said: *"I'm hoping that it will be better and I will learn how to manage it better"*. Although she admitted that she was sad and not enjoying life since 2nd grade (when she started to struggle with mental issues), but due to the psychological therapy she now feels more optimistic to improve her healing process and learn more about how to be strong to face life.

Positive outcomes in child and adolescent psychiatry settings (Johansson et al., 2018) and in psychosocial rehabilitation (Fekete et al., 2020) were found by research intended to investigate the effectiveness of salutogenesis applied to mental health. Therapeutic salutogenic strategies to health include interventions planned to increase SOC such as helping the adolescent to develop adaptive models to understand the symptoms, stressors, or illness (comprehensibility), identify or develop GRRs focused on life demands (manageability), and promote a model of life that encompasses meaning and a perspective of future (meaningfulness) (Bauer et al., 2020).

Meaning of Life

a) "I don't know the meaning of my life"

Emma, Greta and Charlotte don't know the meaning of their lives. Emma actually belongs to two categories since her answer was that she doesn't know but also, she said that life is meaningless. Psychologists differentiate between the presence of meaning and the search for meaning in life. Meaning in life is described as the significance felt regarding the nature of one's being and existence (Steger et al., 2006). In opposition, the search for meaning is understood as the intensity of the individual's desire to form an awareness of the significance and reason to exist (Steger, Oishi & Kashdan, 2009). In Frankl's (1990) work, the search for meaning was considered the motivational strength addressed to find personal meaning and purpose in life.

Other authors such as Baumeister (1991) and Klinger (1998) propose that the search for meaning is a way to express existential disappointment.

It is mostly in the interaction between the inner self of Emma, Greta and Charlotte with the external world that experience occurs and it is in and through their experience that they can build themselves. The experience in itself is a complex phenomenon since it is both long-term and intermittent, and the latter relates to levels of awareness, and perception of each one of us. Längle (2004) explains that the personal meaning is found in the confrontation among the individual, one's own being and one challenges of life being a complex attainment for the human soul. Phenomenological approach (Längle, 2004) shows that three existential motivations are concerned with this meaning: the first one is associated with being in the world, the second is associated with having a life and the third is associated with having a self or a personal identity. Längle (2004) explains that these fundamental aspects of life form a matrix from which psychopathology can be understood and clinical interventions can be done. The search for meaning in life may represent a normative and necessary distress to the achievement of an ultimate sense of meaning (Kiang & Fuligni, 2010).

b) “Life is meaningless”

Questions such as “what is the meaning of life?” corresponds to the question “what is the reason why we exist?” The answer to these questions would make our lives meaningful and valuable. On one hand, individuals are looking for higher values for which they desire to live (Frankl, 1990). On the other hand, if there is no value giving reason for existence, life would be meaningless or worthless. John, Robert and Emma answered that life is meaningless.

According to Tartaglia (2016), a nihilist, life is meaningless. According to him that conclusion has no effect or repercussion for the rest of our lives because we are immersed in daily activities and only when we step back from social framework after boredom, we realize that life is meaningless. He also explains the difference between “what is the meaning of life” and “how to find meaning in life”. The later question means that meaning in life is found in everyday activities such as washing the dishes, studying, working, in relationship, in leisure time and so on. Tartaglia understands that the only meaning of life is to go beyond the context of meaning what means to make sense of life by providing a larger context to existence. It is associated with

the idea of transcendence. The hypothesis of transcendence argues against naturalism (Tartaglia, 2016).

Psychologists treat the meaning of life with the self-transcendence of human existence. Searching for the meaning or purpose of life will result from the ability to orient outwards to a feeling that must be improved, or to another person to whom we are devoted with love (Frankel, 1990). It is by serving to the cause of love that an individual realizes oneself and becomes oneself. The existential crisis, considered a phase of life characterized by guilt, insecurity, lack of meaning in life, dissatisfaction with oneself, issues with freedom and responsibility, despair, suffering, and loneliness was evidenced in empirical research carried out by Senkevich (2016). The answers of John, Robert and Emma about the meaningless of life suggest that they are going through an existential crisis and need help and support.

The lack of meaning or purpose in life will lead to frustration or an emotional and existential vacuum resulting in aggressiveness and a search for pleasure and entertainment. These symptoms would create an existential crisis associated with a specific stage of life or an age-related existential crisis. Adolescence and maturity may be understood as vulnerable stages of life in which crises can occur because of the process of reflection on oneself and one's particular life plans and the formation of personal identity (Senkevich, 2016). Existential crises can also happen during professional exhaustion, spiritual awakening, internal conflict of values, grief, violence, betrayal, etc. (Vasiliuk, 2009). Thanks to the fact that John, Robert and Emma are in treatment intended to alleviate their suffering.

c) "Life is meaningful"

This category is represented by Sabrina whose answer was: *"life is...is very meaningful"*. According to Frankl (1990), existential meaning is not something based on personal preference without reason considering that it supposes to support and give structure to life. The meaning of life must be established on facts, carved on reality, and not substituted voluntarily. From the framework of Logotherapy, the approach created by Frankl, the meaning of life is a correlation between the demand of the circumstances and one's comprehension of oneself. In other words, the meaning would be what someone feels and thinks in terms of who one is or should be and the given situation. For an adolescent the meaning would be update his or her potential, develop

personal relationships, fulfill academic purposes, and so on. In this sense, all adolescents interviewed need to go through this process of searching for meaning. However, some of them may be closer to achieving this purpose that emerges from the intersection of the internal world with the external world.

A meaning would emerge as a gestalt from the inner and outer external world (Längle, 2004). The personal meaning would result from a subtle power underlying our conscience and our capacity to feel and sense. The nature of the human spirit is associated with the ability to dialogue; therefore, it brings us continuously in confrontation with ourselves, other individuals, and objects discriminating against what is possible. The human spirit always guides toward relationships and dialogues where potential can be updated and possibilities concretized. Humans are often drawn to what is not fixed yet, where challenges are waiting and inviting to be overcome. This is our existential reality and at the same time our future. Through our spirit, we are able to separate the factual from what is possible by creating the human dimension of existence (Frankl 1990). This potential presents itself consciously in Sabrina's life as a part of herself that seeks life and health despite the symptoms that cause so much pain when she comments: *"You only have this life that you are living right now. And in my opinion, you have to live it to the fullest, and... and it can be really hard sometimes, but I believe that everything that happens has a meaning behind it and that you have to live...live your life in a way that when you get older and you kind of look back at your previous life you should think that...Yeah, I lived a long and great life"*

Human beings create existence through the possibilities of the external world updating their potential. In Längle's (2004) eyes life means to have an opportunity to transform whatever for better, experience what is valuable and refuse what could be destructive. The essential task of life is to find this correspondence between the potential for participation (that includes creativity, action, and encounter with people, objects, etc.) and what is possible, what is not fulfilled yet, what is needed, what is seen, felt and understood to be waiting for, despite the possibility of risk and mistake. Sabrina looks conscious about that when she makes this comment: (,,) *"and of course sometimes, like tragic accidents happen and you can't control that, but...but you have,*

you have to live life because it's...it's such a meaningful thing and you should feel, and I feel really lucky that I can experience this whole thing"

Sabrina was the only participant who answered that life is meaningful showing a fighting spirit or a potential sense of coherence despite her psychiatric symptoms. Without meaningfulness, neither comprehensibility nor manageability will last long. Meaningfulness is the most relevant component of the SOC (Antonovsky, 1987) therefore individuals who actively engage in life and are willing to spend energy have higher chances to solve problems and find proper resources.

Understanding of Oneself

a) "I don't know how to understand myself"

All interviewed adolescents without exception responded that they don't know how to understand themselves. Längle (2004) explains that the third crucial condition for a fulfilled existence is the awareness of being a different and separate human being. From birth to death, we exist as solitary individuals. The "I" in each of us gives to our experience a unique quality that sets us apart from others. However, as we navigate our way through life, we must learn to confront our existential struggles alone, particularly when dealing with our personal pain. In both our public or private lives, we are faced with the challenge of understanding ourselves and our place in the world, grappling with questions of self-esteem, identity, virtues, and failures. Ultimately, we are all confronted with some fundamental question of human existence: may I truly be myself? Do I feel free to be myself? Do I have the right to be what I am and express my needs?

Längle (2004) explains that in order to succeed in knowing oneself it is necessary to experience attention, justice, and appreciation. The individuals must experience themselves unique, feel that others respect their boundaries, feel appreciation for themselves and others, and feel treated with justice. Loneliness and a need to hide oneself behind shame will result if one of these experiences is missing. It looks like a significant part of the interviewed adolescents are lacking to feel themselves (consciously or unconsciously) unique, respected, appreciated, and treated with justice. When experiencing appreciation, attention and justice, the individual will have proper self-esteem, self-respect and authenticity (Längle, 2004). Emma feels rejected by her

parents and complains that they don't understand her: *"I had much guilt that they passed on to me"*. Diagnosed with eating disorder, Greta affirmed: *"Actually, I hate myself and I try to change how I look, but I... I did everything. I worked out... I ate less but I couldn't change"*

Two other tasks are necessary which are delineating the self and existentially meeting with others. Delineating the self requires active participation related to stand on one's own, say yes and reject whatever does not correspond to one's sense of self. The existential meeting with others is what makes the individual experience other's person essence; it means uncover the "I" in "you". Charlotte, also diagnosed with eating disorder said: *"I was always bullied like since 5th grade... (...) so I... I absolutely had no friends (...) they bullied me because they told me I'm fat, I'm short, I'm ugly, I don't dress well...my interests are trash, and like everything about me is trash"*.

When the above discussed healthy compounds are missing the strategies of cope will be characterized by withdrawal, stubbornness, aggression, and anger among others. Resignation may lead to dissociation of bodily integrity, and splitting of emotion and cognition. If these reactions don't suffice to neutralize the hurt, they get symptoms and/or personality disorders arise such as visible in Charlotte answer: *"I just sometimes get confused about my own self (...) some people say I am a "dork crackers" ... I am dork assful ... some people say that and I just get really confused"*

Management of Oneself

a) "I don't manage myself enough/I manage myself badly"

John, Robert, Emma, Greta, Charlotte and Sabrina all answered that they manage themselves badly. Senkevich (2016) considers that adolescence represents a second birth for the individual signalized by existential issues. Four basic conflicts may trigger an existential issue: the awareness of the finitude of existence; the need for the structure of life and the awareness of the lack of such structure and organization; the feeling to be in isolation or alone in an uncaring world, the need of the contacts, protection, and affiliation; and the urgency for finding the meaning of life where the individual has been thrown (Senkevich, 2016; May & Yalom, 1989). The awareness of the finitude of existence as a conflict may be seen in Sabrina words: *"You do*

the same things every single day, and then you... you are young and then you get older and then you start working and then you work till you are old and then you quit. And it's hard to understand"

The answer of Emma about how she manages herself shows her lack of structure: *"Not well. (...) sometimes I don't even recognize myself and I... I can't manage to bear with that and not well, really not well. Yeah... It's gotten worse by the time"*. Her feelings to be alone in an uncaring world are also perceived in the words when she complains about the lack of understanding of her parents: *"We fight about ... almost everything but most... most about my behavior (...) I think that the world would be better without me and I was (...) I really thought about killing myself and my mother was really mad at me and she... she yelled and cried, and it was really scary to me because I I said something that was on my mind and I couldn't bear it anymore"*.

Sabrina describes her urgency in finding the meaning of life where she has been thrown: *"Life in general is interesting and exciting and sometimes these happenings are...are bad and...and they put you in a situation where you have to find a way out but I do think that they are essential in our life and are meaningful"*

Meaning of Oneself

a) "I don't know the meaning of myself"

Greta, Charlotte and Sabrina don't know the meaning of themselves. Adolescence is one of the most crucial periods of life to investigate the development of existential crises or concerns (Berman, Weems & Stickle (2006). Social and cognitive approaches imply that by high school youth become able to understand the meaning of life and other broader questions of life may emerge (Warren & Sroufe, 2004). Using the psychosocial developmental framework, Erikson (1968) refers that adolescence is a decisive period of time in which the development of life values and goals, including the creation of a sense of direction and purpose in life is formed. It is not the case of Greta who explained: *I don't know what to say (...) I don't understand myself like what I do, what I think"*

Existential concerns may appear as long as the adolescent develops one own identity (who I am? where I am going? In which I believe?). One of the most interesting works associating existentialism, adolescent identity, and the concept of stages of development by Erikson was done by Marcia (1966). This theoretical approach was used by Berman, Weems, and Stickle (2006) in their research to understand and analyze the formation of identity involving two dimensions which are exploration and commitment. Through the process of exploration, the individual eagerly looks for a solution for the issues involving beliefs, goals, and roles in association with the external world that may afford a direction and purpose to life. However, adolescents strongly disturbed in their identity exploration may face greater existential issues and rebellion such as Greta who admitted: *“Actually, I just don’t care. I...I don’t care about my feelings, about my life. I just ignore that. I hate dealing with my stuffs”*. Afterward, commitment depicts the positive result of the process of exploration. When commitments are made in regard to a profession, gender, role, friendship, group membership, moral issues, religion, etc., a guaranteed sense of identity is achieved. However, the process of building identity by Sabrina is affected by her symptoms creating existential concerns: *I mention my struggle with my thoughts, they are connected to my eating disorder, when it’s actually kind of like a battle in my head between two halves... like one of them tells me to lose weight or eat less and the other one is fighting not to do that and it’s always a struggle”*.

Adolescents with firm identity commitment may be less expected to have existential concerns. Based on the previous work of Marcia (1966), Berman, Weems, and Stickle (2006) propose that four possibilities are found among the adolescents which are identity low in exploration and commitment (diffusion), identity low in exploration but high in commitment (foreclosure), identity high in exploration but low in commitment (moratorium) and identity high in exploration and high in commitment (achievement). Some of the interviewed adolescents such as Sabrina can be characterized in the moratorium stage. The moratorium characterization is understood to anticipate the achievement of identity. Adolescents in this position may experience a crisis due to the fact that they are actively exploring or considering the several options but have not found yet one that correspond to their needs. These adolescents may present high levels of distress (Berman et al., 2004) for face inner issues and consequently are more likely to show elevated existential concerns. However, the majority of the interviewed adolescents, disturbed by

their symptoms and low sense of coherence, are lost in their process of building identity and consequently don't experience the meaning of themselves.

b) *"I am meaningless"*

John, Robert and Emma, the adolescents whose symptoms involved suicide thoughts or attempts of suicide, responded that they were meaningless. Emma recognizes: *"I...I...I find my life meaningless and my whole existence is meaningless."* Steger et al., (2006) explains that the development of meaning of life advances side by side with the development of identity. In this matter, adolescents may be at different stages of meaning of life.

Using the theoretical proposition of Marcia (1966) above presented, it can be said that while the stages of identity are defined by exploration and commitment, the stages of development of meaning can be characterized by the search for and the presence of meaning of life. Using the same reasoning, we can say that adolescents may feel meaning diffusion (low presence and low search), meaning foreclosure (high presence and low search), meaning moratorium (high search and low presence) and achievement of meaning (high presence and high search). Exploration is inferred to have a relevant role in the formation of identity and meaning in addition to other experiences of life (Fjelland, Barron & Foxall, 2008). Exploration for the formation of identity requires inner observation but Robert confesses that he ignores his feelings: *"I don't pay attention to them but my feelings I ignore (...) I don't really manage it, I just let it do what it does, except I just don't show it"*.

Among adolescents, it is common that the exploration is simultaneously associated with distress and confusion about identity instead of a healthy exploration (Berman, Weems, and Stickle (2006) however the search for the meaning of life can be a positive influence on the formation of adolescent identity and help in their improvement (Brassai, Piko & Steger, 2012). This does not seem to be the case for Emma, who, overwhelmed with her existential questions, does not even engage in the search for the meaning of herself, but prematurely concludes *"sometimes I think that I'm pure evil and that I don't deserve to live"* and in John's comment: *I don't think that I'm meaningful at all... in anything or in anyone's lives (...) so I don't really find myself meaningful at all.*

During the process of exploration, the adolescent makes choices that will have consequences in the identity. The process of choice is relevant for the process of identity formation however there is no endpoint (Luyckx, Schwartz, Goossens, Soenens & Beyers, 2008). In the formative years of adolescence, the exploration may be simultaneous with the commitment indicating that the formation of identity is an evaluative process (Meeus, 1996). This evaluative process was disturbed by the symptoms and self-esteem issues in John, Robert and Emma's experiences. The active search for meaning in life involves the adolescent's work to differentiate their identity, commitments and struggle in life. When exploration is understood as a usual and sound aspect of the formation of the adolescent identity, suddenly the search of meaning will appear as a characteristic of health in the adolescent's life (Brassai, Piko, & Steger, 2012).

In order to contribute to the understanding of health promotion, the salutogenic theory introduces the concepts of General Resistance Resource. The use and activation of GRR will form life experiences characterized by comprehensibility and better capacity for manage the daily stressors. Depending on the availability of the GRR and the ability to use it by the individual will result in a successful management of strain. The GRR support SOC (Antonovsky, 1987). Individuals who experience meaningfulness will consider life worthwhile (Antonovsky, 1987). Resilience is improved by a sound SOC, which means the ability to adjust despite negative life events and difficult life circumstances (Idan, Eriksson & Al-Yagon, 2017).

Adversity and suffering can bring flourishing, instead of being recognized just as hardship to be overcome. Acceptance of the daily distress when wisely managed result in growth and resilience. Education is the missing link of life coherence because it means that life is an opportunity to learn. Education helps individuals to develop a better SOC by providing them with knowledge, skills and tools to navigate the world; to make sense of the world around them; to understand their place on it. Through education, individuals can learn to recognize patterns, make connections, and create meaning which can contribute to a greater SOC. Without of education, individuals may struggle to accomplish their goals and fulfill their purpose in life. This can lead to a feeling of frustration, helplessness and a lack of coherence. However, education can empower individuals to take control of their lives, set meaningful goals and work towards achieving them.

Chapter Summary

Chapter 6 is dedicated to the discussion of the quantitative and qualitative results of the present research. Demographic and socio-economic characteristics are important contributors to SOC. The early negative effect of psychological/behavioral symptoms and the need to handle adaptation problems in the psychiatric sample might lead to poor SOC. The negative effect of psychological/behavioral symptoms is associated with poor self-esteem, lower QoL, and lower SS resulting in meaningless of life. The average sample showed higher levels of SOC, being probably more optimistic, feeling more in control of their lives and lowering the chances of the detrimental effects of stress on their well-being. Emotional symptoms were associated with the lowest SOC. Problematic emotional states obstruct adjustment of stressors related to NLE, peer problems, family and romantic relationships commonly associated to puberty and adolescence. The difference between children's and adolescents' SOC might be explained by the transformation in components of self-definition that supports self-esteem in childhood but not in adolescence. The difference between males and females might be explained by the diverse ability to handle stressors and report mental health problems. Mental health problems in childhood and adolescence account for a large incidence of difficulties in educational achievements. Education is one of the protective factors of mental health promoting knowledge, emotional self-regulation, and reasoning skills. SOC might be one of the protective factors acting as a buffer against school stress.

Human beings build their personal characterization, definition, purpose and self-understanding by their intersection and entanglement with external world. Existential concerns may appear as long as the adolescents develop their own identity. However, adolescents strongly disturbed by psychological/behavioral symptoms might have more challenges in their identity exploration facing greater existential issues. Existentialist authors explained that the first area in which it is necessary to experience sense of coherence is in the external world in which we live. Majority of adolescents interviewed didn't find an existential meaning in external world. They neither managed nor understood their external world. Also, the majority of adolescents understand neither life nor themselves. Their responses may be understood in association with their

symptoms and inability to make healthy connection with themselves, their purpose of life and the external world.

Chapter 7: Conclusion

This final chapter aims to summarize the key findings of the research. It also highlights the research's contributions, limitations and suggests future research directions based on practical and theoretical information. Finally, the chapter ends with some concluding remarks.

7.1 Research Aims

The main objectives of this research were to investigate the sense of coherence and self-esteem among children and adolescents in relation to their school performance from a salutogenic perspective. For this, main and secondary questions were elaborated in order to guide the development and result of the research. Below a summary of the main ideas and the main goals accomplished by the dissertation will be presented in order to highlight these points in the Conclusion chapter:

- *How do psychological and behavioral problems affect sense of coherence, self-esteem, subjective social support and quality of life?*
- *Is there a difference between children's and adolescents' SOC, self-esteem, QoL and social support?*
- *Are demographic variables such as parents' educational level and negative life events associated with SOC and self-esteem?*
- *How is the SOC of average youth compared with children and adolescents with psychological and behavioral problems?*
- *What predicts sense of coherence of children and adolescents?*
- *Is SOC and self-esteem associated with academic achievement?*
- *What predicts school performance?*

These questions were addressed through the main objectives as follows:

- a) Validate the Sense of Coherence Scale 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, social support, QoL, NLE, and socio-demographic characteristics between children and adolescents with psychiatric symptoms to a sample of the average population.

d) Analyze the relationship of SOC, self-esteem, and psychological symptoms to school achievement.

7.2 Summary of the Main Goals Achieved by the Present Research

The following main objectives were accomplished from the operationalized research:

1. Salutogenesis and its origin was presented and analyzed. The Salutogenic model, as a sociological approach to health characterized by an interdisciplinary foundation (Antonovsky, 1996) useful for research and health interventions was discussed.
2. Sense of coherence was theoretically defined as a personal trend to interpret the environment as manageable, comprehensive and meaningful (Eriksson & Lindström, 2005) influenced by the way that an individual understands and deals with life (Kouvonen, Väänänen, Vahtera, et al., 2010; Wainwright, Surtees, Welch et al., 2008).
3. The literature on SOC in the field of childhood, adolescence with and without psychological/behavioral problems was reviewed. The role of parents, teachers, and school contexts in the development of SOC was also analyzed.
4. Salutogenesis specifically applied to education (teaching and learning) was detailed. The educational contexts were characterized and a call for concern of the physical and mental health of teachers and students was emphasized. Salutogenic schools, and the Healthy Universities movement, inspired by the Ottawa Charter for Health Promotion were characterized. Six models found in the literature providing specific examples of the inclusion of the salutogenic theory and health promotion in education were summarized and compared.
5. SOC scale was empirically tested and validated in a sample of Hungarian child and adolescent population. Validity and reliability of SOCS-29 and SOCS-13 for assessing youth were obtained. Confirmatory Factor Analysis showed the 3-factor model superior to the unidimensional one on both samples.
6. The most frequent clinical diagnosis in the psychiatric sample was emotional disorder (79.8%) and anxiety disorder (35.5%). ADHD was present in 8.1%, conduct disorder in 3.8%, and eating disorder in 2.5%. Youth under psychiatric care had parents with lower education, more divorce and lower income levels.

7. There were more negative life events in the psychiatric sample. More specifically, parents' psychiatric problems, divorce, family arguments, bullying, abuse and problems with police were more frequent in the psychiatric sample.
8. SOCS-13 clearly and significantly differentiated between average children/adolescents and youth under psychiatric care. Self-esteem, quality of life, and subjective social support were significantly lower in the psychiatric sample.
9. Both internalization and externalization type symptoms were associated with a lower sense of coherence but internalization symptoms such as depression and anxiety were related to lower SOC than externalization symptoms (such as behavioral problems). This is a new result.
10. Children had higher sense of coherence, self-esteem and quality of life than adolescents in both the average and psychiatric subsamples. This is a new result when referring to psychiatric population. At the same time, subjective social support was not different between the two age groups. Males had higher sense of coherence in almost all of age ranges.
11. Self-esteem, quality of life, social support and psychiatric symptoms significantly predicted SOC. The model explained 64.6% of the variance. Negative life events only added minimally to the prediction. High self-esteem, high quality of life, high social support and the lack of psychological and behavioral symptoms were associated with high sense of coherence.
12. Academic achievement of children and adolescents under psychiatric care was worse than that of the average youth. Children were more negatively affected than adolescents.
13. School grade was predicted by SOC, age, gender, psychological and behavioral symptoms. SOC was a significant predictor of grade only in the average sample. Studies comparing children and adolescent in this matter were not found therefore this is a new result. Psychological and behavioral symptoms seemed to be strong predictors of school achievement. Significant negative effect was shown for emotional and behavioral problems. This emphasis on emotional and behavioral problems is a new result.
14. A set of interviews were performed and the existentialist approach was used in order to analyze participants' experiences and their effect on their views about themselves and the world. Interviewed adolescents had depression and/or eating disorder clinical diagnoses. The main results 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 nor

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, low self-esteem, and a lack of purpose in their lives manifested in their symptoms. This study, originally inspired by research developed by Antonovsky (initially with Holocaust survivors and then conducted with retirees who demonstrated high sense of coherence scores), is unprecedented in literature in the field of adolescence. Table 14 summarizes the hypotheses and their results.

Table 14: *Summary of hypotheses and results*

Hypotheses		Results
H1	Psychiatric population can be discriminated from peers in average population by their demographic characteristics (parents' level of education, income, marital status, negative life events)	True
H2	Psychological problems are associated with lower sense of coherence	True
H3	Psychological problems are associated with lower self-esteem, lower quality of life and lower social support	True
H4	Both internalization and externalization type psychological symptoms are associated with lower sense of coherence	True, internalization type symptoms showed stronger association
H5	Children have higher sense of coherence than adolescents	True
H6	Children have higher self-esteem, higher quality of life, higher social support than adolescents	True
H7	Younger children and children without psychological/behavioral problems will have higher SOC than older ones, and children with psychological symptoms	True
H8	Males have higher sense of coherence than females	True
H9	Higher sense of coherence and higher self-esteem of youth would be associated with parents' higher educational level and less youth negative life events	True for negative life events, not true for parental education
H10	Higher sense of coherence is predicted by higher self-esteem, better quality of life, better social support and less psychological/behavioral symptoms	True
H11	High sense of coherence and high self-esteem is associated with better academic achievement	True
H12	Psychological symptoms are associated with lower sense of coherence, lower self-esteem and worse academic achievement	True
H13	Academic achievement is predicted by SOC, age, gender, psychological/behavioral symptoms and self-esteem	True for SOC, age, gender and psychological/behavioral symptoms, not true for self-esteem

7.3 Research Limitations

The systematic literature review about education had inclusion and exclusion criteria addressing only relevant questions in salutogenesis associated with teaching and learning. This characteristic prevented answering other complex questions and limited the consideration of the broader process of education.

Due to the fact that the design of this research is cross-sectional, the direction of the influence between the studied variables cannot be concluded, therefore the found associations should be considered as correlates of SOC and not determinants of it.

The study included children and adolescents under psychiatric care and average students from one elementary, one vocational and one high school of Szeged, therefore was not representative of the Hungarian youth population. The psychiatric sample had a high percentage of emotional diagnoses, which negatively influences SOC. A wider distribution of psychological and behavioral problems would enable a more precise study of the differential effect of mental health problems on SOC. The influence of studied variables should be investigated in different cultural youth samples rather than only in Hungarian ones and with specific characteristics (e.g., specific symptoms, etc.).

The completion of the test battery was done in a paper-pencil style for the psychiatric patients while the school sample was tested online due to COVID restrictions. The different testing methods might have resulted in minor differences, however, since our findings were in line with the literature, this difference seemed negligible.

Self-reported child and adolescent data were used in this study, which might reflect the subjective interpretation of the examined variables. However, psychological symptoms, self-esteem, and sense of coherence are best described by the individuals themselves, and having one informant for all data increase reliability.

Our sample had a medium size which made our findings suggestive. However, our results extended earlier findings on average school samples (Kristensson & Ohlund, 2005; Oliva, Cunha, Silva, et al., 2019; Rivera, Garcia-Moya & Moreno, 2012; Moksnes et al., 2012) and psychiatric samples (Carlén et al., 2020; Länsimies, Pietilä, Hietasola-Husu et al., 2017; Blom et

al., 2010) adding important considerations to the study of the effect of sense of coherence, self-esteem and psychological symptoms on academic achievement.

7.4 Contributions

Despite the above-presented limitations, the study made theoretical and empirical contributions. The relationship of SOC, self-esteem, school performance, psychological and behavioral symptoms in young psychiatric sample as well as age and sex-related differences in SOC during childhood and adolescence was investigated.

7.4.1 Theoretical Contributions

The study conceptualized salutogenesis and analyzed the sense of coherence, a relevant worldview for psychiatric as well as for average peers in educational context. Its definition supported by salutogenesis was investigated on the basis of the literature so the components of SOC were understood in their complex intersection with several variables. Since the youth of today will become a major part of the labor market in the future, their characteristics should be considered. Understanding the influencing factors of SOC would help families, schools, universities, and society for better improvement of SOC as an essential compound to succeed in their endeavors and enhance the quality of life of the future labor force.

Other specific theoretical contributions:

The scientific evidence of salutogenic principles applied to education (such as teaching literacy, building sustainable relationships between teachers and students, improving transcultural competence, improving the ability to solve conflicts, the use of drawing as an integration tool, the use of teaching practice as an exercise for self-consciousness and the concept of teacher as a source of emotional security for students) has been reviewed and widely recognized in the literature through a model of application of salutogenesis to teaching and learning.

7.4.2 Empirical Contributions

The present study validated SOCS-13 in children from the age of 10 and updated the knowledge about the factor structure of both versions of the SOCS in Hungarian children and adolescents. Furthermore, this study contributed to a better understanding of SOC and demographic characteristics. The author analyzed the SOC in a sample of Hungarian youth with respect to

academic achievement and psychological/behavioral symptoms in childhood and adolescence in regard to self-esteem, social support, QoL, NLE and demographic characteristics.

There were no studies on SOC in children and adolescents previously in Hungary. The validation of the SOC questionnaire hopefully becomes a useful source of reference for other researchers on the same topic. SOCS may be compared, contrasted, and further employed in studies, which share the research contexts with similar socioeconomic and sociocultural features.

The relationship among SOC, QoL, self-esteem and subjective social support was shown. The effect of SOC on grades was only evident in the average population. SOC and grades are greatly influenced by being a psychiatric patient. Emotional symptoms are associated with the lowest SOC, and this was also shown in the qualitative interviews: emotional symptoms affected all aspects of an adolescent's thinking.

The results can be applied in disciplines such as education, psychiatry and psychology. In order to enhance the quality of the data and improve the validity of the findings, both quantitative and qualitative information were analyzed. The two types of data demonstrated remarkable consistency, enabling to answer the research questions. Some emerging themes in the interviews with psychiatric patients provided me with insight into the participants' understandings of the external world, life and themselves affecting their sense of coherence.

7.5 Recommendations and Directions for Future Studies

The results of the present research showed that psychological and behavioral symptoms negatively associated with SOC, self-esteem, social support, QoL, and academic achievement, which resulted in difficulties in learning and problematic adjustment at school. Therefore, salutogenic interventions addressing this issue are highly recommended. Despite the relevant contributions of the present research, it was not possible to fill several gaps, therefore directions for future studies are proposed:

- Longitudinal studies to investigate the direction of the relationships identified and to be able to decide whether the decline in SOC precedes or follows the presence of psychological and/or behavioral difficulties.

- Future studies investigating SOC among youth from different cultural groups and nationalities other than Hungarian children and adolescents.
- Broader qualitative studies to help interpret the experience of psychological and behavioral symptoms producing a meaningful intervention. Early interventions intended to improve salutogenic educational models might prevent more severe psychiatric disorders making this kind of action of great relevance. Step 1 of the model suggested below could be done in the emergency pediatric units; from step 2 it would be accomplished by psychologists or psychiatrists providing psychoeducation as the missing link of life coherence (Table 15).

It seems that SOC is closely linked to self-esteem, social support, quality of life, and most strongly to psychological and behavioral symptoms. Therefore, SOC could be used as a sensitive marker signaling mental health problems or as a measure of well-being of the children and adolescents.

It is worthwhile to introduce salutogenic methods into teaching as it was shown in several examples and also as a new initiative, in mental healthcare. A good example of the latter is shown by the work of Rajkumar (2021) summarized below:

Table 15: *Application of Salutogenic Principles in Mental Healthcare*

Step	Objective	Technique	Salutogenic Principle
I	Triage	1.Screening for a) Acute risk of harm to self or others b) Diagnose psychiatric disorder requiring formal treatment 2.Referral of individuals identified as (a) or (b) to conventional psychiatric care 3.Ensuring that such referred adolescents return to salutogenic intervention	Use GRR available in a conventional approach
II	History	Semi-structured interview: 1.Individual understanding of the current situation 2.Responses to adverse circumstances earlier in life 3.Sense of mastery of the current situation 4.Brief biological depiction	Build of a story of the adolescent beyond the symptoms or distress
III	Assessment	1.List of methods used to handle adversity in the past and present 2.List of the adolescent weaknesses and strengths 3.List of available GRR 4.Assessmet of SOC	Identify and mobilize existing GRRs, estimation of SOC baseline
IV	Shared understanding	1.Explanation of salutogenic model 2.Reassurance that distress doesn't equate to mental disorder and may be a response to an abnormal situation 3.Reframe the current situation in terms of an opportunity to growth and future positive mental health not just an adversity	Framing stress as an opportunity for adaptation, help the adolescent to active adaptation not just passive reception
V	Salutogenic interventions	1.Select dimension of SOC which require attention a) Comprehensibility: develop a model of the current situation as a challenge not just a disaster (Avoid false hope or excessive pessimism b) Manageability: mobilize and optimizs GRR, develop and test potentials in collaboration with the adolescent, focus in the adaptation and not in symptoms, accept setback and not linear improvement c) Meaningfulness: help the adolescent to focus in the future, develop short-and-long term goals in terms of functioning and relationships. Appeal to individual as well as cultural meaning and wisdom	Strengthening the SOC in regard of the adolescent need, optimal use of GRR, active adaptation

Note: Inspired by Rajkumar (2021)

7.6 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. The author calls the attention of the health professionals and educators to the relevance of the assessment of psychological/behavioral symptoms and sense of coherence 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. QoL must become an important goal of psychiatric programs of treatment, especially when psychopathology tends to remain (Bastiaansen, Koot and Ferdinand, 2005).

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Appendices

Appendix 1: Ethical permission from the DHS

University of Szeged



Institutional Review Board
Doctoral School of Education

6722 Szeged, 30-34 Petőfi S. Av., Hungary
Phone/fax: +36 62 544-032

Olney Rodrigues
PhD Student: Doctoral School of Education
Reference number: 1/2019
Subject: Ethical evaluation of a research project

ETHICAL APPROVAL

The Institutional Review Board (IRB) of the Doctoral School of Education, University of Szeged has recently reviewed your application for an ethical approval (Title of the Research Project: *"Sense of coherence and self-esteem as protective factors for psychopathology among children and adolescents"*, senior researcher: Dr. Enikő Kiss). This proposal is deemed to meet the requirements of the ethical conducts on social research with human subjects of the Doctoral School of Education, University of Szeged.

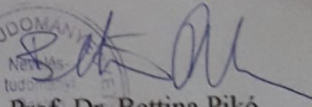
IRB decision: approved

Justification: The research project meets the requirements of the professional-ethical criteria of the social research including human subjects within the field of educational science. Participation in data collection is voluntary, the identification of the students is not possible to this research due to anonymous completion. The students and their parents will be informed about the main goals of the research project and their consent will be requested. Procedure of the data collection does not harm their privacy law, it does not have an impact on the students' mental or physical health. Data cannot be handled by persons to whom they are not concerned.

In a summary, full ethical approval has been granted.

We wish you all the best for the conduct of the project.

Date: 02 January, 2019


Prof. Dr. Bettina Pikó
IRB coordinator

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egészségügyi szakdolgozó

Dr. Kiss Zoltán
egyetemi magántanár

Dr. Nagymajtényi László
egyetemi tanár

Dr. Török Mária
jogász

Iktatószám: 17/2019-SZTE

Dr. Kiss Enikő egyetemi adjunktus

Szegedi Tudományegyetem, Szent-Györgyi Albert Klinikai Központ
Gyermekegyógyászati Klinika és Gyermek Egészségügyi Központ
Gyermek-és Ifjúságpszichiátriai Osztály
(6720 Szeged, Boldogasszony sgt.15.)

A koherencia érzés, az önértékelés, a szociális támogatottság és a szubjektív életminőség, mint protektív tényezők a gyermek-és serdülőpszichiátriában.

témájú beadványához.

Bizottságunk a **2019. február 05-én (Kiegészítő dokumentáció: 2019. március 22.)** érkezett fenti orvosbiológiai vizsgálatról szóló tervet kutatásetikai és orvosetikai szempontból értékelte és megállapította, hogy az abban foglaltak a 23/2002. EüM rendeletben valamint a 235/2009. (X.20.) Korm. rendeletben leírtaknak **megfelelnek**/nem felelnek meg*.

A részletes kutatáshoz, tervhez mellékelt vizsgálatba vett személyi adatlap mintát, a betegtájékoztatót és a beleegyezési nyilatkozatot etikai-szakmai szempontból **megfelelőnek**/kifogásolhatónak* találtuk.

Az engedélyt kérvényezőktől a vizsgálatba bevont személyek érdekeit képviselő, a kutatásban közvetlenül részt nem vevő kijelölt intézeti orvos láttaozásával a kutatás elkezdésétől számított **24 hónap múlva 1 oldalas jelentést kérünk** /csak a rendeletben foglaltak alapján* kérünk értesítést.

A **vizsgálati program befejezését** hasonló módon **kérjük**/nem kérjük* **vi sszajelezni**.

Az Etikai Bizottság a GCP és a hatályos jogszabályok szerint működik.

Szeged, 2019.március 25.

Dr. Wittmann Tibor
egyetemi tanár
SZTE, Szent-Györgyi Albert
Klinikai Központ
Regionális Tudományos és
Kutatásetikai Bizottság elnöke



Dr. Julesz János
egyetemi tanár
SZTE, Szent-Györgyi Albert
Klinikai Központ
Etikai Bizottság tagja

* aláhúzással jelezzük a megfelelő véleményt. Kifogás esetén észrevétel a túloldalon vagy melléklet formájában csatolva.

University of Szeged
Doctoral School of Education



Research

***Sense of Coherence and Self-Esteem as Protective Factors for School Performance and
Psychopathology among Children and Adolescents***

Interview Consent Form

Research investigator:

Research Participant (Child) name:

Research Participant's Parent/Guardian:

Thank you for agreeing for you and your child to be interviewed as part of the above research project. Ethical procedures for academic research require that interviewees explicitly agree to being interviewed and be informed about how the information contained in their interview will be used. This consent form is to ensure that you understand the purpose of your and your child's involvement and that you agree to the conditions of participation. Please read this information sheet and then sign this form to certify that you approve the following:

I..... voluntarily agree to participate in this research study for myself and my child. I understand that I can withdraw at any time or refuse to answer any question without any consequences. I understand the purpose and nature of the study and I and

my child had the opportunity to ask questions about it. I agree to the interview being audio-recorded without any personal details. I agree that the medical protocol of my child and psychological tests be analyzed for scientific purposes without any personal details. I understand that all information I or my child provide for this study will be treated confidentially. I understand that in any report on the results of this research my and my child's identity will remain anonymous. This will be done by changing the name and disguising any details of the interview which may reveal my or my child's identity or the identity of people I speak about. I understand that disguised extracts from my interview may be quoted in thesis, conference presentation, published papers always preserving my and my child's identity.

Signature of participant (child)

Date

Signature of participant (parent/guardian)

Date

Signature of research investigator

Date

Appendix 4: Consent form for quantitative study

Szegedi Tudományegyetem

Szent-Györgyi Albert Klinikai Központ
Általános Orvostudományi Kar
Gyermekegészségügyi Klinika és
Gyermek Egészségügyi Központ
Gyermek- és Ifjúságpszichiátriai Osztály
Igazgató: Dr. Bereczki Csaba
tanszékvezető egyetemi docens



University of Szeged

Albert Szent-Györgyi Clinical Center
Faculty of Medicine
Department of Pediatrics and
Child Health Center

Head: Bereczki Csaba M.D.Ph.D.
Professor and Chairman of Pediatrics

Beleegyező nyilatkozat

beavatkozással nem járó vizsgálatok¹ számára²

1. A kutatás azonosító adatai:

A téma címe: A koherencia érzés, az önértékelés, a szociális támogatottság és a szubjektív életminőség, mint protektív tényezők a gyermek- és serdülőpszichiátriában

A kutatás azonosító száma: 17/2019-SZTE

A kérelmező neve, munkaköre és beosztása: Dr. Kiss Enikő PhD, klinikai adjunktus

2. A kutatást lefolytató intézmény, általában egészségügyi intézmény megnevezése

Szegedi Tudományegyetem, Gyermekpszichiátria Osztály

3. A résztvevő (gyermek) adatai

Név:

Szül. hely és idő:

Lakcím:

4. Korlátozottan cselekvőképes vagy cselekvőképtelen résztvevő esetén a hozzájárulást adó törvényes képviselő (szülő) azonosító adatai:

Név:

Születési hely és idő:

Lakcím:

5. A kutatás vezetőjének, illetve a tájékoztatást adónak a neve, beosztása, munkaköre

A kutatás vezetőjének neve: Dr. Kiss Enikő

Beosztása és munkaköre: klinikai adjunktus, gyermekpszichiáter

A tájékoztatást adó neve:

¹ A 23/2002. (V. 9.) számú EüM rendelet 20/B. § g) és h) pontjai szerint:

g.) *beavatkozással járó vizsgálat (interventional trial)*: fizikai beavatkozással járó orvostudományi kutatás és minden olyan beavatkozással járó kutatás, amely a vizsgálati alany lelki egészségére nézve kockázattal jár

h.) *beavatkozással nem járó vizsgálat (non-interventional trial)*: emberen végzett, a g) pont alá nem tartozó orvostudományi kutatás: 1/2007. (I.24) Eü.M. rendelet

² Ez a nyomtatvány a 23/2002. (V. 9.) számú EüM rendelet 20/H. § (4) bekezdésének 2008. szeptember 1-jén hatályos szövege alapján készült.

Beosztása és munkaköre:

Kijelentem (korlátozottan cselekvőképes vagy cselekvőképtelen résztvevő esetén a törvényes képviselőmmel együtt kijelentjük), hogy a kutatásban történő részvételre vonatkozó beleegyezést előzetes tájékoztatást követően, önként, befolyástól mentesen adtam meg annak tudatában, hogy az bármikor, szóban vagy írásban indoklás nélkül visszavonható.

Az aláírással egyidejűleg a beleegyező nyilatkozat és a tájékoztató egy-egy eredeti példányát átvettem. A tájékoztatóban foglaltakat megértettem, szóbeli kérdéseimre kielégítő válaszokat kaptam.

Szeged, 2020 hó nap.

.....
kutatásvezető/tájékoztatót adó³

.....
résztvevő aláírása

.....
törvényes képviselő aláírása⁴

Amennyiben a résztvevő vagy a törvényes képviselő nem tud olvasni, akkor szükséges két tanú jelenléte és aláírása az érvényes beleegyező nyilatkozathoz.

Alulírott tanúk, aláírásunkkal igazoljuk, hogy a vizsgálatba bevonni kívánt személy, illetve törvényes képviselője számára minden lehetséges információt megadtak, és a bevonni kívánt személy és/vagy törvényes képviselője önkéntesen és befolyásolástól mentesen adta meg a részvételbe történő beleegyezését.

.....
tanú aláírása

Név:

Lakcím:

Szem. ig. szám:

.....
tanú aláírása

Név:

Lakcím:

Szem. ig. szám:

³ A nem kívánt szót húzza át.

⁴ Amennyiben a résztvevő korlátozottan cselekvőképes vagy cselekvőképtelen, úgy a beleegyező nyilatkozatot a törvényes képviselője is aláírja a 23/2002. (V. 9.) számú EüM rendelet 20/H. § (5) bekezdése szerint.

Appendix 5: Sense of Coherence Scale – online testing format



0%

Koherencia érzés kérdőív - T

Az alábbiakban egy kérdéssorozatot talál, mely az élel körülményeire vonatkozik. Minden kérdésre hártya válasz aható. Jelöld meg azt a számot a skálán 1 és 7 között, amely legjobban kifejezi a véleményed. Ha az 1-es szám mellett válasz közelíti meg legjobban a véleményed, jelöld meg az 1-es, ha a 7-es szám mellett válasz közelíti meg legjobban a véleményed, jelöld meg a 7-es. Ha nem értesz egyet egyik szőlen találató válasszal sem, jelöld meg azt a számot, amely legjobban megközelíti érzésedet. Minden kérdésre csak egy válasz aható.

*Kitöltő kódszáma:

*Kitöltő születési dátuma:

Formátum: éé-éé-éé

*Kitöltés dátuma

Formátum: éé-éé-éé

*1. Amikor más emberekkel beszélsz, van olyan érzésed, hogy nem értenek meg?

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Soha nem érzek így
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Mindig így érzek

*2. A múltban, ha olyan dolgot kellett csinálnod, ami a másokkal való együttműködésen múltott, érezted-e azt, hogy

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Biztosan nem fog sikerülni
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Biztosan sikerülni fog

***3.** Gondolj olyan emberekre, akikkel naponta találkozol, de nem a Hozzád legközelebb álló emberek. Mennyire jól ismered őket?

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Úgy érzed, idegenek
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Nagyon jól ismered őket

***4.** Van olyan érzésed, hogy nem igazán érdekel, mi történik a környezetedben?

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Nagyon ritkán, vagy soha
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Nagyon gyakran

***5.** Történt már Veled, hogy meglepődtél olyan emberek viselkedésén, akikről azt gondoltad, hogy jól ismered őket?

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Soha nem történt
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Mindig ez történik

***6.** Csalódtál már olyan emberben, akire számítottál?

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Soha nem fordult elő
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Mindig ez történt

***7.** Az élet:

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Tele van érdekes dolgokkal
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Teljesen rutin

***8. Eddigi életednek:**

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Egyáltalán nem volt világos célja és értelme
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Nagyon határozott célja és értelme volt

***9. Van olyan érzésed, hogy igazságtalanul bánnak Veled?**

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Nagyon ritkán, vagy soha

***10. Az elmúlt 10 évben az életed:**

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Tele volt változással anélkül, hogy tudtad volna, mi fog történni legközelebb
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Teljesen kiegyensúlyozott és kiszámítható volt

***11. A legtöbb dolog, amit a jövőben csinálni fogsz, valószínűleg:**

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Maximálisan érdekes lesz
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Halálisan unalmas lesz

***12. Szoktad úgy érezni, hogy olyan helyzetben vagy, amit nem ismersz és nem tudod, mit tegyél?**

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Nagyon ritkán, vagy soha

***13. Mi írja le legjobban, ahogy az életedet szemléled?**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Mindig lehet megoldást találni az élet fájdalmas dolgaira
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Nincs megoldás az élet fájdalmas dolgaira

***14. Ha az életedre gondolsz, nagyon gyakran**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - Azt érzed, milyen jó élni
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - Azt kérdezed magadtól, miért is létezel valójában

***15. Amikor egy nehéz problémával találkozsz szemben magad, a megoldás kiválasztása**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - mindig zavarba ejtő és nehéz
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - mindig teljesen világos

***16. A mindennapi dolgaidd:**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - igazi örömet és elégedettséget okoznak
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - szenvedést okoznak és unalmasak

***17. Az életed a jövőben valószínűleg**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - tele lesz változással anélkül, hogy tudnád, mi történik legközelebb
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - teljesen következetes és egyértelmű lesz

***18. Amikor valami kellemetlen dolog történt a múltban, hajlamos voltál**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - folyamatosan a problémán rágódni
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - azt mondani, "ez történt, ezzel kell együtt élnem" és tovább léptél

***19. Vannak-e zűrzavaros (egyszerre rossz és jó) érzelmeid és gondolataid?**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nagyon ritkán vagy soha

***20. Amikor valami olyat csinálsz, amitől jól érzed magad:**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - biztos, hogy folytatódik a jó érzés
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - biztos, hogy történik valami, ami elrontja a jókedved

***21. Előfordul-e, hogy olyan érzéseid vannak, amiket inkább nem szeretnél érezni?**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nagyon ritkán vagy soha

***22. Arra számítasz, hogy a személyes életed a jövőben:**

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - teljesen céltalan és jelentés nélküli lesz
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - tele lesz célokkal és jelentéssel

***23.** Úgy gondolod, hogy *mindig* lesznek emberek, akikre számítani tudsz a jövőben?

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - biztos vagy abban, hogy lesznek
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - kétséges, hogy lesznek

***24.** Előfordul, hogy olyan érzésed van, hogy nem tudod, pontosan mi fog történni a jövőben?

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nagyon ritkán vagy soha

***25.** Jó néhányan – még az erős jelleműek is – néha vesztesnek érzik magukat bizonyos helyzetekben. Milyen gyakran éreztél már így a múltban?

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - soha
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nagyon gyakran

***26.** Amikor valami történt, általában

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - túlbecsülted vagy alábecsülted a dolog jelentőségét
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - helyesen láttad a dolgok jelentőségét

***27.** Amikor olyan nehézségekre gondolsz, melyekkel életed fontos területein szembe kell nézned, úgy érzed, hogy:

● Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - mindig sikerülni fog legyőzni a nehézségeket
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nem fog sikerülni legyőzni a nehézségeket

*28. Milyen gyakran érzed úgy, hogy a mindennapi cselekedeteidnek kevés értelme van?

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nagyon ritkán vagy soha

*29. Milyen gyakran vannak olyan érzelmeid, melyeket nem biztos, hogy kordában tudsz tartani?

🟢 Kérem, válasszon egyet az alábbiak közül

- ☐ 1 - nagyon gyakran
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 - nagyon ritkán vagy soha

Appendix 6: Publication, international congress presentations

Articles/Book chapters

1. Rodrigues de Oliveira, O., Óri D., Kiss E. (2023) Validation and Psychometric Properties of the Sense of Coherence Scale in a Hungarian Child and Adolescent Sample. *Hungarian Educational Research Journal* <https://doi.org/10.1556/063.2023.00176>
2. Rodrigues de Oliveira, O. (2022) Psychological Symptoms and Sense of Coherence in Youth: Exploring Empirical Associations. *First Stipendium Hungaricum PhD Student Conference Volume*
3. Rodrigues de Oliveira, O. (2022) Sense of Coherence, Self-Esteem and Demographic Characteristics Among Psychiatric and Average Youth - A Comparative Study. *XXV. Spring wind/Tavaszi szél Konferencia tanulmánykötet*
4. Rodrigues de Oliveira, O. (2021) The effect of sense of coherence, self-esteem and psychological symptoms on academic achievement. *XXIV. Spring wind/Tavaszi szél Konferencia tanulmánykötet*, Budapest, 415-429, ISBN 978-615-81991-3-1
5. Rodrigues de Oliveira, O., Kiss, E. (2021) The application of Salutogenesis to teaching and learning – a systematic review. *Developments in Health Sciences*, 4(3), 58-68. <https://doi.org/10.1556/2066.2021.00035>
6. Kiss, E., Rodrigues de Oliveira, O. (2021) Az életminőség vizsgálata gyermek- és serdülőkorban. *Gyermekegészségügyi Továbbképzés*. 20(3):117-120

International congress presentations

7. Oliveira, O. R. d. (2022). Sense of Coherence and its Association with Psychological Problems in Youth. *The 19th International Congress of European Society for Child and Adolescent. Abstract pp.474*, Maastricht, Netherlands
8. Kiss E. & Oliveira, O. R. d. (2022). Quality of Life and Psychiatric Problems in Children and Adolescents. *The 19th International Congress of European Society for Child and Adolescent. Abstract pp.503*, Maastricht, Netherlands
9. Oliveira, O. R. d. (2021). Sense of Coherence and Self-esteem: are them protective Factors for Academic Achievement in Children and Adolescent? *6th International Conference on Salutogenesis/International Union for Health Promotion and Education, Organization University of Zurich, Girona. Spain/ Online*
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