Psychological well-being and self-esteem in Slovak adolescents

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Contents

Chapter 1

Introduction

Adolescence is a transitional developmental stage between childhood and adulthood that is characterised by more biological, psychological and social changes than any other stage of life with the exception of infancy (Lerner et al., 1999; Williams et al., 2002). There are two transitional points during this period: the transition from childhood to early adolescence and that from late adolescence to adulthood (Steinberg, 1996). In addition, the period of middle adolescence is important from a developmental point of view; it is characterised by its own pressures, cultural constrains and models of behaviour. There are several reasons why attention on the mental health of adolescents is a key research interest. Firstly, mental health is seen as fundamental to all forms of health (Weare, 2000). Secondly, several specific biological changes, such as sexual maturation, occur during this period, and social transformations, such as the construction of a social identity and the shift in relationships from family to peers, take place. Relationships become more intimate in comparison with the earlier period of adolescence (Zimmer-Gembeck, 2002), and school is considered as an important source of social experiences and psychological development (Marinoni et al., 1997). Such changes have a potential impact on a person's psychological development in terms of stress (Arnett, 1999; Mahon et al., 2003; Ybrandt, 2008). Next, the important role of some psychological factors, particularly anxiety and depressive feelings, with regard to adolescents' health risk behaviour has been shown (Avinson & Mcalpine, 1992; Marinoni et al., 1997; Katreniakova et al., 2005; Sarkova et al., 2005). Finally, the importance of developmental success during this period and its consequences for adult development and health has made it a current area of interest (Keyes, 2006; Trzesniewski et al., 2006). In this study we use psychological well-being and self-esteem as indicators of mental health in adolescents.

1.1 Psychological well-being and self-esteem as aspects of mental health

Adolescents' psychological well-being and self-esteem can be interpreted as indicators of the adaptive emotion regulation which is crucial for ongoing developmental processes in adolescence (Galambos & Costigan, 2003). Similarly, indicators of psychological distress (e.g., depression) can be viewed as capturing emotion dysregulation (Galambos & Costigan, 2003).

Self-concept, identity and assertiveness are important developmental tasks in adolescence (Erikson, 1968; Harter, 1990) and are related to successful emotional regulation (Haviland et al., 1994). On the other hand, these factors contribute to positive mood and an absence of psychological distress (Mann et al., 2004). Adolescence is a specific period of life when the perception of self is still developing and might be influenced by one's current emotional state. Indicators and predictors of adolescents' mental health are essentially connected with the present but also future health and health-related behaviour of adolescents (Galambos & Costigan, 2003). In the past as well as in recent years a number of studies and reports concentrating on various dimensions of mental health in adolescence, including psychological well-being and self-esteem, have been published (Jahoda, 1958; Taylor & Brown, 1988; Kling et al., 1999; Anderman, 2002; Konu & Rimpelä, 2002; Trzesniewski et al., 2006; Costello et al., 2008; Currie et al., 2008). Numerous studies suggest that psychological well-being and self-esteem are multifactor constructs which could cover several aspects of well-being and perception of self (Marsh, 1996; Werneke et al., 2000; French & Tait, 2004; Gao et al., 2004; Schmitt & Allik, 2005; Roth et al., 2008; Halama, 2008; Del Pilar Sánchez-López & Dresch, 2008). In addition, they can be used as individual multifactor constructs, as has been mentioned. At the same time their mutual association influences the development of mental health in adolescence. Therefore, our study focuses on mental health, especially on psychological well-being and self-esteem.

Psychological well-being is often operationalised as a mood, affect, trait, or experience which may last few moments or a few days. In comparison with mood, psychological well-being consists of changeable components which could dynamically influence the actual mental state (Hasmenn et al., 2000; Martin & Newell, 2005). Self-esteem, which can be defined as an overall sense of worthiness as a person, is one of the most frequently studied psychological constructs in personality (Rosenberg, 1979; Schmitt & Allik, 2005).

This study deals with protective and risk factors of psychological well-being and self-esteem and describes changes in psychological well-being and self-esteem over the period of adolescence. At the same time differences between countries were studied. Special attention is given to the influence of the school context. In this chapter, we explain the aims of the study, formulate related research questions and outline the structure of this thesis.

1.1.1 Psychological well-being and self-esteem in adolescence - protective and risk factors

It has been established that factors like school connectedness, good relationships with others, liking family and peers, closeness to others,

physical activity or healthy eating habits can protect young people and increase their psychological well-being (Marshall, 2001; Taylor & Turner, 2001; Allison et al., 2005; Rayle, 2005). Conversely, some factors, e.g. bullying, smoking, alcohol and drug use and unsafe sexual practices, tend to have a negative impact on psychological well-being (Cuijpers, 2002; Ethier et al., 2006; Kalina, 2007; Rigby et al., 2007).

Several previous studies have linked high self-esteem to many positive outcomes, including positive peer relationships (Goldstein et al., 2005), healthy social relationships (Murray et al., 2000; Neyer & Asendorpf, 2001; Trzesniewski et al., 2003), healthy subjective well-being (Trzesniewski et al., 2003) and positive perceptions by peers (Robins et al., 2001). Subsequently, low self-esteem has been linked to a number of problematic outcomes, including antisocial behaviour such as bullying, depressive symptoms and health problems (Ma, 2002; Veselska et al., 2009).

1.1.2 Psychological well-being and self-esteem in adolescence - changes over time

Though there are a variety of research fields presenting different opinions regarding the stability of psychological well-being and self-esteem over time during adolescence, this period is generally considered to be a time of increased mental problems and decreased psychological well-being and self-esteem (Mental Health Foundation, 1999; Jones & Meredith, 2000). Regarding psychological well-being, conclusive evidence on the changing patterns of psychological distress over time is lacking, as West and Sweeting (2003) mentioned. In addition, different findings on the stability of psychological well-being are related to the concept incorporated and measures used. Some studies have shown that health status changes over time during adolescence in the direction from worse to better with increasing age with exception of early adolescence, when psychological well-being is described as rather positive (Currie et al., 2004; Sleskova et al., 2005). Among the many changes experienced during adolescence, self-esteem shifts from rather high during early adolescence to lower in middle adolescence (Kling et al., 1999; Baldwin & Hoffmann, 2002; Impett et al., 2008), and these developmental processes of self-esteem are different for males and females (Baldwin & Hoffmann, 2002; Robins & Trzesniewski, 2005). Males more frequently have higher self-esteem than females during adolescence (Bolognini et al., 1996; Robins & Trzesniewski, 2005), but as Kling et al. (1999) mentioned, the confirmation of significant gender differences in self-esteem does not end this topic because several domains of the self should still be examined.

Concerning health in general, there are studies in which no changes in self-reported health among adolescents aged 11 to 21 years were found (Wade et al., 2002). On the other hand, a study by Salonna et al. (2008)

among boys and girls from 15 to 19 identified not only deterioration but also improvement and stability in self-reported health during this stage.

1.1.3 Psychological well-being and self-esteem in adolescence - differences between countries

The political, cultural and historical diversity of Europe and the population density, degree of population aging and differences in prosperity levels and lifestyle habits in the countries of the European Union certainly have an effect on its inhabitants. All of these factors have been shown to have links with mental health status (European Commission, 2004), and several reports have presented cultural differences on health, health-related behaviour and the social context of young people. One of them, the 2005/2006 HBSC cross-national study, identified differences in the mental health of young people across the USA, Greenland and Iceland, continental Europe and Israel (Currie et al., 2008). As findings from this report show, there are large cross-national differences not only in reported levels of fair or poor mental health in young people, with scores ranging in 11-year-old early adolescents from 4% (Greece) to 28% (Ukraine), in 13-year-olds from 5% (Macedonia) to 34 % (Ukraine) and in 15-year-olds from 6% (Macedonia) to 37% (Ukraine), but also in other health-related aspects of mental health (Currie et al., 2008). The findings of Bradshaw and Richardson (2009) on child well-being in Europe have shown that the highest personal well-being was reported by children from the Netherlands, Spain, Finland and Belgium, and lowest from Bulgaria, Romania, Latvia and Lithuania. Such studies suggest that significant differences between countries do exist.

The same has been shown in exploring the culture-specific features of global self-esteem (Schmitt & Allik, 2005). Findings from a study with 53 participating nations showed that while all individual nations scored above the theoretical midpoint of the Rosenberg Self-esteem Scale (sum score ranges from 10 to 40; a higher score means higher self-esteem), significant country differences were still present. Japan and other Asian countries scored relatively low (25.5) and the United States scored relatively high (32.21). The differences between Slovakia (28.94) and its neighbouring countries were also relatively marked (Czech Republic 28.47, Austria 31.78, and Poland 30.34). As the findings of Schmitt & Allik (2005) showed, generally positive self-evaluation may be culturally universal, with individual differences varying across cultures.

1.2 Mental health in the school context

In most European countries young people attend school for 10 years or more. School is one of the places where they develop an individual

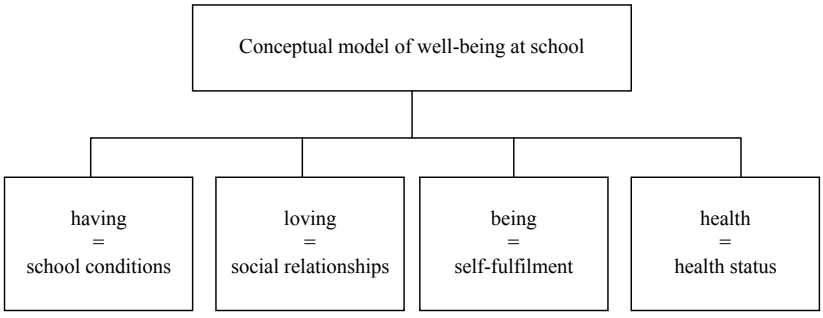
and a social personality. School can play, in conjunction with the family and significant others, an important role in shaping behaviour and life's values. In addition, school is a primary setting for health promotion, a place where the health of children and adolescents can be enhanced.

1.2.1 A model of well-being in the school environment

Previously, as several authors have presented, health and also well-being in school has been separated from other aspects of school life in many studies (Konu & Rimpelä, 2002). Therefore, the School Well-being Model of Konu and Rimpelä has also been used as a theoretical model in research (Konu & Rimpelä, 2002). This conceptual model is based on Allardt's sociological theory of welfare and assesses well-being as an entity in the school setting (Allardt, 1976; 1989). According to Allardt, well-being is a state in which it is possible for a human being to satisfy his/her basic needs. This model of well-being in school is connected with teaching and education and with learning and achievements. The concept of well-being is divided into four categories: school conditions (having), social relationships (loving), means for self-fulfilment (being), and health status (health).

School conditions (having) include the physical environment outside a school and the environment inside a school. This category deals with the learning environment, curriculum, group sizes, schedules of studies, punishments, school lunches, health care, trustee and counselling, as well as noise, ventilation, the number of students in a class, poor lighting, temperature, dust and dirt, unsuitable working spaces and unsuitable conditions like the toilets and bathrooms. **Social relationships** (loving) refer to the relationships between students and teachers and the students among themselves. This category is also related to group dynamics, bullying, cooperation between school and homes, decision-making in school and the atmosphere of the whole school organization. **Means for self-fulfilment** (being) is seen in this model as the way in which the school offers means for self-fulfilment. Each pupil should feel like a part of school and be considered as an equally important member of the school community. The means for self-fulfilment category includes work appreciation, attitudes towards education and school, getting help in studying, participation, encouraging and commending, self-esteem and orientation on the future. **Health status** (health) comprises physical and mental symptoms, common colds, chronic diseases and other diseases and illnesses. The categories described above are shown in Figure 1.1.

Figure 1.1 The School Well-being conceptual model according to Konu and Rimpelä (2002)



1.2.2 Social relationships and mental health of adolescents

In recent years, literature on **school connectedness** has emerged. Most of the previous studies indicate that close relationships and school connectedness are a cornerstone for successful adaptation and a reliable marker of individual adjustment in adolescence concerning positive academic, psychological and behavioural outcomes (Anderman, 2002; Laursen & Mooney, 2008). In addition, studies have shown that when students experience a supportive environment in school, they are more motivated for participating actively in school life; they are more likely to experience positive outcomes such as improved social skills or achievement (Battistich et al., 1997; Hughes & Kwok, 2007). On the other hand, deprivation of connectedness and relationships induce a variety of negative outcomes, including academic problems, emotional distress, health problems and a tendency to health risk behaviour (e.g. smoking, alcohol and drug abuse, bullying) (Baumeister & Leary, 1995; Anderman, 2002).

In the school environment, pupils are exposed to a wide range of new social situations, which compels them to learn and develop new social roles without the supervision of their parents (Inglés et al., 2005). Peer relationships play a critical role in the development of social skills such as **assertiveness** (La Greca & Lopez, 1998). Recent studies have explored the relationship between assertiveness and mental health in adolescence and have found certain variables which influence assertiveness, including culture (Eskin, 2003), self-esteem (Bijstra et al., 1994), psychological distress (Taylor et al., 2002), depression (Eskin, 2003), risk behaviour (Cuijpers, 2002) and gender (Bourke, 2002). Although some earlier studies showed that boys are more assertive than girls (Eskin, 2003), data from recent years indicate that girls have a significantly higher score on assertive

communication and independence (Bourke, 2002) or that there are no significant gender differences in assertiveness (Karagözoğlu et al., 2008).

Bullying in particular has been acknowledged as a serious problem over recent years in many countries as a common and widespread form of violence in the school context (Roland & Galloway, 2002). It has been defined as a form of aggression in which a student or students physically or verbally assault another student without being provoked. Bullying takes many forms, such as physical or verbal aggression, social isolation and recently also increased aggression via mobile telephones and email, with the deteriorative effect on both victims and offenders (Olweus, 1993; Ma, 2002; Correia & Dalbert, 2008). Effects of bullying include low self-esteem, increased frequency of depression, school failure (Hawker & Boulton, 2000), delinquency (Baldry & Farrington, 2000) and deteriorated well-being (Rigby, 2003; Perren & Hornung, 2005).

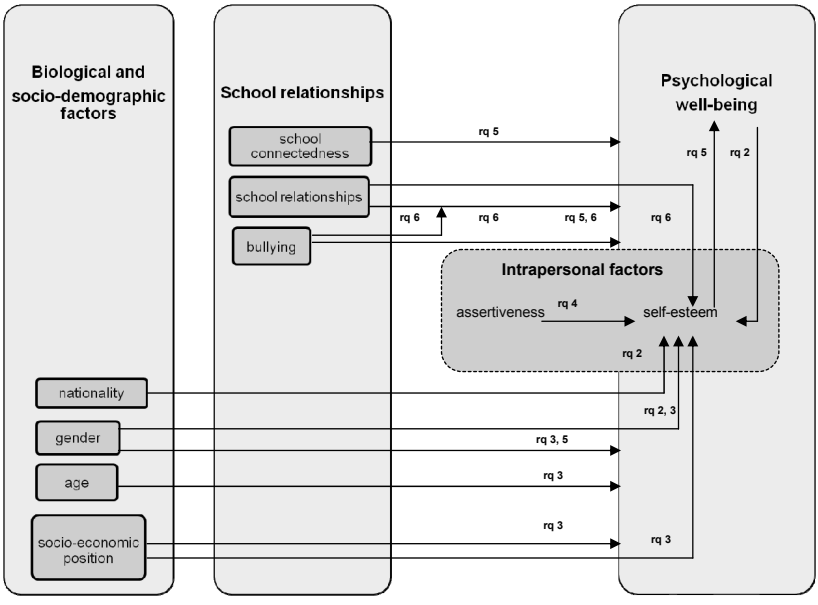
1.3 Aims of the study and research questions

Based on previous findings in this field, the present study focuses on psychological well-being and self-esteem among Slovak adolescents in the school context. The general aims of the study were:

- to unravel the factor structure of measures for psychological well-being and self-esteem;
- to explore determinants of psychological well-being and self-esteem at a certain moment in adolescence;
- to explore changes over time in psychological well-being and self-esteem.

The model of the relationships examined within this thesis is shown in Figure 1.2.

Figure 1.2 Model of the relationships examined within this thesis



Based on this model and on the previous literature, the following research questions have been developed.

Research question 1.
What are selected psychometric aspects of the GHQ-12 and RSE in Hungarian and Slovak early adolescents with regard to their factor structure? (Chapter 3)

Research questions 2.
Are there substantial differences in self-esteem among adolescents from Central Europe countries? Are there associations between native background and psychological well-being and self-esteem among young Hungarian and Slovak boys and girls in adolescence? (Chapter 4)

Research questions 3.
Is there change over time in psychological status from early (age of 11.5 years) to middle adolescence (age of 15 years)? Do gender and parental education play a role through answering questions if is there a difference in magnitude and direction (improved, stable or deteriorated) of change in the domains of psychological well-being and self-esteem between the age of 11.5 and 15 between boys and girls? Are gender and parental education predictors of psychological well-being and self-esteem at the age of 15? (Chapter 5)

Research question 4.
Does assertiveness influence adolescents' psychological well-being and self-esteem while controlling for gender? (Chapter 6)

Research question 5.
Do gender, bullying, school connectedness and self-esteem contribute to psychological well-being in Slovak adolescents? (Chapter 7)

Research questions 6.
Do school relationships influence psychological well-being and self-esteem? Are school relationships moderated by bullying? (Chapter 8)

1.4 Outline of the thesis

Chapter 1 provides an overall introduction to mental health in the adolescence period. The description of the constructs of psychological well-being and self-esteem and their associations with possible determinants (age, native background and school context) are included. The chapter ends with the general and also individual aims of the present thesis. **Chapter 2** describes the design of the studies, data collections, samples and statistical analyses used in this thesis. **Chapter 3** presents the psychometric characteristics of the key variables – the GHQ-12 and the RSE – in Hungarian and Slovak early adolescents with regard to their factor structure. **Chapter 4** explores differences in the self-esteem of adolescents among Central European countries. In addition, the associations between cultural background, psychological well-being and self-esteem among young Hungarian and Slovak adolescents are explored. **Chapter 5** deals with changes in psychological well-being and self-esteem between the ages of 11.5 and 15. The role of gender and parental education as determinants of psychological well-being and self-esteem at the age of 15 is also explored. The associations between assertiveness and the psychological well-being and self-esteem of adolescents are studied in **Chapter 6**. The influence of the distress dimension on psychological well-being and self-esteem, controlling for the performance dimension, is explored. **Chapter 7** investigates gender differences in bullying, school connectedness, self-esteem and psychological well-being in terms of their interrelations; it also explores the joint contribution of gender, bullying, school connectedness and self-esteem to psychological well-being in adolescents. The role of school relationships in adolescents' psychological well-being and self-esteem are studied in the **Chapter 8**. Finally, **Chapter 9** discusses the main findings and possible implications for future research and practice.

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Chapter 2

Design of the study and data sources

The present study, entitled *'Psychological well-being and self-esteem among Slovak adolescents'*, is carried out in cooperation between the University of Groningen in The Netherlands and PJ Safarik University in Kosice, Slovakia. The study focuses on mental health, specifically on psychological well-being and self-esteem among Slovak adolescents. This chapter provides the study context, data sources and measures.

2.1 Study context

This study presents the three following complementary projects.

In 1993, in the framework of the European Network of Health Promoting Schools (ENHPS), a joint project of the European Commission, the WHO Regional Office for Europe and the Council of Europe, a new intervention programme called 'Promoting mental and emotional health of children in school environment' was developed (Weare & Gray, 1994). This social-psychological programme was aimed at teachers (Weare & Gray, 1992), and its objective was to give more attention to mental and emotional health, which would lead to a better mental health status in schools and decrease the levels of distress. In 1999, two Central European countries which were not yet EU member states at that time – Slovakia and Hungary – applied this project on a local scale in Kosice, Miskolc and Debrecen using an identical study design and with a comparable sample among 11 years old early adolescents. An evaluation study of this intervention on children's mental and emotional health was carried out by Katreniakova (2001). The study focused on the development and implementation of strategies of health promotion, aiming at specific aspects of early adolescents' mental and emotional health as measured by such self-reported indicators as psychological well-being, self-esteem, affective balance, life events and social skills. An assessment of the mental and emotional health of the respondents was done three-times (baseline, first follow-up after 6 months, and a second follow-up 4 months later) during one school year (1999/2000) in an experimental group and a control group among 6th grade elementary school students. Teachers from the experimental group underwent 26-hours of training under the supervision of school psychologists and psychology students from September to November 1999. The leading line of the training programme was to increase the teachers' self-confidence and self-esteem, which would

then have a supposed subsequent positive influence on their pupils. The participants in the training programme consisted of 40 teachers (5 men and 35 women) from the four experimental elementary schools. The early adolescents' respondents consisted of 519 pupils (264 boys and 255 girls) from the four experimental (207 children) and the four control (312 children) elementary schools in Košice, Slovakia. In this study the General Health Questionnaire-12 and the Rosenberg Self-esteem Scale were used for evaluating the psychometric parameters of psychological well-being and self-esteem in Hungarian and Slovak early adolescents (Chapter 3).

With the aim of comparing psychological well-being and self-esteem with the above mentioned study among 11.5 year-old early adolescents, a third follow-up data collection was performed in Slovakia in 2003 among 15 year-old middle adolescents. Based on both mentioned projects, changes over time—the differences in magnitude and direction of changes in psychological well-being and self-esteem between the age of 11.5 and 15-year olds—were explored (Chapter 5).

On the basis of the data collected in Slovakia and Hungary, the association between nationalities as a criterion for socio-cultural background and psychological well-being on the one hand and self-esteem of respondents from both countries on the other hand was studied. In addition, the differences in self-esteem of adolescents between Central and Eastern European countries were explored (Chapter 4).

The 2003 project was also enlarged with new indicators – school connectedness and bullying – for a deeper understanding of the factors related to psychological well-being and self-esteem (Chapter 6 and 7).

In line with similar studies focusing on factors related to mental health in the target group, the school environment was identified as an important factor (Rigby, 2000; Due et al., 2005). In consideration of this, the dataset of a project entitled 'Individual, interpersonal social and societal factors of risk behaviour among adolescents and young adults' in 2006 offered a set of variables related to school level. The main attention was given to psychological well-being and self-esteem within the context of the school. A specific emphasis was devoted to the relationships which pupils experience with teachers and peers in this environment. The part played by bullying behaviour was created in more detail, and specific forms of this risk behaviour were added (Chapter 8).

2.2 Data, data collection procedure, samples

Several samples are included in this study. The first sample (1a) in this thesis consists of the respondents from the project 'Promoting mental and emotional health of children in the school environment' (Weare & Gray, 1994; Katreniakova, 2001). Respondents were 519 pupils aged 10 to 14 years

(mean age 11.5 years; 50.9% boys, 49.1% girls) from 8 elementary schools located in the city of Kosice, Slovakia. The response rate of the research sample was 88.8%. All schools were state schools and were selected randomly. Respondents completed the questionnaires in their classrooms at school during one 45 minutes regular class in absence of the teacher on a voluntary basis and under the guidance of the research assistant. Data were collected in September 1999 (response rate was 88.8%), February 2000 (response rate was 73.6%), and June 2000 (response rate was 80.9%). This sample is used in the Chapters 3, 4 and 5.

From April to June 2003 all schools from the first wave were asked to participate in the third follow-up measure. Respondents were 461 pupils aged 14 to 17 (mean age 14.9), however the response rate achieved due to the absence of students from school on the day of data collection was 71.4%. This sample is used in Chapter 5, and more details can be found in Table 2.1.

The second sample, similar to the first sample, is a part of the international comparative project "Promoting Mental and Emotional Health in the ENHPS". This sample consists of 329 pupils (52.7% boys, 47.3% girls) with a mean age of 11.5 years (range 10 - 14 years) from Hungary. The response rate in this sample was 71.4%. Data were collected at 10 elementary schools, 4 schools situated in the city of Miskolc and 6 schools in the city of Debrecen, in October 2000, January 2001 and June 2001. The schools were selected at random and all were state schools. Respondents completed the questionnaires at school, in their classrooms in absence of their teacher and under the guidance of the research assistant. This sample is used in the Chapters 3 and 4.

The third sample consists of 1023 students (487 boys - 47.6%) from 18 elementary schools in Kosice, Slovak Republic. The age of the respondents ranged from 14 to 17 years, with a mean age of 14.9 years (standard deviation 0.51). The selected schools were located in different parts of Kosice in order to achieve a representative sample of the city. The selection of schools was influenced by previous cooperation with 8 of the schools and by the willingness of a further 10 schools to support the study. Data were collected from April to June 2003. The questionnaires were completed by respondents on a voluntary and anonymous basis during one regular 45-minute class in the absence of a teacher in the presence of a trained researcher. As a result of the absence of students from school, the response rate was 82.6%. This sample is used in the Chapters 6 and 7.

The fourth sample consists of 3694 students ranging from 13 to 16 (mean age 14.3 years; 49% boys, 51% girls). An overall response rate of 93.5% was achieved. Data were collected in 2006 at 46 elementary schools in major Slovak cities representing different parts of the country: Bratislava (Western Slovakia), Zilina (Northern Slovakia), Kosice (Eastern Slovakia) and other smaller cities in the eastern region of Slovakia.

Research assistants administered questionnaires during two regular 45-minute lessons in a complete 90-minute period of time. Students filled out the questionnaires on a voluntary and anonymous basis in the absence of the teachers. This sample is used in Chapter 8.

A brief description of the present samples is provided in Table 2.1.

Table 2.1 The characteristics of the study samples

		Sample 1a	Sample 1b	Sample 2	Sample 3	Sample 4
Chapter(s)		3, 4, 5	3, 4	5	6, 7	8
N		519	465	461	1 238	3 725
Number of respondents		461	431	329	1 023	3694
Gender	Male	50.3%	52.7%	52%	47.6%	49%
	female	49.7%	47.3%	48%	52.4%	51%
Age	Mean (SD)	11.5 (0.58)	11.5	14.9 (0.45)	14.9 (0.51)	11.3 (0.65)
	Range	10 - 14	10 – 14	14 – 17	14 – 17	11 - 17
Response rate		88.8%	92.5%	71.4%	82.6%	93.5%
Loss to follow up				28.6%		
Year of data collection		1999	2000	2003	2003	2006
Country		Slovakia	Hungary	Slovakia	Slovakia	Slovakia

2.3 Measures and statistical analysis

2.3.1 Measures

The central dependent variables of this thesis were psychological well-being and self-esteem.

Psychological well-being is described as an individual's mood and is often covered by four identifiable elements of distress: depression, anxiety, social impairment and hypochondria (McDowell & Newell, 1996). **Depression/anxiety** was used as an indicator of feelings of distress and **social dysfunction** as an indicator of the inability to carry out one's normal 'healthy' functions; both factors are part of the GHQ-12, a shortened version of the General Health Questionnaire-60 (Goldberg & Williams, 1988; French & Tait, 2004; Martin & Newell, 2005; Penninkilampi-Kerola et al., 2006). Two factors (**positive self-esteem factor** and **negative self-**

esteem factor) from the Rosenberg Self-esteem Scale – RSE were used for measuring **self-esteem**, which can be defined as a person's global appraisal of his/her positive or negative value (Rosenberg, 1965; Marsh, 1996; Schmitt & Allik, 2005; Halama, 2008).

The following independent variables were used in the separate chapters. **Cultural background** was operationalised as nationality (Chapter 4). Parental education was employed as an indicator of **socioeconomic status** in chapter 5. The respondents answered two questions on 'What is the highest completed education of your father (mother)?', and the four basic categories were recoded into three categories as follows: 'post-secondary vocational' (uncompleted/completed primary school, post-secondary vocational programmes), 'accredited post-secondary vocational' and 'university and postgraduate'. **Assertiveness**, which plays an important role in the well-being and self-esteem of adolescents, was measured by the 47-item Scale for Interpersonal Behaviour -SIB (Arrindell & van der Ende, 1985) and used in chapter 6. Four subscales: (1) display of negative feelings or negative assertion, (2) expression of and dealing with personal limitations, (3) initiating assertiveness, and (4) a display of positive assertion were applied. Respondents had to indicate to what extent such situations made them anxious (the distress dimension) and how often they engage in such situations (the performance dimension). **School connectedness** was assessed using the School Connectedness Score (SCS), which consists of five statements 'I feel close to people at this school', 'I feel like I am part of this school', 'I am happy to be at this school', 'The teachers at this school treat students fairly' and 'I feel safe in my school' (Bonny et al., 2000) (Chapter 7). Eight statements—'My classroom is placing where…. (1) I don't feel a part of the group, (2) I make friends easily, (3) I feel I belong, (4) I feel awkward and inconvenient, (5) others pupils obviously like me, (6) I feel alone, (7) I am often bored, and (8) I don't like to go'—were used as indicator of the **pupil - peer relationships** (question number 27 from the Pupils' questionnaire of the OECD Programme for International Student Assessment 2003) in chapter 8. **Pupil-teacher relationships** recorded using fifteen statements such as 'they like me a lot', 'they are very conscionable', 'they usually praise me', 'and they help me a lot', from the question 'When you think about your study in elementary school, how do your teachers behave towards you?' were used in the chapter 8. **Bullying** used in chapter 7 was measured using two questions: 'How often have you been bullied in the current school year?' and 'How often have you taken part in bullying others in the current school year?' (Currie et al., 2004). In chapter 8 bullying behaviour was divided into six bullying categories (1) physical assault, beating; (2) unpermitted borrowing of things; (3) enforcement of senseless orders; (4) ridicule or cruel nicknames; (5) threats, verbal insults; (6) intimidation. Depending on whether the respondents had ever taken part in these

situations or if these situations had ever happened to them, respondents were divided into four distinguishable character profiles: normative contrasts (those who neither bully nor are bullied); passive victims (those who are/were bullied); aggressive non-victims (those who bullied); and aggressive victims (those who bullied and who are also bullied). **Gender** was used as independent variable in the chapters 4, 5 and 7. In the chapter 6 and 8 gender was put in the linear regression models as possible covariate.

2.3.2 Statistical analysis

All analyses used in the present study were performed using the statistical software package SPSS versions 10.1., 12.0. and 14.0. A detailed description of the analyses can be found in the Statistical analysis sections of the separate chapters.

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Chapter 3

Psychometric evaluation of the General Health Questionnaire-12 and Rosenberg Self-esteem Scale in Hungarian and Slovak early adolescents

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Abstract

The reliability and factor structure of the General Health Questionnaire-12 (GHQ-12) and the Rosenberg Self-Esteem scale (RSE) were evaluated in samples of Hungarian and Slovak early adolescents. The principal component analyses support the two-factor solution for GHQ-12 with subscales "depression/anxiety" and "social dysfunction". Similarly, the RSE appears to be an instrument with a two-factor structure with subscales "negative self-esteem" and "positive self-esteem" in both samples. Reliability analyses of GHQ-12 and RSE total scales show satisfactory results, although the reliability figures of some components are lower. The factor structure of RSE component "negative self-esteem" is less clear. Researchers need to be aware of the potential problems surrounding the negative item wording and make every effort to ensure that negatively-worded items are carefully constructed and easily interpreted by the population of early adolescents.

Keywords: General Health Questionnaire-12, Rosenberg Self-Esteem scale, psychometrics, early adolescents

Introduction

Recent studies show increasing interest in the mental health of early adolescents (Bolognini et al., 1996; Eccles, 1999; Oksoo & Kyeha, 2001; Sweeting & West, 2003). There are several reasons why attention to the mental health of early adolescents appears to be so important. Firstly, in the period of early adolescence several specific physical and social changes occur which have an impact on psychological development. This period has been described as an especially stressful phase of development (Benjet & Hernandes-Guzman, 2001; Mahon et al., 2003). Secondly, the latest studies demonstrate the important roles of some psychological factors, particularly stress, anxiety and depressive mood on adolescents' health risk behaviour (Callas et al., 2004; Weiss et al., 2005). If mental health as fundamental to all forms of health is a positive attribute, then mental health promotion is a strong reason for healthy and valuable adolescents' development (Weare, 1996). The project reported in this study was carried out in Hungary and Slovakia in 1999 as a part of the international comparative intervention project "Promoting Mental and Emotional Health in the European Network of Health Promoting Schools (ENHPS)" (Weare, 1996). The ENHPS study concentrated on developing and implementing strategies of health promotion focussing on specific aspects of early adolescents' mental health, such as psychological well-being and self-esteem. These aspects were measured using two world-wide used instruments: the General Health Questionnaire–12 (psychological well-being) and the Rosenberg Self-esteem Scale (self-esteem).

General Health Questionnaire

The General Health Questionnaire (GHQ) was developed in England as a self-administered screening instrument to identify psychological distress for use in general population surveys, or among general medical outpatients. It was designed to cover four identifiable elements of distress: depression, anxiety, social impairment and hypochondria. The questionnaire was originally created as a 60-item instrument. Shortened versions (30, 28, 20 and 12 items) were developments from the original. The 12-item version of GHQ is the most widely-used screening instrument for common mental disorders (Werneke et al., 2000; Aalto-Setala et al., 2002). The GHQ questions ask whether the respondent has recently experienced a particular symptom (like abnormal feelings or thoughts) or type of behaviour (McDowell & Newell, 1996). The four-point response scale of the questionnaire may be scored in two ways. Firstly, it can be treated as a multiple-response scale or "Likert score" (0, 1, 2, 3). The alternative is to treat it as a bimodal response scale (0, 0, 1, 1). The GHQ-12 summary score ranging from 0 to 12 with cut-off point 2/3 for "cases" indicating a level of psychological distress of potential clinical significance is used (Goldberg

& Williams, 1988). The GHQ manual notes that it is not appropriate for use with children but that it has been used with adolescents (Goldberg & Williams, 1988). The scale has been used in a number of countries and languages for different age groups. In 1988 Goldberg and Williams reported that this instrument had been translated into about 38 languages, and so far over 50 validity studies have been published. The scale is widely used in the USA, Australia and Western Europe (Goldberg & Williams, 1988; Werneke et al., 2000), it is occasionally used in Asian countries (Montazeri et al., 2003; Gao et al., 2004) and there are also several publications which refer to the utilisation of the GHQ in Central and Eastern Europe, particularly in Hungary, Belarus, Croatia, Poland and also Slovakia (Radovanovic et al., 1983; Kulenovic et al., 1995; Nagyova et al., 2000; Geckova et al., 2001). Although the GHQ is often used as a screening instrument there are still questions regarding its dimensionality. Previous studies describe substantial factor variance on scales between the centres being evaluated. Factor analyses on GHQ-12 have yielded two- and three-factor solutions according to different settings, including translations into different languages (Goldberg & Williams, 1988; Werneke et al., 2000).

Rosenberg Self-esteem Scale

The concept of self-esteem is essential for knowing how individuals perceive, value and regard the self, in order to interpret their behaviour. The RSE is one of the most popular and well-utilised measures of self-esteem. Originally the scale was developed to measure adolescents' global feelings of self-worth or self-acceptance, and is generally considered as the standard against which other measures of self-esteem are compared (Blascovich & Tomaka, 1991). The benefit of this scale is that it is short, easy and quick to administer. The scale is an attempt to achieve a one-dimensional measure of global self-esteem. Ten items are included, divided into 5 positive and 5 negative statements, and they are usually scored using a four-point response ranging from strongly disagree to strongly agree. In spite of the popularity of this scale, studies focussing on psychometrics are rather scarce and besides, existing studies do not give us satisfactory answers for the factor structure of the RSE. Some studies accept the scale as a one-dimensional 10-item instrument; others report a two-dimensional solution (Kaplan & Pokorny, 1969; Blascovich & Tomaka, 1991; Marsh, 1996; French & Tait, 2004). Studies from Slovakia and Czech republic are using this instrument as a two or three-dimensional scale (Blatny & Osecka, 1994; Osecka & Blatny, 1997; Fickova, 1999).

The main aim of the present study is to evaluate selected psychometric aspects of the GHQ-12 and RSE in Hungarian and Slovak early adolescents with regard to their factor structure.

Method

Procedure and sample

The study was carried out as part of the international comparative project "Promoting Mental and Emotional Health in the ENHPS" (Weare, 1996). Two countries in Central Europe, Hungary and Slovakia, participated in this research. Data were collected in September 1999 in Slovakia and in September 2000 in Hungary. The Slovak sample consisted of 519 pupils (50.9% boys, 49.1% girls), mean age 11.5 years (range 10 - 14 years). The Hungarian sample consisted of 431 pupils (52.7% boys, 47.3% girls), mean age 11.5 years (range 10 - 14 years). The Slovak children came from 8 elementary schools located in the city of Kosice. The Hungarian children came from 10 elementary schools, 4 schools situated in the city of Miskolc and 6 schools in the city of Debrecen. The schools were selected at random and all were elementary state schools. Respondents completed the questionnaires at school, in their classrooms and under the guidance of the field workers. The response rate was 88.8% in the Slovak sample and 92.5% in the Hungarian sample.

Measures

Psychological well-being was measured using the 12-item version of the General Health Questionnaire (GHQ-12) (Goldberg, 1972). The items focus on various aspects of respondents' psychological disposition, for example problems with sleep (Have you recently lost much sleep over worry?), strain (Have you recently felt constantly under strain?), happiness (Have you recently been feeling reasonably happy, all things considered?) or stress (Have you recently been feeling unhappy or depressed?). The questions compare how the respondents' present state differs from their usual state. For the scoring, a four-point Likert scale (0,1,2,3) was used with sum score ranging from 0 to 36. Higher score indicates lower psychological well-being.

Self-esteem was assessed using the Rosenberg Self-Esteem scale (RSE) (Rosenberg, 1965). The items ask what respondents think about themselves, e.g. "At times I think I am no good at all.", "I feel that I am a person of value, at least on an equal plane with others.", "I take a positive attitude towards myself.". The 10 items on the scale include 5 positive and 5 negative statements. Each item has a four response options (1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree). The sum score for self-esteem varies from 10 to 40. Higher sum score indicates higher self-esteem.

The adaptation of the instruments to Slovak conditions was carried out via the following procedure. Firstly, two Slovak native speakers with mastery of the English language translated the instruments from English

into Slovak. Then the instruments were re-translated from Slovak back into English, this time by a native English speaker with mastery of the Slovak language. The discrepancies between the different versions of the instruments were discussed.

Statistical analyses

To analyse the data correlations, reliability analyses, item analysis and Principal Component Analysis (PCA) available in SPSS 10.1 were used.

Results

Principal Component Analysis

Principal Component Analysis (PCA) with varimax rotation was used to examine the factor structure of the Hungarian and Slovak versions of the GHQ-12 and RSE.

GHQ-12

Table 3.1 presents loadings (item-component correlations) of the GHQ-12 in the Hungarian and Slovak samples. In the Hungarian version of the GHQ-12 two significant factors with eigenvalues above 1 accounted for 41.4% of the total variance. Items 1, 3, 4, 7, 8 and 12 loaded on component 1. Items 2, 5, 6, 9, 10 and 11 loaded on component 2. The components can be labelled as follows: component 1 = depression/anxiety, component 2 = social dysfunction. The PCA in the Slovak version of the GHQ-12 yielded a three-factor solution accounting for 47.1% of the variance explained. In the Slovak sample the three-factor structure was less clear (not presented in the table). Items 2, 5, 6, 9 and 10 loaded with ≥0.5 on component 2, items 7 and 12 on component 1 and items 1, 4 and 8 on component 3. Item 3 was suspect with loadings ≥0.35 on components 2 and 3. Similarly, item 11 was suspect with loadings ≥0.4 on components 1 and 2. The forced two-factor solution with varimax rotation was therefore carried out in the Slovak sample. The two-factor solution accounted for 38.4% of the variance explained and the factor structure was identical with the results of the Hungarian version.

Table 3.1 Principal component analysis of the GHQ-12 in the Hungarian and Slovak samples

		Hungary (n=431)		Slovakia (n=519)	
No. of item	**GHQ-12**	Component 1	Component 2	Component 1	Component 2
1	Concentrate	.27	**.41**	.25	**.43**
3	Play useful part	.07	**.41**	.15	**.51**
4	Making decisions	-.01	**.72**	-.10	**.50**
7	Enjoy activities	.19	**.60**	.17	**.46**
8	Face up problems	.12	**.69**	.03	**.70**
12	Feeling happy	.39	**.49**	.15	**.56**
2	Lost sleep	**.57**	-.02	**.67**	-.01
5	Under strain	**.68**	.22	**.71**	.08
6	Overcome difficulties	**.68**	.15	**.70**	.09
9	Feeling unhappy	**.74**	.14	**.72**	.10
10	Lost self-confidence	**.56**	.29	**.62**	.23
11	Feeling worthless	**.67**	.16	**.51**	.27

Component 1 = depression/anxiety
Component 2 = social dysfunction

RSE

In the Hungarian version of the RSE two significant factors accounted for 44.9% of the total variance. Table 3.2 presents loadings of the RSE items in this sample. Items 1, 3, 4, 7 and 10 loaded on component 1. Items 2, 5, 6, 8 and 9 loaded on component 2, although item 9 is suspect with high loading also on component 1. Component 1 can be denoted as "positive self-esteem" and component 2 as "negative self-esteem". In the Slovak version of the RSE PCA yielded a three-factor solution accounting for 50.8% of the variance explained. The factor structure was less clear however, with items 8 and 10 loading on component 3 (not labelled). In order to obtain a clearer factor structure, the forced two-factor solution with varimax rotation was carried out in the Slovak sample. The two-factor solution accounted for 40.7% of the variance explained and the factor structure was identical with the Hungarian version of the RSE.

Table 3.2 Principal component analysis of the RSE in the Hungarian and Slovak samples

		Hungary (n=431)		Slovakia (n=519)	
No. of item	**RSE**	Component 1	Component 2	Component 1	Component 2
2	No good at all	.15	**.70**	.03	**.62**
5	Not proud	.23	**.57**	-.01	**.62**
6	Feel useless	.16	**.70**	.28	**.71**
8	Lack of respect	-.05	**.62**	-.41	**.32**
9	Feel a failure	**.60**	.40	.24	**.68**
1	Satisfied with self	**.57**	.29	**.58**	.21
3	Have a good quality	**.65**	-.21	**.60**	-.02
4	Equal to others	**.65**	.15	**.51**	.26
7	Feel valuable	**.69**	.24	**.61**	.20
10	Positive attitude	**.56**	.07	**.68**	.04

Component 1 = positive self-esteem

Component 2 = negative self-esteem

Reliability and item analysis

To test the reliability the internal consistency and item analysis of the questionnaires was measured using Cronbach's alpha and mean inter-item correlations (Table 3.3). Cronbach's alpha for the GHQ-12 total scale was 0.79 and 0.73 for the Hungarian and Slovak versions, respectively. Cronbach's alpha for the subscale "depression/anxiety" (component 1) appeared to be 0.76 in the Hungarian and 0.75 in the Slovak sample. Cronbach's alpha for the subscale "social dysfunction" (component 2) was 0.62 in the Hungarian and 0.53 in the Slovak sample.

Cronbach's alpha for the RSE total scale was 0.75 and 0.65 for the Hungarian and Slovak versions, respectively. Cronbach's alpha for the subscale "negative self-esteem" (component 1) appeared to be 0.66 in the Hungarian and 0.62 in the Slovak sample. Cronbach's alpha for the subscale "positive self-esteem" (component 2) was 0.65 in the Hungarian and 0.55 in the Slovak sample.

The mean inter-item correlations, which can be regarded as an indicator of homogeneity of the scales, were also computed (Table 3.3). The highest mean i-i correlation was found for GHQ-12 component 1 "depression/anxiety" (0.34) in both samples, and the lowest for the RSE total scale in the Slovak sample (0.16).

Table 3.3 Reliability figures; mean inter-item correlations of the GHQ-12 and RSE scales and subscales in the Hungarian and Slovak samples

	Hungary (n=431)			Slovakia (n=519)		
	Compo-nent 1	Compo-nent 2	Total scale	Compo-nent 1	Compo-nent 2	Total scale
GHQ-12						
Cronbach's α	.76	.62	.79	.75	.53	.73
i-i correlation	.34	.21	.23	.34	.16	.19
RSE						
Cronbach's α	.66	.65	.75	.62	.55	.65
i-i correlation	.28	.27	.23	.25	.20	.16

GHQ-12: Component 1 = depression/anxiety, Component 2 = social dysfunction
RSE: Component 1 = negative self-esteem, Component 2 = positive self-esteem
i-i correlation = mean inter-item correlation

The result of item analysis show that in GHQ-12 items 3 "play useful part" and 4 "making decisions" are the items least consistent with the rest of the scale (Table 3.4). When considering the RSE items 8 "lack of respect", 3 "have a good quality", 5 "not proud" and 10 "positive attitude" appear to be least consistent with the rest of the scale in Hungarian and Slovak sample alike (Table 3.5).

Table 3.4 Item analysis of the GHQ-12 in the Hungarian and Slovak samples

		Corrected Item-Total Correlation		Alpha if Item Deleted	
No. of item		Hungary	Slovakia	Hungary	Slovakia
1	Concentrate	.35	.32	.78	.73
3	Play useful part	.22	.28	.79	.73
4	Making decisions	.31	.12	.78	.75
7	Enjoy activities	.39	.28	.78	.73
8	Face up problems	.39	.29	.78	.73
12	Feeling happy	.49	.31	.77	.73
2	Lost sleep	.34	.41	.78	.72
5	Under strain	.55	.48	.76	.71
6	Overcome difficulties	.51	.49	.77	.71
9	Feeling unhappy	.56	.50	.76	.70
10	Lost self-confidence	.49	.49	.77	.71
11	Feeling worthless	.50	.43	.77	.72

Table 3.5 Item analysis of the RSE in the Hungarian and Slovak samples

		Corrected Item-Total Correlation		Alpha if Item Deleted	
No. of item	RSE	Hungary	Slovakia	Hungary	Slovakia
2	No good at all	.44	.30	.72	.62
5	Not proud	.41	.30	.72	.63
6	Feel useless	.43	.53	.72	.57
8	Lack of respect	.26	-.04	.74	.69
9	Feel a failure	.55	.47	.70	.58
1	Satisfied with self	.46	.37	.71	.61
3	Have a good quality	.23	.24	.74	.64
4	Equal to others	.42	.36	.72	.61
7	Feel valuable	.52	.36	.71	.62
10	Positive attitude	.33	.29	.73	.63

Discussion

The purpose of this study was to evaluate the reliability and factor structure of the Hungarian and Slovak versions of GHQ-12 and RSE.

Factor structure of scales

The results of our study are in line with previous findings, describing substantial factor variance between the centres evaluated. Factor analyses on both scales have yielded unidimensional, two- and three-factor solutions according to different settings, including translations into different languages (Goldberg & Williams, 1988; Blascovich & Tomaka, 1991; Werneke et al. 2000; French and Tait, 2004). As for our results, in the Hungarian version of the GHQ-12 two factors were identified, which can be labelled as "depression/anxiety" and "social dysfunction". Similarly, two factors were found in an Italian study among young males (Politi et al., 1994), in an Australian study (Martin, 1999), in 10 centres of a WHO study (Werneke et al., 2000) or in Iranian young people study (Montazeri et al., 2003, Gao et al., 2004). In the Slovak version of the GHQ-12, after rotation three components were shown, but the pattern was less clear than in the Hungarian sample. Items 1, 3, 4 and 8 (concentrate, play useful part, making decisions, face up problems) loaded on component 1 (= social dysfunction). Items 2, 5, 6, 9, 10 and 11 (lost sleep, under strain, overcome difficulties, feeling unhappy, lost self-confident, feeling worthless) always loaded together, which present component 2 (= depression/anxiety).

Items 7 and 12 (enjoy activities, feeling happy) loaded on component 3 (not labelled). Also the findings of French and Tait (2004) with Australian adults and Gao et al. (2004) are in line with this three-factor solution. In the above-mentioned WHO study the three-factor solution was identified in 5 centres: Athens, Ibadan, Rio de Janiero, Shanghai and Verona (Werneke et al. 2000). In the WHO study these three factors were reported to cover domains of anxiety and depression, social dysfunction and loss of confidence. The factor structure of the Slovak version of GHQ-12 differed from that of the above-mentioned studies reporting three-factor solutions, and thus a forced two-factor solution was carried out. This additional procedure contributed significantly to clarity regarding the factor structure of the Slovak version of GHQ-12, since it appeared to be identical with the factor structure of the Hungarian version of this instrument.

Similarly, the results of this study in both versions of RSE support the possibility of using the scale as a two-factor instrument. Items 2, 5, 6, 8 and 9 (no good at all, not proud, feel useless, lack of respect, feel a failure) in the Hungarian and also in the Slovak version of RSE loaded on component 2 (= negative self-esteem). Component 1 (= positive self-esteem) included item 1, 3, 4, 7 and 10 (satisfied with self, have a good quality, equal to others, feel valuable, positive attitude). These results are in accord with the findings of several previous studies (Kaplan & Pokorny, 1969; Blascovich & Tomaka, 1991). However, there are also studies questioning the bidimensional solution. According to Schmitt and Stuls (1985) the bidimensional factor structure is an artifact of carelessness in the subjects' responses. They assume that subjects may have carelessly agreed with the statements in the RSE (scores on the negatively worded items are reversed in the analysis so that the disagreement is eventually considered to indicate self-esteem, whereas agreement with positively worded items will be considered to reflect good self-esteem). Shanahi et al. (1990) attempted to minimise the effect of possibly careless responding by eliminating parts of data considered to be contaminated by this bias using a criterion; however, the omission of potentially careless responses had little effect on the factor structure. Also the results of item analysis in our study are in line with these outcomes since among items least consistent with the rest of the scale positively as well as negatively worded items can be found. In addition, Marsh (1996) carried out confirmatory factor analysis on a large sample (20,000+) of adolescents and his results provided support for a two-factor solution rather than the hypothesised unidimensional construct.

Reliability

The reliability figures for the total scales are acceptable, with Cronbach's alphas > 0.70. The only exception is the Slovak version of RSE, which is

somewhat lower (0.65). With regard to the subscales, Cronbach's alphas of subscales for both scales are acceptable (above 0.60). However, the reliability of component 1 in the Slovak versions of both scales is quite low (0.53 for "social dysfunction" GHQ-12 subscale and 0.55 for "positive self-esteem" RSE subscale).

The mean inter-item correlations provide further support for two-dimensional solutions of PCA. In general, the mean inter-item correlations for the total scales are lower than for subscales, indicating the presence of more dimensions within the scales. As already suggested by Cronbach's alpha figures, the internal consistency of subscales 1 in the Slovak versions of both scales are lower and therefore require further inspection.

Age appropriateness

The GHQ was designed as an adult measure, but a recent review identified 82 studies where it had been frequently used also with adolescents (Tait et al., 2002). With regard to RSE, it was originally designed for adolescents (Rosenberg, 1965). The results of this study show that both scales may be used with early adolescents, even if some caution is needed when attempting to explain unique factors associated with the reversed items. The results of this study in (particular lower Cronbach's alpha figures and lower mean inter-item correlations for subscales 1 in both scales) are in line with previous studies showing that children and adolescents are susceptible to negative item biases, for example they may lack the linguistic skills necessary to give appropriate responses to negative questions, either when they are negatively worded or when they express a negative self-concept (Marsh, 1996).

Conclusion

The study findings showed that the psychometric properties of the Hungarian and also the Slovak versions of the GHQ-12 and the RSE are acceptable, and these instruments may be used for measuring aspects of mental health in early adolescents. Nevertheless, given the problems associated with negatively-worded items in the scales, researchers need to be aware of the potential problems surrounding the negative item wording and make every effort to ensure that negatively-worded items are carefully constructed and easily interpreted by the population of interest.

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Chapter 4

Differences in self-esteem among adolescents across Central European countries and the association between psychological well-being and self-esteem in Slovak and Hungarian young adolescents

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Submitted

Abstract

The aim of this study is to explore differences in self-esteem among adolescents across European countries and to compare factors associated with self-esteem between Slovak and Hungarian adolescents. Two data-sets were used. The first set was derived from the 53 nations study by Schmitt and Allik (2005) and the second set comprised a Slovak (N=519, 50.9% boys, mean age 11.5, response rate 88.8%) and a Hungarian sample (N=431, 52.7% boys, mean age 11.5, response rate 92.5%). Psychological well-being was measured using the General Health Questionnaire-12 and self-esteem with the Rosenberg Self-esteem Scale. The data were analysed using t-tests, Cohen's effect size and hierarchical linear regression. Large differences were found between Slovakia and Serbia, Slovenia and Croatia in overall, positive and negative self-esteem among boys and girls, with exception of Croatian boys in positive self-esteem. Large differences were also found between Slovak and Austrian adolescents in negative self-esteem and between Slovak and Hungarian girls in positive self-esteem. The findings from linear regression indicate that cultural background and both factors of psychological well-being significantly associate with self-esteem. The present findings contribute to a better understanding of self-esteem in Central European countries and could stimulate future research.

Keywords: self-esteem, cross-cultural comparison, adolescence

Introduction

The Rosenberg Self-esteem Scale is a widely used instrument for measuring personal feelings of self-worth (Rosenberg, 1965). The simplicity of this scale provides easy and quick administration. At the same time this scale has been translated into almost all Indo-European languages and also into many languages from completely different linguistic families. This enables researchers to measure self-esteem within individual countries as well as in the framework of a cross-cultural comparison. The present paper is focused on the cultural similarities and differences in self-esteem which have been in the spotlight in numerous studies (Heine et al., 1999; Kobayashi & Brown, 2003; Schmitt & Allik, 2005; Akande, 2009; Brown et al., 2009). In line with findings from the mentioned studies, it is possible to emerge from the theoretical background that self-esteem is a universal phenomenon resulting from common human motivations as well as the social environment. In addition, self-esteem may vary across subjects with different socio-cultural backgrounds. The very nature of what it means to experience feelings of self-worth takes culturally specific forms. As Schmitt and Allik's study in 53 nations (2005) demonstrated, the Rosenberg Self-esteem Scale is generally replicable across diverse samples of human cultures, including many Asian and African nations. However, their study indicates important cultural differences in self-esteem. In comparison with Western countries (Americans, Canadians, and Western Europeans), East Asians score lower on self-reporting measures of self-esteem (Schmitt & Allik, 2005). Although a good deal of previous research has assessed cross-cultural differences in self-esteem (Schmitt & Allik, 2005; Heine & Hamamura, 2007; Brown et al., 2009), there is a lack of studies testing how self-esteem associates with other variables, such as gender and psychological well-being, across cultures. Several studies have demonstrated that self-esteem is related to individual attributes such as extroversion and indicators of psychological well-being (Robins et al., 2001; Veselska et al., 2009; Kling et al., 1999). It is essential to examine the possible outcomes as well as correlates and possible sources of self-esteem. Understanding correlates and sources of self-esteem is important for the enhancement and the short and long term outcomes of self-esteem.

The background of this study is a general interest in differences in self-esteem among adolescents across Central European and Eastern European countries. Schmitt and Allik found that Slovak adolescents have lower levels of self-esteem compared to other countries (Schmitt & Allik 2005). Therefore, we needed more evidence that Slovak adolescents systematically deviated from other European countries and re-analyzed the data presented in the Schmitt and Allik article (2005). Besides cultural background, the present study focuses on the association of gender

and psychological well-being with self-esteem, as former studies have consistently shown the importance of the role of both (Bolognini et al., 1996; Kling et al., 1999; Miyamoto et al., 2001; Ponsoda et al., 2008).

The following research questions were addressed:

1. Given the empirical outcomes of the international comparative study by Schmitt and Allik (2005) that Slovak and Czech adolescents have the lowest levels of self-esteem compared to subjects from other central European countries, can it be hypothesised that these differences are not due to sample fluctuation and are not trivial in size?
2. How large are gender-related differences in self-esteem between countries in terms of effect size and is the magnitude of these differences comparable?
3. Are gender, cultural background (Slovak vs. Hungarian), and psychological well-being associated with positive, negative and overall self-esteem?

Methods

Sample

This study comprises two data-sets that were used for analysis: (1) a comparison of positive, negative and overall self-esteem across nine central European countries based on data derived from the 53 nations used by Schmitt and Allik (2005) and (2) regression analyses with GHQ-12 factors which were based on two samples of Slovak and Hungarian adolescents. Further details on the sampling and assessment procedures utilised by Schmitt and Allik (2005) are provided elsewhere (Schmitt et al., 2004). The sampling procedure of Hungarian and Slovak adolescents was performed as follows. In Slovakia data were collected at 8 randomly selected elementary schools located in the city of Kosice (Eastern part of Slovakia; cca 240,000 inhabitants). The Slovak sample consisted of 519 pupils (50.9% boys, mean age 11.5 years). In Hungary data were collected at 10 elementary schools – 4 schools situated in the city of Miskolc (North-eastern part of Hungary; cca 180,000 inhabitants) and 6 schools in the city of Debrecen (North-eastern part of Hungary; cca 205,000 inhabitants). The Hungarian sample consisted of 431 pupils (52.7% boys, mean age 11.5 years). Individual schools were selected randomly. Respondents completed the questionnaires at school, in their classrooms under the guidance of the field workers and in the absence of teachers. The response rate was 88.8% in the Slovak sample and 92.5% in the Hungarian sample. Both samples initially did not differ in age as school classes were identical.

Measures

Sociodemographic variables included age, gender and native background. Age and gender were used as reported by patients in the questionnaire. Because all subjects were of the same age, this characteristic was not used in statistical analysis.

Self-esteem was assessed using the Rosenberg Self-esteem Scale (RSE) (Rosenberg, 1965). The scale was originally developed to measure adolescents' global feelings of self-worth or self-acceptance (Rosenberg, 1965). It consists of 10 items (5 positive and 5 negative). Each item has a four-point scale ranging from 1="strongly agree" to 4= "strongly disagree". The sum score for global self-esteem range from 10 to 40. A higher total score indicates higher global self-esteem. In line with previous studies (Kaplan & Pokorny, 1969; Blascovich & Tomaka, 1991; Sarkova et al. 2006; Halama, 2008) two factors of the RSE were used in the present study: "negative self-esteem" (5 items: no good at all, not proud, feel useless, lack of respect and feel a failure) and "positive self-esteem" (5 items: satisfied with self, have good qualities, equal to others, feel valuable and a positive attitude). Scores on these factors range from 5 to 20, with a higher score indicating higher positive and negative self-esteem. Both measures were translated using a forward-backward procedure and differences between the Slovak and Hungarian translation with the original English version were evaluated by an English, Slovak and Hungarian native speaker. In the Hungarian sample Cronbach's alpha was 0.65 for positive self-esteem, 0.66 for negative self-esteem and 0.75 for overall self-esteem. In the Slovak sample Cronbach's alpha was 0.55 for positive self-esteem, 0.62 for negative self-esteem and 0.65 for overall self-esteem.

Psychological well-being. Psychological well-being, measured using the shortened 12-item version of the General Health Questionnaire (GHQ-12) (Goldberg, 1988), focused on various aspects of respondents' psychological disposition, for example problems with sleep, strain, happiness or stress. The questions compare how the respondents' present state differs from their usual state. The GHQ-12 was scored on a four point Likert scale (0-1-2-3) with scores ranging from 0 to 36 (0=no complaints at all). A higher total score means worse global psychological well-being. According to previous studies (Politi et al., 1994; Werneke et al., 2000; Sarkova et al.2006), we applied factor analysis to the current study data and clearly separated two dimensions of the GHQ-12: "social dysfunction" (6 items: concentrate, play useful part, making decisions, enjoy activities, face up problems, feeling happy) and "depression/anxiety" (6 items: lost sleep, under strain, overcome difficulties, feeling unhappy, lost self-confident, feeling worthless). Scores on both dimensions range from 0 to 18; a higher score indicates worse psychological well-being. In the Hungarian sample Cronbach's alpha was 0.76 for depression/anxiety, 0.62 for social

dysfunction and 0.79 for overall psychological well-being. In the Slovak sample Cronbach's alpha was 0.75 for depression/anxiety, 0.53 for social dysfunction and 0.73 for overall psychological well-being.

Statistical analysis

Continuous variables were analyzed with t-tests to compare positive, negative and overall self-esteem stratified by gender across countries. Only statistically significant differences between countries were expressed in Cohen's effect size 'd' (Cohen, 1988) to estimate the magnitude of differences between countries, as it makes no sense to estimate the size of these differences when they are due to sample fluctuation. In this study, effect sizes were calculated according to Cohen by dividing the mean difference by the pooled standard deviation. Using Cohen's thresholds an effect size 'd' < 0.20 indicates a trivial difference, an ES of $0.20 \leq .50$ a small one, an ES of $0.50 \leq .80$ a moderate one and an ES > .80 a large difference. In this study $d \geq .20$ were considered as a relevant difference.

In order to make comparisons between countries, the 95% confidence intervals for mean differences and for effect sizes were calculated. Next, the impact of gender, native country, depression/anxiety and social dysfunction was assessed using hierarchical regression analyses with each of the RSE scale factors as dependent variables. Based on statistically significant correlations of the most important background variables (gender, educational level of parents and native country) with the RSE factors as dependent variables, gender and native country were included as the covariates for GHQ factors. Native background and gender variables were then entered in the regression model at the first step and the GHQ factors 'depression/anxiety' and 'social dysfunction' (all in one) at the second step to determine whether they explained a significant percentage of the variance in positive, negative and overall self-esteem.

Results

Comparison of overall, positive and negative self-esteem between European countries

Average scores of positive, negative and as well as overall self-esteem of 23 West and Central European countries are presented in descending order (Table 4.1) (Schmitt & Allik, 2005). After sorting mean scores of self-esteem in descending order, some Central European countries (marked using †) appear in the upper levels of the table (Serbia, Estonia, Croatia, Austria, Slovenia, and Germany) followed by other Central European countries as well as West European countries, whereas Czech and Slovak adolescents

have the lowest mean levels of self-esteem compared to other countries. Moreover, after differentiating between positive and negative self-esteem, the ranking order did not show any meaningful change. Thus, Serbia and Estonia were in the top ranks and Czech and Slovak adolescents in the lowest ranks for both domains of positive and negative RSE.

Table 4.1 Self-esteem across 22 European Countries in descending order, derived from Schmitt and Allik (2005)

Country	total RSE	positive RSE	negative RSE
Serbia†	33.59	17.4	16.2
Estonia†	32.63	16.8	15.8
Croatia†	31.94	16.6	15.4
Austria†	31.78	16.0	15.8
Finland	31.76	16.5	15.3
Slovenia†	31.74	16.8	14.9
Germany	31.73	15.9	15.9
The Netherlands	31.60	16.1	15.5
Spain	31.52	16.6	15.0
Portugal	31.30	16.2	15.1
Greece	31.29	16.4	14.9
Italy	30.56	16.2	14.4
England	30.55	15.8	14.7
Poland†	30.34	16.0	14.4
Latvia†	29.88	15.6	14.2
France	29.86	15.5	14.3
Belgium	29.66	15.5	14.1
Lithuania†	29.60	16.0	13.6
Romania†	29.54	16.1	13.5
Hungary†	29.46	16.2	13.0
Switzerland	29.16	14.6	14.5
Slovakia†	28.94	15.7	13.3
Czech Republic†	28.47	15.3	13.1

Notes: † means Central European Countries, Baltic Countries or Balkan Countries

Comparison of statistically significant differences on self-esteem scores of overall, positive and negative self-esteem between Slovak adolescents and those from other Central European countries

Slovak and Czech adolescents differed only on overall self-esteem which was, however, a trivial finding. Differences that were classified as large were found between: (i) Slovak and Serbian, (ii) Slovak and Slovenian adolescents on positive, negative and overall self-esteem for boys as well as for girls (Table 4.2). Large differences were also found between Slovak and Croatian adolescents except for male subjects on *positive* self-esteem (small difference). Large differences in *negative* self-esteem were found between male and female Slovak and Austrian adolescents, while the differences in *positive* self-esteem were small and moderate among males and females, respectively. Differences in negative self-esteem between Slovak and Polish males and females were moderate in size, while in positive self-esteem these groups' differences were classified as small. Differences in positive and negative self-esteem between Slovak and Romanian subjects were small, except differences in positive self-esteem of female adolescents, which were moderate in size. The difference in positive self-esteem between Slovak and Hungarian girls was classified as large while the differences between Slovak and Hungarian boys were moderately in size. Both Slovak and Hungarian boys and girls did not differ in negative self-esteem.

Table 4.2 Differences in self-esteem across central European countries stratified by gender

Self-Esteem	Slovakia (SK)	SK vs. Czech Republic	95% CI	ES	95% CI effect size	SK vs. Poland	95% CI	ES	95% CI effect size
Positive SE									
men (N)	230	105				303			
mean (SD)	15.31 (2.02)	15.39 (2.48)	(-.62-.46)	ns		16.17 (2.39)	(-1.24– .49)	.38	(.21-.56)
women (N)	225	129				516			
mean (SD)	14.82 (2.26)	15.28 (2.13)	(-.93-.02)	ns		15.77 (2.31)	(-1.31– .59)	.41	(.26-.57)
Negative SE									
men (N)	230	105				302			
mean (SD)	12.77 (2.72)	13.36 (2.68)	(-1.21-.03)	ns		14.55 (2.86)	(-2.26–1.31)	.64	(.46-.81)
women (N)	228	129				516			
mean (SD)	12.65 (2.52)	12.93 (2.42)	(-.81-.25)	ns		14.17 (2.66)	(-1.92–1.12)	.58	(.42-.74)
Total RSE	452	234				812			
	27.79 (3.84)	28.47 (4.14)	(-1.32–.04)	.17	(.12-.33)	30.34 (4.47)	(2.06-3.04)	.60	(.48-.72)

Notes: ES of .20 ≤ .50 a small, ES of .50 ≤ .80 a moderate and ES > .80 a large difference
vs. = versus

Self-Esteem	Slovakia (SK)	SK vs. Hungary	95% CI	ES	95% CI effect size	SK vs. Austria	95% CI	ES	95% CI effect size
Positive SE									
men (N)	230	223				207			
mean (SD)	15.31 (2.02)	16.95 (2.818)	(- 2.09–1.19)	.67	(.48-.86)	15.99 (2.34)	(- 1.09– 0.27)	.31	(.12-.50)
women (N)	225	204				260			
mean (SD)	14.82 (2.26)	16.92 (2.81)	(-2.59–1.61)	.83	(.63-1.02)	16.05 (2.64)	(-1.67–.80)	.50	(.32-.68)
Negative SE									
men (N)	230	225				207			
mean (SD)	12.77 (2.72)	12.39 (3.39)	(-.18-.94)	ns		15.73 (2.84)	(-3.48–2.43)	1.07	(.86-1.26)
women (N)	228	202				108			
mean (SD)	12.65 (2.52)	12.67 (3.613)	(-.61-.58)	ns		16.79 (2.36)	(-4.57–3.70)	1.70	(1.49-1.90)
Total RSE	452	423				466			
	27.79 (3.84)	29.46 (5.381)	(-2.29- -1.05)	.36	(.23-.49)	31.78 (4.68)	(-4.55–3.43)	.93	(.79-1.07)

Notes: ES of .20 ≤ .50 a small, ES of .50 ≤ .80 a moderate and ES > .80 a large difference
vs. = versus

Self-Esteem	Slovakia (SK)	SK vs. Serbia	95% CI	ES	95% CI effect size	SK vs. Slovenia	95% CI	ES	95% CI effect size
Positive SE									
men (N)	230	100				73			
mean (SD)	15.31 (2.02)	17.12 (2.37)	(- 2.34– 1.28)	.85	(.60-1.09)	16.91 (2.43)	(- 2.21– .98)	.80	(.51-1.08)
women (N)	225	100				108			
mean (SD)	14.82 (2.26)	17.79 (2.06)	(- 3.47– 2.47)	1.35	(1.09-1.60)	16.79 (2.36)	(-2.50– .43)	.86	(.62-1.10)
Negative SE									
men (N)	230	100				73			
mean (SD)	12.77 (2.72)	16.28 (3.35)	(- 4.25– 2.77)	1.20	(.96-1.45)	15.29 (3.09)	(-3.31– 1.73)	.90	(.62-1.17)
women (N)	228	100				108			
mean (SD)	12.65 (2.52)	16.10 (3.39)	(- 4.19–-2.71)	1.23	(.97-1.48)	14.63 (2.74)	(- 2.59- -1.37)	.80	(.53-1.00)
Total RSE	452	200				180			
	27.79 (3.84)	33.59 (4.99)	(-6.50–5.10)	1.37	(1.19-1.55)	31.74 (4.15)	(- 4.63– 3.27)	1.00	(.82-1.19)

Notes: ES of .20 ≤ .50 a small, ES of .50 ≤ .80 a moderate and ES > .80 a large difference

vs. = versus

Self-Esteem	Slovakia (SK)	SK vs. Romania	95% CI	ES	95% CI effect size	SK vs. Croatia	95% CI	ES	95% CI effect size
Positive SE									
men (N)	230	123				113			
mean (SD)	15.31 (2.02)	16.22 (2.22)	(- 1.38- - .44)	.44	(.21-.66)	16.27 (2.02)	(- 1.41–.51)	.48	(.25-.70)
women (N)	225	128				109			
mean (SD)	14.82 (2.26)	15.99 (1.97)	(-1.62- - .72)	.54	(.32-.76)	16.98 (1.95)	(- 2.63–1.69)	1.00	(.75-1.24)
Negative SE									
men (N)	230	123				113			
mean (SD)	12.77 (2.72)	13.83 (2.46)	(-1.62– .50)	.40	(.18-.62)	14.91 (2.39)	(- 2.70– 1.58)	.82	(.58-1.05)
women (N)	228	128				109			
mean (SD)	12.65 (2.52)	13.26 (2.48)	(-1.14– .06)	.25	(.12-.46)	15.87 (2.68)	(- 3.82– 2.62)	1.25	(1.00-1.50)
Total RSE	452	251				222			
	27.79 (3.84)	29.54 (3.99)	(-2.36–1.14)	.45	(.29-.60)	31.94 (4.12)	(- 4.80– 3.50)	1.05	(.88-1.22)

Notes: ES of .20 ≤ .50 a small, ES of .50 ≤ .80 a moderate and ES > .80 a large difference
vs. = versus

A Slovak and Hungarian comparison: gender, native cultural background and depression/anxiety and social dysfunction factors as predictors of self-esteem

Table 4.3 presents the results of the regression analysis designed to explain the relative role of each background characteristic and psychological health in the association with the extent of self-esteem evaluated by the three scales of self-esteem. Anxiety-depression and social dysfunction contributed significantly to a unique segment of the variance for all domains of self-esteem, social dysfunction in particular. The expected direction of standardised β weights is negative, meaning that the lower score of social dysfunction and lower levels of perceived depression/anxiety are associated with higher levels of positive, negative and overall self-esteem.

All standardised β weights were in the expected direction and showed that 'Hungarian descent' was a significant predictor for positive and overall self-esteem, meaning that Hungarian adolescents reported higher positive self-esteem compared to their Slovak counterparts, while negative self-esteem was not associated with native background. Limitation in social functioning was an important predictor in all domains of self-esteem, meaning that adolescents who were less limited in social functioning reported higher self-esteem. The depression/anxiety factor was a significant predictor in the self-esteem domains. Gender and native background explained 11% of the variance in positive self-esteem while in negative and overall self-esteem the percentage explained by these background variables was 5% and 3%, respectively.

Table 4.3 Slovak and Hungarian comparison: hierarchical multiple regression analysis with gender, native background and psychological well-being as determinants of positive, negative and overall self-esteem

Rosenberg Self-Esteem	Total Self-Esteem β	Positive Self-Esteem β	Negative Self-Esteem β
Socio-demographic characteristics			
Country	**.21*** **	**.38*** **	*-.19*
Gender	*-.01*	*-.04*	*.03*
General Health Questionnaire			
Depression/anxiety	**-.19*** **	**-.22*** **	**-.10** **
Social dysfunction	**-.41*** **	**-.30*** **	**-.36*** **
Adjusted R^2	.29	.31	.29
R2 change	***.26***	***.20***	***.24***
F	86.57***	97.99***	42.28***
F change	156.06***	121.13***	83.52***

Notes: **p<.01;***p<.001. In bold: statistically significant β values and R ¸ change values, Italic: not significant

Discussion

The study presented an overview of differences in global, positive and negative self-esteem in 22 European countries, then explored whether differences between Central European countries in global, positive and negative self-esteem were not due to sample fluctuation and was not trivial in size. Furthermore, the study examined how large gender-related differences between mentioned countries are in terms of effect size and whether the magnitudes of these differences were comparable. As was hypothesised, differences between Slovakia and other Central European countries were found, and these differences were not trivial in size. Large differences were found between Slovakia and Serbia, Slovenia and Croatia in overall, positive and negative self-esteem among boys and girls, with exception of Croatian boys in positive self-esteem. Large differences were found also between Slovak and Austrian adolescents in negative self-esteem and between Slovak and Hungarian girls in positive self-esteem.

Finally, this study examined whether gender, cultural background (Slovak vs. Hungarian) and psychological well-being associated with positive, negative and overall self-esteem. The findings from linear regression indicate that cultural background and both factors of psychological well-being significantly associate with self-esteem. Though large differences between Slovak and Hungarian girls in positive self-esteem were found, the linear regression model does not show a significant association between gender and self-esteem.

The top as well as the bottom of the table of self-esteem mean scores from the 22 European countries were occupied by Central European countries. It suggests that within countries which belong to one geographical and political area in Central Europe could be found a different cultural background influencing the way people in this country evaluate themselves. Levels of self-esteem vary across cultures, as has been demonstrated in several studies (Schmitt & Allik, 2005; Brown et al., 2009; Farruggia et al., 2009). The explanation could be found – albeit this remains speculative – in the way a person is expected to adjust one's self to meet the expectations of significant others and to work for the good of the dyad, the group, the organization or the nation and to fit into existing cultural background (Kwang Ng et al., 2003).

The linear model has also revealed that the second variable significantly associated with self-esteem and its factors is psychological well-being, specifically the depression/anxiety and social dysfunction factors. Numerous studies have demonstrated that self-esteem is linked to depression (Owens, 1994; Lucas et al., 1996; Veselska, et al., 2009). In the frame of the present regression model, gender was one variable which was not significantly associated with self-esteem. This finding is in line

with the meta-analysis of Kling et al. (1999), which revealed that gender differences in self-esteem have a trivial effect size. Kling et al. (1999) offered the following explanation. It was noted earlier that gender roles may contribute to low self-esteem in some girls but that gender roles may also contribute to self-esteem problems for boys. Contemporary theorizing on the male role emphasises a perspective in which gender roles are seen as sources of psychological stress for boys and men (Pleck, 1981). It is also plausible that girls and women engage in several processes that protect their self-esteem (Kling et al., 1999).

Strengths and limitations

The present study has several strengths. Data from 22 European countries were used and provide an interesting intercultural comparison. Additional data from Slovak and Hungarian samples provide the opportunity to examine associations between self-esteem and others variables in more depth. A limitation of this study is that self-liking and self-competence factors which could be computed from Rosenberg Self-esteem Scale (Tafarodi & Swann, 1995) were not used. Schmitt and Allik's study (2005) has shown that the use of these self-esteem factors reveal intercultural differences between collectivistic and individualistic cultures.

Implication and conclusion

Our findings revealed the cross-cultural importance of self-esteem through the evidence of differences in overall, positive and negative self-esteem across European countries. Regarding the theoretical background, these findings extend the existing knowledge about self-esteem. At the same time, our study found that psychological well-being as a correlate of self-esteem is similar among Slovak and Hungarian adolescents. In practice our findings might contribute to the design and implementation of effective health promotion programs aimed at enhancing self-esteem in the target group.

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Chapter 5

Intra-individual change over time in psychological well-being and self-esteem among early and middle adolescents in Slovakia

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Submitted

Abstract

The main aim of this longitudinal study was to explore intra-individual change over time in psychological well-being and self-esteem from early to middle adolescence and to investigate the roles played by gender and parental education. The sample consisted of 519 Slovak adolescents (mean age: 11.48 (SD ± 0.58) at baseline and 14.88 (SD ± 0.45) at follow-up). Two dimensions (depression/anxiety, social dysfunction) of the General Health Questionnaire-12 (GHQ) and two components (negative and positive self-esteem) of the Rosenberg Self-Esteem Scale (RSES) were measured. The difference between proportions test was used to estimate differences in the prevalence rates of improved, deteriorated or stable in GHQ and RSES scores across boys and girls, and multiple logistic regression analysis was performed to analyze associations between changes over time in GHQ and RSES across gender and parental education. Both genders deteriorated statistically in depression/anxiety with a substantially higher change over time among girls compared to boys (ES = 0.63 vs 0.25, respectively) and improved statistically in overall self-esteem and in negative self-esteem with a small ES. Statistically, only girls deteriorated in overall psychological well-being. Both gender (girls) and educational level (lower) of the mother were the strongest factors associated with depression/anxiety at the age of 15, adjusted for the baseline (depression/anxiety) scores. Our findings challenge us to go deeper into relations of other potential socioeconomic factors associated with psychological status and to study pathways between psychological well-being and self-esteem from a domain-specific perspective in early to middle adolescence.

Keywords: adolescents, gender, change over time, parental education, psychological well-being, self-esteem

Introduction

Adolescence is a period that lasts approximately 10 years, usually described as occurring between the ages of 11 and 22 years. During this developmental stage, psychological well-being and self-esteem seems as important components of a person's psychological status. Psychological status not only affects mental functioning, but also physical health-related functioning and social functioning (Michael & Ben-Zur, 2007; Patton & Viner, 2007; Ybrant, 2008; Veselska et al., 2009). Moreover, follow-up studies have found worse psychological well-being and low self-esteem in adolescents as significant predictors of poor mental health in adulthood (Pelkonen et al., 2003; Heinonen et al., 2005; Pelkonen et al., 2008).

The roles of gender and parental education in psychological status have also been observed in adolescents. Most studies have shown that adolescent girls are at an increased risk for developing lower self-esteem (Bolognini et al., 1996), a higher level of sadness (Sweeting & West, 2003) and poorer psychosocial health in terms of self-esteem, depression, self-destruction and a lower sense of coherence (Räty et al., 2005). Boys are more likely to be at risk for psychotic disorders (Patton & Viner, 2007). Adolescents from families with lower parental education were less optimistic (Finkelstein et al., 2007) and reported poorer self-rated health (Goodman et al., 2007).

Knowledge about longitudinal change in psychological well-being and/or self-esteem during adolescence remains limited, since the majority of previous studies were cross-sectional (Allison et al., 2005; Biro et al., 2006; Emami et al., 2007). Results from longitudinal observational studies, to our knowledge, have been restricted to behaviour in 'clinical' settings (Tait et al., 2005). Furthermore, studies targeted on 'healthy' adolescents have evaluated changes in psychological status from childhood to early adolescence, from late adolescence to young adulthood, or have focused on a separate adolescence sub-stage or have not sampled the appropriate age range (Allto-Setala et al., 1996; Sweeting & West, 2003).

The main aim of this longitudinal school-based study is to explore change over time in psychological status from early (age of 11.5 years) to middle adolescence (age of 15 years) and to investigate the role of gender and parental education. Therefore, the following research questions were addressed:

1. Is there a difference between boys and girls in the magnitude and direction (improved, stable or deteriorated) of change in the domains of psychological well-being and self-esteem between the ages of 11.5 and 15 years old?
2. Are gender and parental education predictors of psychological well-being and self-esteem at the age of 15?

Methods

Study design and sample

The study sample consisted of 519 adolescents attending 8 elementary schools in Kosice (about 260 000 inhabitants, Slovakia). All schools were selected randomly. Passive parental consent was obtained for all participants. Data collection was carried out in September 1999 (baseline) and in April-June 2003 (follow-up). Response rates of 88.8% (baseline) and 63.4% (follow-up) were achieved, with non-response due mainly to the absence of students from school on the day of data collection (baseline) but also for other reasons, e.g. moving away with parents or changing school (follow-up). Respondents completed questionnaires in school classrooms in the absence of their teachers.

Measures

Demographic variables

Information on age was calculated using the birth date obtained by respondents. At baseline and at follow-up, the mean age of respondents was 11.48 (SD ± 0.58) and 14.88 (SD ± 0.45) years, respectively.

To obtain information on *parental education* respondents were asked to answer two questions: 'What is the highest completed education of your father (mother)?' The four categories used in the questionnaire were re-coded into 3 categories as follows: 'post-secondary vocational' (uncompleted/completed primary school, post-secondary vocational programmes), 'accredited post-secondary vocational' and 'university and postgraduate'.

Psychological well-being

The 12-item version of the General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988) was used as a measure of psychological well-being. In this study the GHQ-12 was used with two dimensions ('depression/anxiety' and 'social dysfunction') both consisting of 6 items according to Sarkova et al. (2006). Respondents indicated on a four-point scale how they have been feeling over the last four weeks. Likert-type scoring (0-1-2-3) was used, with scores ranging from 0 to 18 for both dimensions. Higher scores indicate worse psychological well-being, more depression/anxiety and/or more social dysfunction.

Self-esteem

The Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) was used as a measure of self-esteem. In this study the RSE was used with two components ('negative self-esteem' and 'positive self-esteem') both consisting of 5 items according to Sarkova et al. and Halama (Halama, 2008). The items were scored using a four-point scale (1='strongly agree', 2='agree', 3='disagree', 4='strongly disagree'). Sum scores range from 5 to 20 for both components, with higher scores indicating higher self-esteem.

Internal consistency of the GHQ-12 and RSE

Since Cronbach's alpha is dependent on the number of items in the scale and on the mean inter-item correlation (MIIC), one can achieve a highly reliable estimate either by having many items or by having highly inter-correlated items (or a combination of the two) (Cortina, 1993; Clark & Watson, 1995). The degree of inter-item correlation is a straightforward indicator of internal consistency, while the number of items is entirely irrelevant. According to the guidelines by Briggs and Cheek, the MIIC should fall within an optimal range between 0.20 and 0.50, but should not be less than 0.15 (Clark & Watson, 1995; Taylor et al., 2003). Therefore, taking the upper value of the range, an MIIC ≥ 0.25 seems reasonable.

The internal consistency of the scales in the current study was sufficient to good. Cronbach's alpha ranged from 0.70 to 0.79 and mean inter-item correlation (MIIC) ranged from 0.28 to 0.39. The alphas for the 'social dysfunction' and 'negative self-esteem' sub-scales were 0.70, which are sufficient, given the number of items and corresponding MIIC (0.34 and 0.29). Cronbach's alphas for the 'depression/anxiety' and 'positive self-esteem' sub-scales were ≥ .70, with MIIC of .39 and .32, respectively, thus indicating good reliability. The GHQ-12 and RSE total scales yielded good Cronbach's alphas due to the number of items.

Statistics

The chi-square test (Fisher's exact test when appropriate) was used to compare boys and girls on baseline characteristics. Continuous variables were distributed normally in the current study (Shapiro Wilk, $p > 0.05$) and were therefore compared with the Student t-test; they are presented as means ± SD.A post hoc Bonferroni correction was applied to all tests to adjust for multiple comparisons with $p < 0.004$ ($p < 0.05/12$ comparisons) indicating statistical significance. The difference between proportions test (Newcombe & Altman, 2005) was used for estimating differences in prevalence rates of improved, deteriorated or stable in psychological status across boys and girls and are presented as numbers and percentages.

Multiple logistic regression analysis was performed to analyze associations between changes detected between 11.5 and 15 years in the domains of psychological well-being (improved vs. deteriorated-stable) and gender (boys), parents' education (highest) and overall self-esteem at the age of 11.5 years (Model 1). Furthermore, associations between changes in overall self-esteem (improved vs. deteriorated-stable) and gender (boys), parents' education (highest) and the domains of psychological well-being at the age of 11.5 years were investigated (Model 2). In order to avoid contamination bias, domains of negative and of positive self-esteem were not used simultaneously in predicting improvement-deterioration in domains of psychological well-being.

All statistical analyses were performed using SPSS version 15.0 software (SPSS, 1997).

Effect sizes

We calculated changes in psychological well-being and self-esteem by subtracting individual scores assessed at the age of 11.5 from the scores assessed at the age of 15 only when the change over time was significant. A change in scores showing a minus sign indicated improvement in depression/anxiety and social dysfunction and, in contrast, deterioration in negative and positive self-esteem.

For each outcome measure, we calculated the magnitude of change between the age of 11.5 and 15 years of age using the method of the standardised response mean (SRM), which was calculated as the individual change in score divided by the SD of change in the cohort boys and of girls, respectively (Wyrwich & Wolinsky, 2000; Crosby et al., 2003). Effect sizes were calculated only after rejecting the null-hypothesis that a difference occurred due to random variation. To avoid overestimation of the effect using Cohen's thresholds for effect size interpretation, intra-individual change assessed with an SRM should be adjusted by SRM * $\sqrt{2}$ * $\sqrt{(1-r)}$, where r is the correlation coefficient between baseline and follow-up (Middel & van Sonderen, 2002). Cohen's thresholds for effect size (ES) were used for classifying subjects as improved, deteriorated or stable over time: an ES between -.20 < .20 indicates a 'trivial' difference; an ES between ≥ .20 to < .50 a 'small' improvement; an ES between ≥ -.20 to < -.50 a small deterioration; an ES of ≥ .50 to < .80 a moderate improvement; and an ES ≥ .80 a substantial improvement (with similar extents of deterioration for negative ES values) (Cohen, 1988).

Therefore, subjects were classified as 'improved' in the domains of the GHQ-12 if their change score indicated a decline and were classified as 'deteriorated' if their change score increased. The negative and positive ES of changes in self-esteem were labelled in the opposite direction.

Results

Selection bias

There were no initial differences at the age of 11.5 years between the participants and study drop outs by gender (51.1% vs. 48.0%; 95% CI: -5.9% to 12.0%) and by lower educational levels of their parents. However, subjects whose mother or father had a university education were underrepresented in the follow-up compared to the drop-outs (education of mother: 33.6 % vs. 18.0%; 95% CI: 5.4% to 25.9%) and (education of father: 44.3% vs. 21.4%; 95% CI: 2.0% to 34.0%). Furthermore, there were no significant differences between drop-outs and participants in the domains of psychological well-being and in the domains of self-esteem ($p > 0.05$).

Gender differences at 11.5 years

Table 5.1 shows the sociodemographic characteristics (age, parental education), means and standard deviations of the GHQ-12 and RSES with its domains stratified by gender. At baseline, boys showed a higher level of positive self-esteem but the size of this difference was small (Effect Size = 0.21).

Table 5.1 Sociodemographic characteristics and psychological status at the baseline, by gender

	Boys	Girls	P value
	N=264	N=255	
Age (years)	11.49 ± 0.61	11.46 ± 0.57	.52[1]
Psychological status at the age of 11.5	N=228	N=224	
Psychological well-being	8.48 ± 4.38	8.91 ± 5.03	.33[1]
Depression/anxiety	3.39 ± 3.27	3.87 ± 3.55	.13
Social dysfunction	5.15 ± 2.15	5.04 ± 2.36	.62
Self-esteem	27.81 ± 3.78	27.20 ± 4.19	.10
Negative self-esteem	12.77 ± 2.72	12.65 ± 2.52	.62
Positive self-esteem	15.02 ± 2.17	14.54 ± 2.54	.03[1] (ES^2=0.21)
Educational level of the mother	N=158	N=158	
Post-secondary vocational	23 (14.6)	29 (18.4)	.63[3]
Accredited post-secondary vocational	96 (60.8)	94 (59.5)	
University and postgraduate	39 (24.7)	35 (22.2)	
Educational level of the father	N=153	N=154	
Post-secondary vocational	30 (19.6)	37 (24,0)	.35[3]
Accredited post-secondary vocational	81 (52.9)	69 (44.8)	
University and postgraduate	42 (27.5)	48 (31.2)	

[1] Student's T-test; [2] Effect size for independent groups; [3] Chi-square test

Changes over time in psychological status among boys and girls and individual effects sizes

Table 5.2 shows change over time in psychological status from 11.5 to 15 years for participants who completed both assessments. The table also shows pre- to post- effect sizes, representing the magnitude of change over time in psychological well-being and self-esteem.

Both gender significantly and relevantly deteriorated on the depression/anxiety dimension of the GHQ-12. However, the amount of change over time was substantially greater among girls compared to the change between 11.5 and 15 years among boys (ES = 0.63 and 0.25 respectively). Only girls significantly and relevantly deteriorated during these three and half years in overall psychological well-being (ES = 0.48). Both gender groups significantly and relevantly improved in overall self-esteem, with small effect sizes ranging from 0.30 among boys and 0.22 among girls, and in the negative component of the RSE, accompanied with small effect sizes ranging from 0.34 among boys and 0.22 among girls.

Boys and girls did not change in the GHQ-12 dimension of social dysfunction and in the positive component of the RSE, and only boys did not change in overall psychological well-being in the period between 11.5 and 15 years.

Table 5.2 Changes over time in psychological well-being and self-esteem between the age of 11.5 and 15 years, stratified by gender

	11.5 years		15 years		P value	Effect size	95% CI
	mean	(SD)	mean	(SD)		(ES)	for ES
Boys	n=140						
Psychological well-being	8.25	(4.14)	9.14	(4.67)	ns		
Depression/anxiety	3.14	(3.01)	4.56	(4.02)	.0001[1]	0.25	0.01 0.46
Social dysfunction	5.16	(1.95)	5.23	(2.16)	ns		
Self-esteem	28.14	(3.93)	32.32	(4.02)	.0001[1]	0.30	0.06 0.54
Negative self-esteem	13.17	(2.67)	14.08	(2.70)	.0001[1]	0.34	0.10 0.57
Positive self-esteem	14.88	(2.14)	15.21	(2.37)	ns		
Girls	n=150						
Psychological well-being	8.22	(4.55)	10.60	(5.40)	.0001[1]	0.48	0.24 0.71
Depression/anxiety	3.53	(3.28)	5.82	(3.93)	.0001[1]	0.63	0.40 0.86
Social dysfunction	4.73	(2.19)	4.80	(2.35)	ns		
Self-esteem	27.73	(4.01)	31.65	(4.34)	.0002[1]	0.22	0.04 0.45
Negative self-esteem	12.89	(2.60)	15.45	(2.76)	.0003[1]	0.22	0.02 0.44
Positive self-esteem	14.83	(2.26)	15.22	(2.32)	ns		

[1] Student's T-test for paired observations

Although the mean scores on depression/anxiety, overall self-esteem and negative self-esteem showed significant and relevant differences over time for both boys and girls, the question was raised whether the proportions of those who improved, deteriorated or remained stable in these variables differed across gender.

The proportion of girls who deteriorated in the depression/anxiety domain of the GHQ-12 between the age of 11.5 and 15 was significantly larger compared to the proportion of boys who deteriorated (66% vs. 51%, respectively; 95% CI: -25.9% to -3.4%; p = .04). Furthermore, the proportion of boys who improved in depression/anxiety was significantly larger compared with the proportion of girls who improved (35% vs. 23%, respectively; 95% CI: 1.3% to 22%; p = .04). The proportion of boys and girls who remained stable in their perceived overall self-esteem significantly differed (16% vs. 7%, respectively; 95% CI: 1.3% to 16.2%; p = .04). There were no significant differences in the proportions of improved, stable or deteriorated boys and girls with regard to the negative self-esteem domain of the RSE (Table 5.3).

Table 5.3 Differences between proportions of boys and girls, who improved, deteriorated or remained stable in psychological well-being and self-esteem

Direction of change between 11.5 – 15	Boys		Girls		Total		P value	95% CI	
	n	(%)	n	(%)	n	(%)			
Depression/anxiety									
improved	48	(34.5)	34	(22.8)	82	(28.5)	.04[1]	1.3	22.1[2]
stable	20	(14.4)	17	(11.4)	37	(12.8)		3.4	26.0
deteriorated	71	(51.1)	98	(65.8)	169	(58.7)			
Self-esteem									
improved	77	(56.6)	83	(56.1)	160	(56.3)	.04[1]		
stable	22	(16.2)	11	(7.4)	33	(11.6)		1.25	16.2
deteriorated	37	(27.2)	54	(36.5)	91	(32.0)			
Negative self-esteem									
improved	81	(57.9)	78	(52.0)	159	(54.8)	ns.		
stable	20	(14.3)	18	(12.0)	38	(13.1)			
deteriorated	39	(27.9)	54	(36.0)	93	(32.1)			

[1] Chi-square test; [2] difference of proportions test

Factors associated with improvement and deterioration in psychological status

Table 5.4 presents the results of multivariable logistic regression analyses. The 'deterioration-stable' subgroup was used as a reference group. The table shows odds Ratios for improved-deteriorated psychological well-being and self esteem at the age of 15 years according to gender, parents' education and baseline outcomes at the age of 11.5 years.

Model 1: Girls are more likely to deteriorate in overall psychological well-being, and this association was mainly due to the depression/anxiety domain [OR = 1.72; p= 0.03; 95% CI: 1.32 to 2.80] and [OR = 2.12; p= .004; 95% CI: 2.02 to 2.80], respectively. A low educational level of the mother and low overall self-esteem at the age of 11.5 years of age were associated with a deterioration in depression/anxiety [OR = .46; p= .04; 95% CI: .21 to 1.01] and [OR = 1.89; p= .01; 95% CI: 1.16 to 1.92], respectively. No factors were found for a change in social dysfunction.

Model 2: A high level of depression/anxiety at the age of 11.5 years predicted a decreased level of overall self-esteem and negative self-esteem at the age of 15 [OR = 1.63; p= .005; 95% CI: 1.59 to 1.84] and [OR = 1.23; p= .03; 95% CI: 1.19 to 1.34], respectively. No factors were found for a change in positive self-esteem.

Table 5.4 Multivariable logistic regression analyses. Odds Ratios for improved-deteriorated psychological well-being and self esteem at the age of 15 according to gender and parents' education

Variable (in order of entry)	Regression coefficient B	Standard Error	Wald	p-value	OR	95 % CI	
						lower	upper
Model 1: psychological well-being							
Improvement-deterioration in Psychological well-being							
Male gender[1]	0.53	0.25	4.35	**0.03**	1.72	1.32	2.80
Highest education father	0.11	0.34	0.10	0.75	1.11	0.57	2.15
Highest education mother	-0.09	0.51	0.03	0.86	0.91	0.34	2.46
Self-esteem at the age of 11.5 yrs.	0.06	0.03	2.71	0.10	1.06	0.99	1.13
Improvement-deterioration in Depression/anxiety domain							
Male gender	0.75	0.26	8.46	**0.004**	2.12	2.02	2.80
Highest education father	-0.04	0.44	0.01	0.93	0.96	0.41	2.29
Highest education mother	-0.77	0.40	3.79	**0.04**	0.46	0.21	1.01
Self-esteem at the age of 11.5 yrs.	0.09	0.03	5.86	**0.01**	1.89	1.16	1.92
Model 2: self-esteem							
Improvement-deterioration in Positive Self-esteem domain							
Male gender	-0.13	0.26	0.02	0.96	0.99	0.60	1.63
Highest education father	0.30	0.22	1.81	0.18	1.35	0.87	2.09
Highest education mother	-0.44	0.26	2.86.	0.09	0.65	0.39	1.07
Depression/anxiety at the age of 11.5 yrs.	0.15	0.05	7.71	**0.005**	1.63	1.59	1.84
Social dysfunction at the age of 11.5 yrs.	0.54	0.07	0.65	0.42	1.05	0.92	1.21
Improvement-deterioration in Negative self-esteem domain							
Male gender	-0.22	0.25	0.76	0.38	0.81	0.49	1.31.
Highest education father	0.11	0.22	0.24	0.62	1.11	0.73	1.70
Highest education mother	-0.36	0.25	2.10	0.14	0.70	0.43	1.14
Depression/anxiety at the age of 11.5 yrs.	0.11	0.04	4.67	**0.03**	1.23	1.19	1.34
Social dysfunction at the age of 11.5 yrs.	0.04	0.06	0.47	0.49	1.05	0.92	1.19

[1] Boys are used as reference group

As none of the factors in the analysis were associated with improvement or deterioration in both social dysfunction and positive self esteem, these results are not shown

Discussion

The aim of this study was to describe changes in psychological well-being and self-esteem in adolescence followed longitudinally from age 11.5 to 15 years. At baseline, there was significant difference between 11.5 year-old boys and girls in positive self-esteem in favour of boys. Comparing longitudinal data from early to middle adolescence, we found intra-individual deterioration in psychological well-being and improvement in self-esteem among boys and girls with different effect sizes and differences in proportions of boys and girls who improved, deteriorated or remained stable.

Gender differences and changes over time in psychological well-being

Both genders deteriorated significantly and relevantly in the depression/anxiety dimension. However, while this change over time indicates a small deterioration in boys, it means a moderate deterioration in girls. This effect-size gender difference in the depression/anxiety domain could be explained also by the finding that only girls deteriorated significantly and relevantly in overall psychological well-being with small effect size. From a proportional perspective, we found larger significant proportions of girls who deteriorated in the depression/anxiety dimension and of boys who improved in the depression/anxiety dimension. Our findings that no significant gender differences in psychological well-being at the age of 11.5 years are in line with previous research (Sweeting & West, 2003). We found larger changes over time in terms of deterioration in the depression/anxiety domain in girls compared to boys, supporting the evidence of increased gender difference with increasing age. Similar trends were noted by Sweeting & West (2003) and Tait et al. (2003). Our findings of proportionally larger changes over time among girls, who deteriorated, and boys, who improved on depression/anxiety domain, raise questions regarding what is behind these changes and what factors trigger them. From a developmental perspective, biological puberty in girls significantly precedes, rather than corresponding with, the age of successful functioning as an adult. This emerging mismatch creates, together with other socio-cultural influences, fundamental pressures on contemporary adolescents and on how they live in society (Gluckman & Hanson, 2006). Finally, from a mental health perspective, early to middle adolescence is recognised as the time of emergence of an excess of internalising disorders in girls (depression/anxiety), in comparison with the childhood, where boys predominated as a result of their excess within the diagnostic categories of behavioural and attention disorders (Patton & Viner, 2007).

Gender differences and changes over time in self-esteem

Adolescence is seen as important period for self-esteem formation. Both genders improved significantly and relevantly in overall self-esteem and in negative self-esteem, with a small magnitude among boys as well as girls. From a proportional perspective, we found significant larger proportion of boys who remained stable in overall self-esteem in comparison to girls. Our findings of significant higher level of positive self-esteem, but with a small magnitude, among boys in age of 11.5 years, are in line with the results of most other research in this field (Bolognini et al., 1996; Baldwin & Hoffmann, 2002; Halama, 2008). Our findings of small changes over time, in terms of improvement, on overall self-esteem and on negative self-esteem in both genders can be compared with studies suggesting that self-esteem is a dynamic construct. However, these studies did not give clear and consistent results and were mostly focused on mean-level changes. Some of them conclude that self-esteem increases (Birndorf et al., 2005); while others report that it declines (Brown et al., 1998) or fluctuates (Baldwin & Hoffmann, 2002) during the adolescent years. Our findings of proportionally larger change over time in overall self-esteem among boys who remained stable in comparison to girls could be considered more supportive to those who indicate that self-esteem remains fairly static (Bolognini et al., 1996) during this life period.

Factors associated with changes over time in psychological status

Our findings in line with previous studies showed that gender was associated only with psychological well-being (Allison et al., 2005). Girls were more likely to deteriorate in overall psychological well-being, and this association was mainly due to the depression/anxiety domain. However, some studies (Baldwin & Hoffmann, 2002; Tait et al., 2003) confirmed that there was no significant impact of gender on changes over time in self-esteem.

Our results revealed that a lower educational level of the mother can play a role in relation to the depression/anxiety domain and does not play role in relation to self-esteem. The contribution of parents on depressive mood of adolescents was confirmed by Michael, Ben-Zur (2007), however not as an educational factor but as relational factor. We can presume that mothers with higher educational level might better understand developmental changes and be more sensitive when some problems or symptoms occur in their adolescent children. Studies conducted on the relationship of self-esteem to parental education found no significant affect of parental education on self-esteem in adolescents (Birndorf et al., 2005) or on global self-worth in girls (Biro et al., 2006). Moreover, another study concluded that there are other socioeconomic factors – like positive family communication (Birndorf et al., 2005), parental attitudes and behaviours

(Pervin, 1993) factors associated with school environment (Birndorf et al., 2005), or race in girls (Brown et al., 1998; Birndorf et al., 2005; Biro et al., 2006)– which contribute significantly to the self-esteem.

We also found that the depression/anxiety domain at the age of 15 was associated with low overall self-esteem at the age of 11.5 years (model 1), and decreased levels of overall and negative self-esteem at the age of 15 years were associated with a high level of the depression/anxiety domain at the age of 11.5 years (model 2). Poor overall self-esteem was a independent predictor of psychological well-being in an Australian sample (Tait et al., 2003), and symptoms of depression and low self-esteem in middle adolescence were identified as risk factors for subsequent depression only in Finnish females (Pelkonen et al., 2008). Thus, answering the question of whether low self-esteem is secondary to the depression/anxiety domain or vice versa remains open.

Strengths and limitations

The strength of our study is its focus on change over time in psychological status by gender and the use of intra-individual changes in psychological status across adolescents. Moreover, the measure of psychological well-being used in our research brings findings on an age group in which the GHQ-12 is not so frequently used. Next strength is the examination of the possibility of age by gender and by parental education interactions in psychological status. Limitations are the underrepresentation of adolescents with higher parental education in the follow-up sample and the unfamiliarity of adolescents with their parent's socioeconomic status. However, despite this underrepresentation of subjects with parents having university education, drop-outs did not differ in psychological well-being and self esteem compared to those who participated at baseline.

Conclusion

The emergence or increase of an excess of poorer psychological status in adult females is rooted in adolescence. The results of our study challenge us to continue in this research and go deeper into relations of other potential socioeconomic factors (parental occupation, social support) associated with psychological well-being and self-esteem or uncover pathways between psychological well-being and self-esteem from a domain-specific perspective in early to middle adolescence. Understanding these patterns can increase the potential for work in the field of mental health promotion as well as health risk behaviour prevention in adolescents.

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Chapter 6

The associations between assertiveness, psychological well-being and self-esteem in adolescents

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Abstract

This study explored the associations between adolescents' assertive behaviour, psychological well-being and self-esteem. The sample consisted of 1023 students (14.9±0.51; 47.6% boys). Two dimensions of the Scale for Interpersonal Behaviour (distress and performance), two factors of the General Health Questionnaire-12 (depression/anxiety and social dysfunction) and two factors of the Rosenberg Self-esteem Scale (positive self-esteem and negative self-esteem) were used; data were analysed with stepwise linear regression. It was found that (1) the more anxious respondents felt in assertive situations, the less frequently they engaged in these situations; and that (2) both dimensions of assertiveness were associated with psychological well-being and self-esteem.

Keywords: assertiveness, psychological well-being, self-esteem, adolescence

Introduction

Adolescence is an important time for establishing the social position of individuals. During this time, young people are exposed to a wide range of new social situations, such as parties, bars and concerts. As a result, young people come into contact not only with friends, but also with strangers, compelling them to learn and develop new social roles without the supervision of their parents (Inglés et al., 2005). Peer relationships play a critical role in the development of social skills and the feelings that are essential for personal growth and adjustment (La Greca & Lopez, 1998). The possession of social skills such as effective communication can lead to a more positive social self-image and may determine the degree to which adolescents are able to succeed in their peer group (Riggio et al., 1990).

Previous research focusing on assertiveness as a social skill (Orme & Bar-On, 2002) has shown that this construct has a number of different dimensions, including the ability to express oneself without anxiety or aggression in different situations (Bouvard et al., 1999). Assertiveness has also been defined as the process of direct and appropriate communication of a person's needs, wants and opinions without punishing or putting down others (Arrindell & van den Ende, 1985). It can be used as an instrument for initiating and maintaining socially supportive relationships and hence enjoying better emotional well-being (Eskin, 2003).

Other studies have explored the relationship between assertiveness and mental health in adolescence and have found certain variables which influence assertiveness, including culture (Eskin, 2003), self-esteem (Bijstra et al., 1994), psychological distress (Taylor et al., 2002), depression (Eskin, 2003), risk behaviour (Cuijpers, 2002) and gender (Bourke, 2002). Although some earlier studies showed that boys are more assertive than girls (Eskin, 2003), data from recent years have found that girls have a significantly higher score on assertive communication and independence (Bourke, 2002) or that there are no significant gender differences in assertiveness (Karagözoğlu et al., 2008). Therefore, in the present study gender differences are not investigated, but the associations between the assertive subscales and the two factors of psychological well-being and the two factors of self-esteem were controlled for sex. The associations between the depression/anxiety and social dysfunction factors of psychological well-being and positive self- and negative self-esteem factors on one hand and the four assertive subscales—positive feelings, negative feelings, assertiveness and personal limitations—on the other were explored in the present study. The above-mentioned studies did not explore assertive behaviour and its associations with the mentioned variables at the level of the subscales. Such an approach might add to our knowledge in this field. The existing literature is mainly oriented on exploring the assertive

behaviour between boys and girls or between various nations and cultures where differences could be expected.

The aim of our study was to explore the associations between these dimensions of assertiveness and adolescents' psychological well-being and self-esteem while controlling for sex. Firstly, the relationship between the levels of anxiety felt in assertive situations (the distress dimension) and the frequency of engagement in these situations (the performance dimension) were examined. A negative relationship between these two dimensions was expected. Secondly, the association between the assertive dimension and psychological well-being and self-esteem was explored. It was anticipated that both the distress and performance dimensions of assertiveness would be negative predictors of psychological well-being and self-esteem. Thirdly, the influence of the distress dimension on psychological well-being and self-esteem, controlling for the performance dimension, was explored. It was also of interest to examine the changes in the distress dimension when controlling for the frequency of engaging in such situations (performance). It was anticipated that when adolescents felt distress in assertive situations and when these situations were occurring regularly (performance), then the negative association of the distress dimension on the studied variables would increase.

Methods

Sample

The study sample consisted of 1023 students (487 boys - 47.6%) from 18 elementary schools in Kosice (230,000 inhabitants), Slovak Republic. The selected schools were located in different parts of Kosice in order to ensure a representative sample for the city. The selection of the sample was random and stratified based on sex and age. The age of the respondents ranged from 14 to 17 years, with a mean age of 14.9 years (standard deviation 0.51). Data were collected from April to June 2003. The questionnaires were completed by respondents during two regular 45-minute classes in the absence of a teacher and on a voluntary and anonymous basis in the presence of a trained researcher. The response rate was 82.6% as a result of the absence of students from school.

Measurements

Psychological well-being. The General Health Questionnaire is a self-administered screening instrument used to measure psychological well-being. It is designed to cover four identifiable elements of distress: depression, anxiety, social impairment and hypochondria. The GHQ can be used as a one, two, three or four factorial measure using different

settings and has been translated into different languages (Goldberg & Williams, 1988; Martin & Newell, 2005; Penninkilampi-Kerola et al., 2006). In this study, psychological well-being was measured using two factors (depression/anxiety and social dysfunction) of a shortened version of the General Health Questionnaire – the GHQ-12 (Sarkova et al., 2006). The depression/anxiety factor identifies feelings of distress and consists of items 2, 5, 6, 9, 10 and 11 (lost sleep due to worry, constantly under strain, can't overcome difficulties, feeling unhappy, loss of self-confidence, and thinking yourself worthless). Items 1, 3, 4, 7, 8 and 12 (ability to concentrate, playing a useful part, capable of making decisions, enjoying normal activities, facing up to problems, feeling reasonably happy) are components of the social dysfunction factor and indicate the inability to carry out one's normal 'healthy' functions (Goldberg & Williams, 1988). The GHQ-12 questions compare how a respondent's present state differs from their usual state. For the scoring, a four-point Likert scale (0,1,2,3) was used, with sum scores for each factor ranging from 0 to 18. A higher score indicated more depression/anxiety and social dysfunction. Cronbach's alpha was 0.80 for the depression/anxiety factor and 0.64 for social dysfunction.

Self-esteem. Self-esteem can be defined as a person's global appraisal of his/her positive or negative value and was measured using the Rosenberg Self-esteem Scale (RSE) (Rosenberg, 1965). The scale was originally developed to measure global feelings of self-worth or self-acceptance among adolescents and is generally considered as the standard against which other measures of self-esteem are compared (Blascovich & Tomaka, 1991). Most studies use the scale as a one-dimensional, 10-item instrument, while others report a two-dimensional solution (Blascovich & Tomaka, 1991; Sarkova et al., 2006). The two-dimensional instrument has been administered in a study of 53 countries (Schmitt & Allik, 2005) and in two studies in Slovakia (Sarkova et al., 2006; Halama, 2008). Therefore, in this study, the scale was used as a two-factor instrument consisting of a general self-confidence subscale for positive self-esteem (items (1) satisfied with self, (3) having good quality, (4) equal to others, (7) feeling valuable and (10) positive attitude) and a general self-deprecation subscale for negative self-esteem (items (2) feeling no good at all, (5) not proud, (6) feeling useless, (8) lack of respect and (9) feeling a failure) (Kaplan & Pokorny, 1969; Blascovich & Tomaka, 1991; Sarkova et al., 2006). Each item for both factors had four response options (1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree), and the sum score for each factor ranged from 5 to 20, with a higher total score indicating higher positive and negative self-esteem. Cronbach's alpha was 0.71 for positive self-esteem and 0.63 for negative self-esteem.

Assertiveness. Assertiveness was measured using the 47-item multidimensional self-reporting Scale for Interpersonal Behaviour (SIB)

(Arrindell & van der Ende, 1985). The items were classified into four subscales: (1) display of negative feelings or negative assertion – requesting a change in a person's irritating behaviour and standing up for one's rights in a public situation (13 items); (2) expression of and dealing with personal limitations – admitting ignorance about a topic, recognition of one's failure or limitation, the ability to deal with criticism and pressure, requesting help and attention (13 items); (3) initiating assertiveness – expressing one's own opinion (10 items); and (4) a display of positive assertion of social skills – giving and receiving praise or compliments, displaying positive feelings (8 items). Each subscale has, according to the authors, two dimensions: the degree of discomfort (distress) and the frequency of engaging (performance) in situations associated with attempts at self-assertion in specific social contexts (Arrindell & van der Ende, 1985; Bijstra et al., 1994; Bouvard et al., 1999). Respondents had to indicate (on a four-point scale) to what extent such situations made them anxious (for the distress dimension: 1= not at all, 2=a little bit, 3=quite, 4=very) and how often they engage in such situations (for the performance dimension: 1=never, 2=seldom, 3=frequently, 4=always). The sum score for each subscale and the two dimensions was acquired by calculating the relevant items for the given subscale and dimension. Cronbach's alpha (1) for the subscale 'display of negative feelings' was 0.76 for the distress dimension and 0.71 for the performance dimension; (2) for the subscale 'expression of and dealing with personal limitations' it was 0.81 for the distress dimension and 0.74 for the performance dimension; (3) for the subscale 'initiating assertiveness' it was 0.78 for the distress dimension and 0.71 for the performance dimension; and (4) for the subscale 'display of positive assertion' it was 0.76 for the distress dimension and 0.73 for the performance dimension. Cronbach's alpha was 0.93 for the distress dimension of the SIB and 0.90 for the performance dimension.

Statistical analyses

Firstly, the associations between the distress and performance dimensions of assertive behaviour were explored using the Pearson correlation coefficient. Power analysis was performed using GPower version 3.0.10. Next, two factors of psychological well-being (depression/anxiety and social dysfunction) and self-esteem (positive and negative self-esteem) were used as dependent variables in a stepwise linear regression. In this paper, the associations of the two assertiveness dimensions with the dependent variables were explored separately. Subsequently, the association of the distress dimension was adjusted for the performance dimension. Sex was controlled for in both cases. Analyses were done using the statistical software package SPSS version 12.1.

Results

The means and standard deviations of the all studied variables used are presented in Table 6.1.

Table 6.1 Descriptive characteristics of the sample

	Male N=487	Female N=536	Whole sample N=1 023
	mean (SD)		
Age	mean - 14.9 years (14 - 17, SD 0.51)		
Psychological well-being			
depression/anxiety	10.41 (3.71)	12.38 (4.09)	11.44 (4.03)
social dysfunction	11.24 (2.37)	11.48 (2.55)	11.37 (2.47)
Self-esteem			
positive self-esteem	15.44 (2.22)	15.15 (2.14)	15.29 (2.18)
negative self-esteem	13.69 (2.49)	12.97 (2.67)	13.31 (2.61)
Assertiveness/Distress			
negative feelings	22.00 (5.38)	22.60 (5.26)	22.32 (5.32)
positive feelings	13.99 (4.07)	14.84 (3.99)	14.44 (4.05)
Assertiveness	16.47 (4.51)	16.94 (4.52)	16.72 (4.52)
personal limitation	21.30 (5.81)	21.84 (5.29)	21.59 (5.54)
Assertiveness/Performance			
negative feelings	27.65 (4.18)	27.89 (3.93)	27.77 (4.05)
positive feelings	18.13 (3.26)	18.34 (3.23)	18.24 (3.24)
Assertiveness	23.04 (3.62)	23.60 (3.75)	23.34 (3.69)
personal limitation	28.38 (3.98)	29.59 (3.92)	29.02 (3.99)

Correlations for all studied variables are presented in Table 6.2. As the table shows both factors of psychological well-being and self-esteem were significantly correlated with the assertive subscales of the distress dimension. On the other hand, social dysfunction and both the positive and negative self-esteem factors did not significantly correlate with the negative feelings and personal limitations of the performance dimension. Depression/anxiety did not correlate with positive feelings, and social dysfunction and negative self-esteem did not correlate with assertiveness of performance dimension. In addition, the distress dimension of negative assertion and personal limitations did not correlate with the corresponding subscales of the performance dimension. Although some of the correlation coefficients were significant, their value was very small indeed, and the power of the test was about 0.5; a larger sample size is needed to confirm/reject the relation. The other two subscales, positive feelings and assertiveness, were found to be negatively correlated, with a power of the correlation tests larger than 0.8 ($r = -0.30$ for positive feelings and for assertiveness). In other words, the more distress respondents felt in assertive situations, the less frequently they engaged in such situations.

Table 6.2 Correlations between the studied variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. depression/anxiety	1												
2. social dysfunction	.45***	1											
3. positive self-esteem	-.36***	-.33***	1										
4. negative self-esteem	-.46***	-.28***	.46***	1									
5. negative feelings[a]	.24***	.12***	-.25***	-.22***	1								
6. positive feelings[a]	.23***	.13***	-.24***	-.20***	.60***	1							
7. assertiveness[a]	.18***	.12***	-.24***	-.16***	.68***	.66***	1						
8. personal limitation[a]	.25***	.12***	-.23***	-.20***	.68***	.60***	.65***	1					
9. negative feelings[b]	.16***	.02	.05	-.01	-.06	-.04	-.07**	.01	1				
10. positive feelings[b]	.02	-.10***	.21***	.09**	-.12***	-.30***	-20***	-.11***	.46***	1			
11. assertiveness[b]	.10***	-.02	.13***	.06	-.08**	-.13***	-.30***	-.07*	.60***	.60***	1		
12. personal limitation[b]	.17***	.01	-.05	-.05	.02	-.03	-.03	.02	.64***	.39***	.60***	1	
13. sex	.24***	.05	-.07**	-.14***	.06	.11***	.05	.05	.03	.08**	.03	.15***	1

Notes. [a]distress dimension, [b]performance dimension; ***p< 0.001, **p< 0.01, *p< 0.05

In the next step, the association between the distress and performance dimensions with each assertive behaviour subscale on the depression/anxiety and social dysfunction factors of psychological well-being and the positive and negative self-esteem factors were explored (Table 6.3). Sex was also controlled for during this process.

Depression/anxiety - The association between the distress and performance dimensions of the assertive behaviour subscales and psychological well-being factors were analysed. The distress dimension was found to have a strong association with depression/anxiety in all assertive behaviour subscales. However, the association of the performance dimension with this factor was weaker for two of the subscales: assertiveness and positive feelings (Table 6.3). After adjustment of the distress dimension for performance, the association of the distress dimension with depression/anxiety did not change for any of the four subscales (Table 6.3).

Social dysfunction - The distress dimension was found to have a strong association with social dysfunction for all assertive behaviour subscales. The association of the performance dimension with social dysfunction was not significant, with the exception of the positive feelings subscale. When the distress dimension was adjusted for the performance dimension, the association was weaker for the assertiveness and positive feelings subscales.

Positive self-esteem - The distress dimension was found to have a strong association with positive self-esteem in all the assertive behaviour subscales. The association of the performance dimension with positive self-esteem was strong for both the positive feelings and assertiveness subscales. However, it was not significant for either the personal limitation or negative feelings subscales (Table 6.3). The subsequent adjustment of the distress dimension for the performance dimension did not change the association for any of the four subscales.

Negative self-esteem - The distress dimension had a strong association with negative self-esteem in all of the assertive behaviour subscales, while the association of the performance dimension was significant with the positive feelings and assertiveness subscales. As with positive self-esteem, the association of the distress dimension with negative self-esteem did not change when adjusted for the performance dimension (Table 6.3).

Table 6.3 Results from the linear regression analysis: Associations of assertive dimensions with Depression/anxiety, Social dysfunction, Positive self-esteem, and Negative self-esteem

	Depression/anxiety		Social dysfunction		Positive self-esteem		Negative self-esteem	
	Step 1 β^{sig}	Step 2 β^{sig}	Step 1 β^{sig}	Step 2 β^{sig}	Step 1 β^{sig}	Step 2 β^{sig}	Step 1 β^{sig}	Step 2 β^{sig}
Personal limitation–distress dimension	.24***	.24***	.12***	.12***	-.22***	-.22***	-.20***	-.20***
Sex	.24***	.23***	.04^{ns}	.06^{ns}	-.06^{ns}	-.07*	-.14***	-.14***
R^2	12%	14%	2%	1%	5%	5%	6%	6%
Personal limitation–performance dimension	.13***		-.003		-.04		-.03	
Sex	.24***		.62		-.07*		-.15***	
R^2	8%		0.2%		0.6%		2%	
Assertiveness–distress dimension	.16***	.21***	.12***	.11**	-.24***	-.21***	-.16***	-.15***
Sex	.23***	.22***	.04	.04	-.05	-.06	-.13***	-.13***
R^2	8%	10%	1%	1%	6%	6%	4%	4%
Assertiveness–performance dimension	.09**		-.02		.13***		.07*	
Sex	.24***		.05		-.07*		-.14***	
R^2	7%		0.1%		2%		2%	
Positive feelings–distress dimension	.21***	.23***	.13***	.10*	-.23***	-.18***	-.18***	-.17***
Sex	.22***	.22***	.04	.06	-.05	-.06*	-.12***	-.13***
R^2	10%	11%	2%	2%	6%	8%	5%	5%
Positive feelings–performance dimension	.01		-.12**		.22***		.10**	
Sex	.25***		.06		-.08**		-.15***	
R^2	6%		1%		5%		3%	
Negative feelings–distress dimension	.23***	.24***	.12***	.12***	-.25***	-.25***	-.21***	
Sex	.23***	.23***	.05^{ns}	.05^{ns}	-.06^{ns}	-.07*	-.13***	
R^2	11%	14%	2%	1%	6%	7%	6%	
Negative feelings–performance dimension	.16***		.02^{ns}		.05^{ns}		-.01^{ns}	
Sex	.24***		.05^{ns}		-.08**		-.14***	
R^2	8%		0.1%		1%		2%	

Notes. Step 1: distress dimension, Step 2: distress dimension adjusted for the performance;
***p< 0.001, **p< 0.01, *p< 0.05

Discussion

The aim of the study was to explore the associations of two dimensions of assertiveness with psychological well-being and self-esteem in adolescents. Firstly, the relationship between anxiety in assertive situations and the frequency of engaging in these situations was examined. As expected, strong correlations between these dimensions were found. That is, the greater the anxiety felt in expressing positive feelings and assertiveness (distress dimension), the less frequently adolescents engage in these situations (performance dimension). At the same time, as we expected, there are strong correlations between depression/anxiety, social dysfunction, positive and negative self-esteem and the assertive subscales. These findings are in line with Riggio et al. (1993) who also found strong correlations between psychological well-being, self-esteem and social skills.

Secondly, the association of assertiveness with two factors of psychological well-being and two factors of self-esteem was explored. As expected the distress dimension, as well as the performance dimension, was negatively associated with depression/anxiety and positive and negative self-esteem but was not associated with social dysfunction. This weaker relationship between assertiveness and depression/anxiety and social dysfunction in comparison with the stronger relationship between assertiveness and positive and negative self-esteem is consistent with findings of other studies (Riggio et al., 1990; Bijstra et al., 1994). While assertiveness could be seen as behaviour towards the outside world, it is at the same time strongly associated with feelings towards oneself. Therefore, it appears that the association of assertiveness with depression and self-esteem is stronger than with social dysfunction.

Finally, it had been expected that the negative effect of the distress dimension on depression/anxiety, social dysfunction and positive and negative self-esteem would increase when the frequency of performance was controlled for. However, this was not the case in this study, although there may be several reasons and explanations for the way people behave in social situations. Several factors associated with assertive behaviour might play a role, and those such as personal (extroversion, introversion) or psychosocial (social fears) or emotive (social self-esteem) factors, once taken into account, could provide a better understanding of assertive behaviour in adolescence. It is shown that there are also statistical differences in levels of self-esteem and assertiveness among students who had well and who had poor family relationships (Karagözoğlu et al., 2008). Among other possible factors, the current area of study at the university also plays an important role in this study. The inclusion of these factors in further analyses is necessary to gain a better understanding of the topic (Inglés et al., 2005). Another possible explanation may be the

adaptation of adolescents to social situations. The anxiety they feel in assertive situations may be the same regardless of how often they engage in them. While they may feel anxious, the association of anxiety with psychological well-being and self-esteem does not appear to increase with the increasing frequency of such situations. In line with Bijstra's study (1994), low performance may be interpreted negatively when it is associated with high distress, such as avoidance behaviour. On the other hand, low performance is not necessarily negative condition when it is associated with low distress (Bijstra et al., 1994). Distress and performance might be closely related to the demands and the type of assertive situation as well as the character of a person. Several studies have shown that most adolescents report some social situations (e.g. asking a stranger in a public area to put out his cigarette) require being more assertive than others (e.g. thanking somebody for helping) (Inglés et al., 2005). Therefore, an adolescent's difficulties with assertive behaviour may be greater when the situation involves some type of conflict. This contrasts with situations which are not so confrontational, such as thanking someone for help with schoolwork. Although it was anticipated that the subscales from the SIB would show some differences with regard to different assertive situations, this study did not confirm this assumption. The reason could be associated with versions of items in separate subscales of the SIB, and researchers need to be aware of the potential problems surrounding the translation scale. In addition, adolescents may lack the linguistic skills necessary to give appropriate responses and may not sense the subtle of difference between items.

Therefore, it appears that the independent variables explain a small percentage of the variance of the dependent variables. When the distress dimension was adjusted for the performance dimension, the explained variance increased, especially for the depression/anxiety factor. There is a lack of studies oriented on assertiveness and interpersonal behaviour. The findings based on studies of different age and cultural groups cannot be generalised without additional research. The majority of the studies on assertiveness explored sex differences, and only a few of them focused on the associations between assertiveness and mental health.

This study has several strengths from which the most important is the use of two factors of psychological well-being and two factors of self-esteem in combination with four subscales and two dimensions of assertiveness. This enables a deeper understanding of the associations. In terms of limitations, the cross-sectional design of our study restricts our findings. A longitudinal study is necessary for a better understanding of mentioned variables and might help us to contribute to unravel the pathway.

There are several studies focusing on prevention which show that school-based drug programs that include mediating variables such as self-

efficacy, self-esteem, well-being and social skills could be more effective and might help prevent substance use (Botvin, 2000). According to our findings, we may assume that an increase in adolescents' assertiveness will have significant positive consequences for their psychological well-being, self-esteem and other aspects of healthy development, which could also be considered when designing health promotion as well as intervention programmes focused on this group. Cuijpers' review (2002) suggests adding life-skills training to social-influence programs, because thus far there is not sufficient evidence from research on mediating variables that social training, enhancing of self-esteem and focusing on psychological well-being increase the effects of prevention programs. Because the efficacy of intervention programs is highly dependent on precise identification of relevant and changeable health determinants, it is important to understand and incorporate into these programs our findings about the role of assertiveness on psychological well-being and self-esteem among adolescents.

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Chapter 7

The contribution of gender, bullying, school connectedness and self-esteem to psychological well-being in adolescence

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Submitted

Abstract

The present study explores the joint contribution of gender, bullying, school connectedness and self-esteem to psychological well-being in adolescents. The sample consisted of 1023 adolescents (47.6% boys, 14.9±.51years) in Slovakia. Two questions on bullying, the School Connectedness Score and the Rosenberg Self-esteem Scale were used as independent variables, and the 12-item version of the General Health Questionnaire was used as a dependent variable in the present study .Boys more frequently took part in bullying others, had higher self-esteem and better psychological well-being ($p<.001$) than girls. Higher frequency of being bullied, lower school connectedness and lower self-esteem were significantly associated with worse psychological well-being in both sexes, while higher frequency of taking part in bullying others was significantly associated with worse psychological well-being only in girls. Gender, bullying, school connectedness and self-esteem were significant independent predictors of psychological well-being, with the highest contribution coming from self-esteem (19%), which explained 28% of the variance in psychological well-being. Self-esteem was found to be the most important factor contributing to the psychological well-being of adolescents. This study's findings support the significance of recognizing self-esteem as an important and potentially modifiable factor of psychological well-being in adolescents and of its integration as a component of effective school-based mental health promotion strategies for adolescents.

Keywords: adolescents, bullying, psychological well-being, school connectedness, self-esteem

Introduction

Adolescence is a period of change in the physical, mental and social worlds which are associated with adolescents' health-related behaviour and health. In this stage of life psychological well-being is one of the most significant elements related to and dynamically influencing mental health (Keyes, 2006). Worse psychological well-being in terms of depression/anxiety and social dysfunction is influenced by a wide range of factors, including gender and quality of social relations. These factors might operate and interact to increase the risk of developing mental health.

The important role gender plays in adolescence has been previously observed, and international studies have presented these differences in perceived health and health-related behaviour, as well as in various aspects of mental health (Currie et al., 2004; Mittendorfer-Rutz, 2006).

Social relations are recognized as one of the major factors influencing health during adolescence (Marta, 1997; Piko, 2000; Rigby, 2000). Surveys conducted in different countries have demonstrated that bullying as an unacceptable form of social relations is a worldwide phenomenon among children and adolescents (Rigby, 1997; Rigby, 2000; Brener et al., 2002; Currie, 2004; Due et al., 2005). Bullying may appear in many forms, including direct or indirect physical and/or psychological aggression, verbal harassment (such as cruel teasing, name calling), negative gestures and peer isolation (Scheidt et al., 2001). Specific forms of bullying vary with gender and age (King et al., 1996; Rigby, 1997; Due et al., 2005). As a study of King et al. (1996) revealed, bullying is connected with mental health. Students who had been bullied at least once during the school year tended to have fewer friends, with whom they could easily communicate, more often felt left alone at school, were more likely to feel unhappy, helpless, depressed and nervous, and more often viewed themselves as outsiders compared with those who had never been bullied11. In addition, being bullied has been linked to lower self-esteem, worse mental health, staying away from school or defining the school as "never" or "hardly ever" a safe place (King et al., 1996; Rigby, 1997; Rigby, 2000). At the same, those who bully others have the tendency to dislike school and are more likely to be engaged in health-risk behaviours, such as smoking or excessive drinking (King et al., 1996; Scheidt et al., 2001).

For a deeper understanding of the influence that social relations have on adolescents, school connectedness is an important indicator. Higher school connectedness has been identified as a protective variable against emotional distress, violence and several forms of risk behaviour (King et al., 1996; Resnick et al., 1997; Bonny et al., 2000). School connectedness has also been positively associated with academic performance and self-perceived health (Bonny et al., 2000).

Understanding adolescents' behaviour could also be based on understanding of the development of self-esteem and knowing its relatedness to gender and socio-economic status (Bolognini et al., 1996). Therefore, the aims of this study were to investigate gender differences in bullying, school connectedness, self-esteem and psychological well-being and to examine their interrelations. At the same time, the joint contribution of gender, bullying, school connectedness and self-esteem to psychological well-being was investigated.

Methods

Sample

The study sample consisted of 1023 students (487 boys - 47.6%) attending 18 schools in Kosice (about 260,000 inhabitants, Eastern Slovakia). Data were collected in April - June 2003. The respondents' ages ranged from 14 to 17 years with the mean age of the whole sample at 14.95 years (± .51). The response rate of 82.6% was due to the absence of students from school on the day of data collection. The local Ethics committee approved the study.

Measures

Bullying was measured using two questions from the Health Behaviour in School-Aged Children Survey (Currie et al., 2000). In both questions – 'How often have you been bullied in the current school year?' and 'How often have you taken part in bullying others in the current school year?' – five response categories were used: 1='never', 2='once or twice', 3='sometimes', 4='about once a week', 5='several times a week'. For this study the answers were dichotomised as 1='never' and 2='at least once' in the same way as was done in the HBSC study.

School connectedness measured using the School Connectedness Score – SCS (Bonny et al., 2000). Respondents express their feelings towards following statements: 'I feel close to people at this school'; 'I feel like I am part of this school'; 'I am happy to be at this school'; 'The teachers at this school treat students fairly'; and 'I feel safe in my school'. Possible answers are on a four-point Likert-type scale, from 1='strongly agree' to 4='strongly disagree'. The items are reverse-coded and summed, and the SCS scores range from 5 to 20. A higher score reflects higher school connectedness. Cronbach's alpha in the current study sample was .79.

Self-esteem was measured using the 10-item Rosenberg's Self-esteem Scale – RSE (Rosenberg, 1965). The scale was originally developed to measure adolescents' global feelings of self-worth and is a well-validated

general measure of global self-esteem. The items are usually scored using a four-point scale (1='strongly agree', 2='agree', 3='disagree', 4='strongly disagree'). After recoding the positive items, the total self-esteem score ranges from 10 to 40, with a higher score indicating higher self-esteem. Cronbach's alpha in the present sample was .75.

Psychological well-being was measured using the 12-item version of the General Health Questionnaire - GHQ-12 (Goldberg & Williams, 1988). Respondents indicate on a four-point scale how they have been feeling over the last four weeks in relation to each item. Likert-type scoring (0-1-2-3) is applied. Sum scores range from 0 to 36, with lower scores indicating better psychological well-being. Cronbach's alpha in the current study sample was .80.

Data analysis

Chi-square and unpaired t-tests were used to analyse gender differences in bullying, school connectedness, self-esteem and psychological well-being. Pearson's (2-tailed) correlations were calculated to examine correlations between the study variables. Multiple linear regressions were performed to examine the joint contribution of gender, bullying, school connectedness and self-esteem to psychological well-being.

Results

Gender differences

Table 7.1 shows that there were no gender differences in the frequency of being bullied during the current school year, or in school connectedness. Regarding taking part in the bullying of others, significant differences were present, with higher participation by boys. Boys reported also significantly higher self-esteem and better psychological well-being than girls.

Table 7.1 Frequency of having been bullied and taken part in bullying others, school connectedness, self-esteem and psychological well-being – gender differences

	Boys				Girls				
	N	%	M	SD	n	%	M	SD	Gender diff.
Been bullied									ns.[1]
Never	429	88.5			475	88.8			
At least once	56	11.5			60	11.2			
Taken part in bullying									*** [1]
Never	302	62.4			407	76.1			
At least once	182	37.6			128	23.9			
School connectedness	482		16.9	4.0	532		17.2	3.5	ns.[2]
Self-esteem	470		29.1	3.9	527		28.1	4.2	*** [2]
Psychological well-being	471		9.7	5.2	524		11.9	5.8	*** [2]

Note: *** p≤ .001, [1] = chi-square, [2] = t-test

Correlations

The correlations between variables of social relations (bullying and school connectedness), self-esteem, and psychological well-being are presented in Table 7.2. Higher frequency of being bullied, lower school connectedness and lower self-esteem were significantly associated with worse psychological well-being in both boys and girls. Significant correlations to psychological well-being were higher for boys in frequency of being bullied and school connectedness, and in self-esteem for girls. Higher frequency of taking part in bullying others was significantly associated with worse psychological well-being only for girls.

Table 7.2 Correlations between being bullied, bullying others, school connectedness, self-esteem and psychological well-being

	Psychological well-being		
	Total sample	Boys	Girls
Being bullied	.11**	**.14****	.09*
Bullying others	.06	.06	**.12****
School connectedness	-.19**	**-.22****	-.19**
Self-esteem	-.50**	-.43**	**-.53****

Note: * p≤ .05, ** p≤ .01

Multiple linear regressions

To explore the joint contribution of gender, bullying (being bullied, taking part in bullying), school connectedness and self-esteem on psychological well-being, hierarchical multiple regressions were carried out with the psychological well-being scores as the dependent variable.

In the total sample (Table 7.3), gender explained 4% (p<.001) of the psychological well-being total variance, bullying an additional 2% (p<.01), school connectedness 3% (p<.001) and self-esteem another 19% (p<.001). In sum, after entering all the variables into the equation, the total explained variance in psychological well-being was 28%.

Table 7.3 Multiple regression analysis: gender, bullying, school connectedness and self-esteem on psychological well-being

		Step 1	Step 2	Step 3	Step 4
1	**Gender**	.20***	.21***	.21***	.21***
	R^2 change *(F_{change})*	**.04** *(39.52***)*			
2	**Been bullied**		.10**	.07*	.02
	Taken part in bullying		.08*	.07*	.04
	R^2 change *(F_{change})*		**.02** *(9.36***)*		
3	**School connectedness**			-.20***	-.09***
	R^2 change *(F_{change})*			**.03** *(35.51***)*	
4	**Self-esteem**				-.45***
	R^2 change *(F_{change})*				**.19** *(250.71***)*
	Total R^2 (adjusted)	**.04**	**.06**	**.09**	**.28**

Note: displayed values are betas (ß), * p≤ .05, ** p≤ .01, *** p≤ .001

Discussion

The present paper addresses the question of whether gender, bullying, school connectedness and self-esteem might operate individually and cumulatively in affecting the psychological well-being of adolescents. Adolescent boys took part significantly more frequently in the bullying of others, reported significantly higher self-esteem and better psychological well-being than girls. Higher frequency of being bullied, lower school connectedness and lower self-esteem were significantly associated with worse psychological well-being in boys as well as in girls, but higher frequency of taking part in bullying others was significantly associated with worse psychological well-being only in girls. Gender, bullying, school connectedness and self-esteem were significant independent predictors of psychological well-being, with self-esteem providing the greatest contribution to the total variance explained in psychological well-being.

Gender differences in bullying, school connectedness, self-esteem and psychological well-being

Present findings of gender differences in bullying can be compared with the results of the HBSC 2001/2002 study, where evidence showed that

in all countries boys reported bullying others more frequently than girls (Currie et al., 2004).

Regarding school connectedness, the present study did not show significant gender differences, a point that differs from the findings of previous studies. The HBSC study (King et al., 1996) revealed that girls were more likely than boys to express positive attitudes toward their school. Contradictory to this, in a survey of American adolescents (Bonny et al., 2000), boys reported significantly higher school connectedness than girls. As can be seen, the relation between school connectedness and gender is inconsistent across studies (Bonny et al., 2000; Whitlock, 2003).

As for gender differences in self-esteem, the present study results are consistent with most of the other studies in this field, with higher self-esteem for boys compared to girls (Bolognini et al., 1996; Modrcin-Talbott et al., 1998; Huurre & Hillevi, 2000; Geckova, 2002; Birndorf et al., 2005). Also, gender differences in psychological well-being were found across countries, with better psychological well-being in boys (Huurre & Hillevi, 2000; Piko & Fitzpatrick, 2001; Tait et al., 2003; Sweeting & West, 2003; Rigby et al., 2007). The same significant gender differences were found in the present sample.

Effects of gender, bullying, school connectedness and self-esteem on psychological well-being

The results of Rigby et al. (2007) show that in Australian adolescents, more frequent peer victimization was significantly associated with relatively poor mental health, and their joint contribution to the total variance in psychological well-being was 17% in boys and 27% in girls (GHQ-28). The analyses of Australian middle adolescents showed that depression, anxiety and self-esteem were significantly associated with psychological well-being. This model accounted for 68% of the variance (Tait et al., 2003). This higher percentage of variance could also be explained by the fact that the depression/anxiety dimension is included in the GHQ-12 itself (Allison et al., 2005; Sarkova et al., 2006). More frequent peer victimization contributed significantly to relatively poor mental health for both sexes in South Australian students, with a closer relation to psychological well-being of girls (Rigby, 2000). Considering gender, bullying, school connectedness and self-esteem as important factors for mental health during adolescence, it is interesting to study their mutual influence on psychological well-being. In present study sample, all these factors were significantly associated with psychological well-being, with the highest contribution coming from self-esteem: 28% of the total variance was explained in psychological well-being with the model of the present study. While the impact of school connectedness on psychological well-being was greater for boys, the impact of self-esteem was greater for girls. These

findings could be explained by the fact that the psychological well-being of adolescent boys might be more influenced by extrinsic factors such as relations to peers, family or school support, while the psychological well-being of adolescent girls might be more influenced by intrinsic factors such as own body image or emotional well-being. From our analysis it can also be concluded that when adolescents feel lower school connectedness and have lower self-esteem, the likelihood of worse psychological well-being is higher than if only one of those variables is affected.

Strengths and limitations

The strength of our study stems from its focus on the joint contribution of several aspects of adolescents school life. The study has some limitations, however. The first one is its cross-sectional design. As in other studies on bullying, another weak point of our study lies in the interpretation of questions on bullying among adolescents, because a clear definition of bullying is missing from the questionnaire. However, the questionnaires were completed in classrooms, where the situation was better controlled and less open to bias than in the case of mailed questionnaires. In addition, using two questions to measure bullying should be extended with various forms of bullying behaviour.

Implication for school health

The study findings lead us to hypothesise on causal relations between higher frequency of taking part in the bullying of others, lower school connectedness, lower self-esteem and worse psychological well-being among adolescents, but to confirm these pathways a future longitudinal study is required. Identifying the combination of factors leading to worse psychological well-being is an important starting point for developing school-based intervention strategies. The study findings recognise self-esteem as an important and potentially modifiable factor of psychological well-being among adolescents and support the significance of its integration as a component of effective school-based mental health promotion strategies for adolescents in preventing or decreasing bullying.

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Chapter 8

Adolescents' psychological well-being and self-esteem in the context of relationships at school

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Abstract

The aim of the study is to explore (1) an association between pupil-peer relationships and psychological well-being and self-esteem, (2) an association between pupil-teacher relationships and psychological well-being and self-esteem, and whether (3) this association varies according to pupils' experience of bullying or being bullied. In 2006, in a sample of 3694 elementary school students in Slovakia (mean age 14.3 years, SD 0.62; 51% girls) psychological well-being was measured using the GHQ-12 (depression/anxiety and social dysfunction) and self-esteem using the RSE (positive and negative self-esteem). Also, the pupil-peer, pupil-teacher relationship and bullying was measured in this study. Linear regression was used to analyse the data. Better pupil-peer relationships and also pupil-teacher relationships are significantly associated statistically with less depression/anxiety and social dysfunction (GHQ-12) as well as with more positive and less negative self-esteem (RSE). All bullying-categories were significantly associated with pupil-peer relationships and the four dependent variables. However, in the categories of aggressive victims and aggressive non-victims, the pupil-teacher relationship is not significantly associated with their psychological well-being and self-esteem. Also, in all subgroups better pupil-peer relationships were significantly associated with less depression/anxiety and social dysfunction as well as with more positive and less negative self-esteem.

Keywords: psychological well-being; self-esteem; relationships at school; adolescents

Introduction

The school environment has shown itself to be an important factor in explaining adolescent behaviour. This study will focus on the ways that relationships at school are connected with psychological well-being and self-esteem. While previous research has focused mainly on the family context, especially during childhood (Barth et al., 2004), the school environment has also been found to play a critical role in adolescents' development, particularly during later years. The relationships and experiences that pupils have at school have been found to influence their development, psychological well-being, self-esteem and social adjustment (Murray & Greenberg, 2000; Barth et al., 2004). The opportunity to experience stable relationships, responsibility, motivation, feelings of safety and positivity, as well as a sense of social relatedness, can have a powerful influence on the mental health of pupils (Bonny et al., 2000).

When students feel that they belong and have supportive relationships with their teachers and classmates, they are motivated to participate more actively in classes and school life (Hughes & Kwok, 2007). They are also less likely to be involved in deviant behaviour such as bullying (Hawkins et al., 1992). In their study, Barth et al. (2004) highlighted the relationship between individual behaviour, the classroom and school. Both of these environmental factors were found to play a role in accounting for children's aggression and peer relations. Furthermore, the classroom environment may have even played a more important role than the school environment. In another study, Konu et al. (2002) presented a conceptual model of well-being in school which consisted of four categories: school conditions, social relationships, means for self-fulfilment and health status. In relation to this conceptual model, they found that social relationships in schools were the second most important factor after self-fulfilment for explaining subjective well-being. These social relationships were found to explain 9.1% of variance for boys and 10.1% for girls in subjective well-being.

Relationships between pupil and teacher as well as peer relationships are the main social relationships in the school environment. These relationships can have an immediate effect on adolescents' social outcomes (Kilpatrick et al., 2000; Wentzel, 2003) as well as shaping their behaviour after they leave school. Supportive relationships with teachers, in addition to feeling safe and connected to the school, can provide pupils with the environmental and social support that is essential for mental health (Glover et al., 2000; Pianta et al., 2002). Relationships with peers have also been found to play a critical role in the development of social skills and feelings that are necessary for personal growth and social adjustment (La Greca & Lopez, 1998). And while peer relationships may have a positive influence on psychosocial development such as good psychological well-being and positive self-esteem, when pupils are not exposed to these relationships

there could be a risk of deviant behaviour such as drug abuse, alcohol and bullying (Patterson et al., 2000; Goldstein et al., 2005).

Previous studies have shown that this risk-taking and deviant behaviour belong to aspects of school life that have a considerable influence on pupils' psychosocial development (Hawker & Boulton, 2000; Bond et al., 2001; Rigby, 2003). In particular, bullying in schools has been recognized as a serious problem in recent years (Roland & Galloway, 2002). Bullying has been defined as a form of aggression in which a student or students physically or verbally assault another student without being provoked. The school environment is a place where bullying often happens, and this has a detrimental effect on both victims and offenders (Ma, 2002). Victims often suffer from a great loss of self-esteem that can linger into adult life (Boulton & Underwood, 1992; Olweus, 1994). This relationship between bullying and self-esteem has been confirmed in other studies (Hawker & Boulton, 2000; O'Moore & Kirkham, 2001). At school, victims were often found to be unpopular among peers as well as their teachers. They were rejected by their classmates and had few friends. On the other hand, bullies reported higher levels of popularity among peers. They were usually leaders and the centre of attention in a group (Perren & Horning, 2005). Other studies have shown that being bullied at school is a source of stress that can potentially have a significant effect on well-being (Slee, 1994; Bond et al., 2001). However, when adolescents feel like they are part of their school, they are less likely to engage in bullying and they report higher levels of emotional well-being (McNeely et al., 2002; Rigby, 2003). Therefore, it appears that there are differences in the psychological and social aspects of pupils who have been bullied and those who have bullied.

As the cross-national HBSC study has shown, violence among adolescents has emerged as a major concern in most countries. However, there are large cross-national differences in the prevalence of bullying behaviour (Currie et al., 2008). There are many reasons for the above-mentioned differences in the prevalence of bullying. One of the reasons could be the diversity of educational systems across countries, such as the educational curriculum and the role of the teachers and pupils in education. Based on this diversity, the associations between relationships in schools and bullying with some aspects of mental health could be expected to differ. In the countries of Central Europe the position of a teacher is still seen as dominant in teacher-pupil relationships. There is a lack of studies oriented on the associations between relationships at school (teacher-pupil and pupil-pupil relationships) and their influence on psychological well-being and self-esteem. The present study, therefore, focuses on the importance of both peer and teacher relationships on psychological well-being and self-esteem among those who are bullied and those who bully.

The aim of the present study is to explore whether (1) there is an association between pupil-peer relationships and psychological well-being and self-esteem, (2) there is an association between pupil-teacher relationships and psychological well-being and self-esteem, and whether (3) this association varies between groups based on pupils' experience of bullying or being bullied.

Methods

Sample

In 2006, a sample of 3725 adolescents was drawn from elementary schools in major Slovak cities representing different parts of the country: Bratislava (approx. 425,000 inhabitants, Western Slovakia), Zilina (approx. 157,000 inhabitants, Northern Slovakia), Kosice (approx. 240,000 inhabitants, Eastern Slovakia) and other smaller cities (approx. 20,000 – 40,000 inhabitants) in the eastern region of Slovakia. The study sample was evenly divided by gender (49% boys, 51% girls) and students ranged from 11 to 17 years old (mean age 14.3 years SD 0.65). From the sample, 24.6% came from Bratislava, 21.3% from Zilina, 32.1% from Kosice and 22% from other eastern region cities. Students under the age of 13 and over 16 were excluded in order to ensure a more homogeneous sample and thus avoid the influence of age extremes. Subsequently, the study sample consisted of 3694 students (mean age 14.3 years SD 0.62). Research assistants administered questionnaires during two regular 45-minute lessons in a complete 90-minute time period on a voluntary and anonymous basis in the absence of teachers. The overall response rate was 93.5%. Non-response was due to illness or other types of school absence.

Measures

Psychological well-being was measured using the two factors 'depression/anxiety' and 'social dysfunction' from the 12-item version of the General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988). The factor 'depression/anxiety' consisted of items 2, 5, 6, 9, 10 and 11 (loss of sleep, under strain, overcoming difficulties, feeling unhappy, loss of self-confidence, and feeling worthless). Items 1, 3, 4, 7, 8 and 12 (concentration, playing a useful part, making decisions, enjoying activities, facing up to problems and feeling happy) were components of the factor 'social dysfunction' (Sarkova et al., 2006). The questions compared how the respondents' present state differed from their usual state. A four-point Likert scale (0, 1, 2, and 3) was used, with scores for each factor ranging from 0 to 18. Higher score indicated poorer psychological well-being.

Cronbach's alpha was found to be 0.81 for the whole scale, 0.84 for the factor 'depression/anxiety' and 0.65 for 'social dysfunction'.

Self-esteem was measured using the two factors 'positive self-esteem' and 'negative self-esteem' from the Rosenberg Self-esteem Scale (RSE) (Rosenberg, 1965). Items 1, 3, 4, 7 and 10 (satisfied with self, having good qualities, equal to others, feeling valuable and a positive attitude) belonged with the factor 'positive self-esteem'. Items 2, 5, 6, 8 and 9 (no good at all, not proud, feeling useless, lack of respect, and feeling a failure) were components of the factor 'negative self-esteem' (Sarkova et al., 2006; Halama, 2008). Each item in both factors had four response options (1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree), and the score for each factor ranged from 5-20. Lower positive self-esteem scores indicated higher self-esteem while lower negative self-esteem scores indicated higher negative self-esteem. Cronbach's alpha for 'positive self-esteem' was 0.78, and for 'negative self-esteem' was 0.60.

The pupil-peer relationships were measured using question number 27 from the Pupils' questionnaire of the OECD Programme for International Student Assessment 2003. The respondents expressed their feelings about their classroom with regard to eight statements 'My classroom is place where….' (1) I don't feel a part of the group; (2) I make friends easily; (3) I feel I belong; (4) I feel awkward and inconvenient; (5) others pupils obviously like me; (6) I feel alone; (7) I am often bored; and (8) I don't like to go. The answer possibilities used a five-point scale from 1="strongly agree" to 5="strongly disagree". The sum score ranged from 8 to 40, with a lower score indicating better relationships. Cronbach's alpha for this questionnaire was 0.83.

The pupil-teacher relationships were measured using fifteen statements in which the respondents expressed opinions about their teachers. The measure was inspired by and adapted from the Inclusion of Other in the Self (IOS) Scale developed by Aron, Aron, and Smollan (1992). Each of these statements (e.g. 'they like me a lot', 'they are very conscionable', 'they usually praise me', 'they help me a lot'.) started with the following question *'When you think about your study in elementary school, how do your teachers behave towards you?'* The answers were on a seven-point scale from 1="strongly agree" to 7="strongly disagree". The sum score ranged from 15 to 105. A lower score reflected better relationships between the pupil and teacher. Cronbach's alpha for this scale was 0.83.

Bullying behaviour was measured by two questions in six bullying categories. This measure was inspired by the questions regarding bullying at schools previously used in the international study into Health Behaviour in School-aged Children (HBSC) (Currie et al. 2008). The respondents answered the questions *"Have you ever been part of following situations?"* and *"Have the following situations ever happened to you?"* in six categories: (1) physical assault, beating; (2) unpermitted borrowing

of things; (3) enforcement of senseless orders; (4) ridicule or cruel nicknames; (5) threats, verbal insults; (6) intimidation. Respondents were then divided into four distinguishable character profiles associated with bullying: normative contrasts (those who neither bully nor are bullied); passive victims (those who are/were bullied); aggressive non-victims (those who bullied); and aggressive victims (those who bullied and who are also bullied) (Schwartz, 2000; Woods & White, 2005).

Statistical analyses

Firstly, linear regression was used in the whole sample to explore the associations between pupil-peer and pupil-teacher relationships and psychological well-being and self-esteem. The two factors of psychological well-being (the depression/anxiety and social dysfunction subscales of GHQ-12) and self-esteem (positive and negative self-esteem subscales of RSE) were used as dependent variables. Next, the whole sample was divided into four groups (normative contrasts, passive victims, aggressive non-victims and aggressive victims) and linear regression was used to explore the associations of pupil-peer and pupil-teacher relationships with the two factors of psychological well-being and two factors of self-esteem in these four groups. Analyses were done using the statistical software package SPSS version 12.1.

Results

Firstly, the associations of pupil-peer and pupil-teacher relationships with the 'depression/anxiety' and 'social dysfunction' factors of the GHQ and the 'positive' and 'negative self-esteem' factors of the RSE in the whole sample were analysed. Both pupil-peer and pupil-teacher relationships had a strong association with all dependent variables ($p \leq .000$) (Table 8.1). The better the relationships pupils reported, the better their psychological well-being, the higher their positive self-esteem and the lower their negative self-esteem.

Table 8.1 The association of the pupil-peer and pupil-teacher relationships with two factors of psychological well-being and self-esteem

	Psychological well-being		Self-esteem	
	depression/ anxiety β	social dysfunction B	positive self-esteem β	Negative self-esteem B
pupil-peer relationships	-.20 ***	-.17***	.25 ***	- .27 ***
pupil-teacher relationships	-.10 ***	-.11 ***	.10 ***	- .08 ***
R^2	6%	6%	8%	9%
F value	89.22	74.60	126.14	132.30

Notes: *** p ≤ .000

Next, the sample was divided into the four groups associated with bullying behaviour (normative contrasts, passive victims, aggressive non- victims and aggressive victims). Table 8.2 shows the number of respondents in each group. The association of pupil-peer and pupil-teacher relationships with both factors of the GHQ and the RSE was explored in separate groups.

Table 8.2 Number of respondents in the groups associated with bullying behaviour

		N	(%)
Bullying behaviour			
	Normative contrasts	1 334	(36.1)
	Passive victims	1 243	(33.6)
	Aggressive non-victims	413	(11.2)
	Aggressive victims	704	(19.1)

Normative contrasts – those who neither bully nor are bullied;
Passive victims – those who were bullied;
Aggressive non-victims – those who bullied;
Aggressive victims – those who bullies and who are also bullied

Normative contrasts

In the normative contrasts group (those who neither bully nor are bullied) all associations between both the pupil-peer and pupil-teacher relationships and the dependent variables were found to be statistically significant (Table 8.3).

Passive victims

The results for the passive victim group (those who are/were bullied) were found to be similar to those of the group of normative contrasts, whereby all dependent variables were statistically associated with the pupil-peer relationships ($p \leq .000$). Similarly, the associations between the pupil-teacher relationships and all dependent variables were found to be significant (Table 8.3).

Aggressive non-victims

In the aggressive non-victims group (those who bully), the associations between pupil-peer relationships and all dependent variables were found to be significant. In addition, the association between pupil-teacher relationships and 'depression/anxiety', 'social dysfunction' and 'negative self-esteem' were significant. However, the positive self-esteem factor of the RSE was not significantly associated with the pupil-teacher relationships in this group. (Table 8.3)

Aggressive victims

For the aggressive victims (those who were bullied and also bully), the associations between the pupil-peer relationships with all dependent variables were found to be significant (Table 8.3). Pupil-teacher relationships were significantly associated with 'social dysfunction' and 'positive self-esteem' but not significantly associated with 'depression/anxiety' and 'negative self-esteem'.

The independent variables (pupil-peer and pupil-teacher relationships) explained between 3% and 16% of the variance of the dependent variables. The highest explained variance (16%) was in positive self-esteem for the group of passive victims. In addition, 11% of explained variance was found in the group of passive victims for negative self-esteem and 10% of explained variance for social dysfunction in the group of aggressive non-victims (Table 8.3).

Table 8.3 Linear regression: the pupil-peer and pupil-teacher relations on two factors of psychological well-being and self-esteem in four profiles associated with bullying

	Psychological well-being		Self-esteem	
	'depression/ anxiety'	'social dysfunction'	'positive self-esteem'	'negative self-esteem'
	β	β	β	β
	p	p	p	p
Normative contrasts				
pupil-peer relationships	-.17 .00	-.13 .00	.19 .00	-.27 .00
pupil-teacher relationships	-.09 .00	-.11 .01	.12 .00	-.06 .05
R^2	5%	3%	6%	8%
F-value	25.43	15.83	34.50	48.84
Passive victims				
pupil-peer relationships	-.24 .00	-.22 .00	.32 .00	-.28 .00
pupil-teacher relationships	-.10 .00	-.13 .00	.17 .00	-.12 .00
R^2	8%	8%	16%	11%
F-value	43.67	41.10	89.30	59.88
Aggressive non-victims				
pupil-peer relationships	-.15 .00	-.15 .01	.15 .01	-.14 .01
pupil-teacher relationships	-.19 .00	-.24 .00	.10 .29	-.15 .01
R^2	6%	10%	3%	5%
F-value	11.44	16.64	4.52	8.24
Aggressive victims				
pupil-peer relationships	-.15 .01	-.15 .01	.19 .00	-.23 .00
pupil-teacher relationships	-.04 .41	-.12 .01	.09 .01	.01 .98
R^2	3%	4%	5%	5%
F-value	6.88	10.56	12.70	13.92

Notes: *** $p \leq .000$; ** $p \leq .01$; * $p \leq .05$

Discussion

This study aimed to explore the association of pupil-peer and pupil-teacher relationships with regard to psychological well-being and self-esteem in the context of bullying. The study found that relationships in school are strongly associated with psychological well-being and self-esteem among adolescents. In particular, the study found that for the whole sample, pupil-peer and pupil-teacher relationships are statistically significant regarding depression/anxiety and social dysfunction of psychological well-being as well as for positive and negative self-esteem. This supports the findings of previous studies that have shown that pupils who are satisfied with their relationships at school report higher levels of emotional well-being (Rigby, 2003; McNeely et al., 2002). Those who reported better relationships had better psychological well-being, higher positive self-esteem and lower negative self-esteem.

The classification of the sample into four categories associated with bullying behaviour (normative contrasts, passive victims, aggressive non-victims and aggressive victims) allowed us to explore further the association between pupil-peer and pupil-teacher relationships and the dependent variables. The findings showed that for all groups there were significant associations of pupil-peer relationships with all of the studied factors. However, it appears that for pupils that bully the relationship they have with teachers does not play an important role in their psychological well-being and self-esteem, because in this group no significant associations were found between the mentioned variables. Previous studies have shown that bullies like to feel dominant and therefore have problems with accepting the authority of teachers (Olweus, 1994; Kaltiala-Heino et al., 2000). These studies, in line with other findings (Rigby & Slee 1993; Ma 2002), also suggest that bullies are not more anxious and do not experience the feelings of low self-esteem in comparison with children who do not bully. On the other hand, several studies have found that pupils who enjoy a close and supportive relationship with their teacher are more engaged in positive activities in the classroom, accept teachers' directions and cope better with stress (Hughes & Kwok 2007, Little & Kobak 2003). Based on these findings it could be assumed that the quality of pupils' relationships with their teachers has important implications for their behavioural adjustment in the school environment and consequently on their well-being and self-esteem (Meehan et al., 2003). However, the results of the present study show that in the group of the aggressive non-victims and aggressive victims peer relationships seem to play an important role. Peer relationships can have an important influence with regard to bullying behaviour, because they can influence the occurrences of bullying. Low popularity and a lack of friends have been identified as

risk factors for victimization (Perren & Hornung 2005). Similarly, peers in the classrooms provide the audience that bullies require. Bullies are caught in a vicious circle in which they try to make friends to gain respect and admiration from their peers through bullying behaviour. Thus, this study has indicated that the school context has a major influence on pupils' general subjective *well-being*. The finding that the teacher-pupil relationships was not associated, as was expected in the aims of present study, according to the position of the teachers at schools in Central Europe gives us a signal of potential changes taking place. The authority of teachers seems to be in decline and offers an image of teachers' status within society as a whole.

Strengths and limitations

This study has some strengths and limitations. The strength of the study was that the research sample covered different regions of Slovakia, a Central European country with the target group of adolescents, giving us important information about the prevalence of bullying in the school environment. A limitation was that the cross-sectional study design did not give us the opportunity to study causal mechanisms; a longitudinal study would have provided greater insight into this issue.

Implications for prevention

Several findings from the study could be used as the basis for preparation of more effective anti-bullying programmes. Given the differences found in the connections of pupil –-teacher relationships with the well-being and self-esteem between those who bullied and those who were bullied, it seem that the school environment can play an important role in implementing anti-bullying prevention strategies. As such, programmes should be oriented towards enhancing relationships between pupils and teachers. In particular, a positive classroom environment provides opportunities for teachers to receive information about bullying as well as to identify victims and bullies among pupils.

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Chapter 9

Conclusion, general discussion and implications

Psychological well-being and self-esteem, which are mutually connected and influence each other, are essential aspects of mental health and are associated with physical, mental and social developmental factors. This study focused on the adolescence period to explore the associations between the study variables—psychological well-being and self-esteem—and several factors such as age, gender, assertiveness, school connectedness, and relationships and bullying in the school environment. The final chapter provides a summary of the main findings, a discussion, the study's strengths and limitations and implications for future research and practice.

9.1 Main findings

Factor structure of GHQ-12 and RSE

The first research question analyzed the factor structure of the General Health Questionnaire-12 (GHQ-12) and the Rosenberg Self-Esteem Scale (RSE) in Hungarian and Slovak early adolescents aged 11.5 years. In both samples two factors in the GHQ-12 were identified, one of which can be labelled as depression/anxiety and the other as social dysfunction. Similarly, the RSE appears to be an instrument with a two-factor structure, with the subscales negative self-esteem and positive self-esteem in both samples.

Self-esteem among Slovak and Hungarian adolescents

The second research question addressed the substantial differences in self-esteem among boys and girls in adolescence from 22 countries in Eastern and Central Europe, making a comparison of how large these differences are and looking at the association of gender, cultural background and two factors of psychological well-being (depression/anxiety and social dysfunction) with positive, negative and overall self-esteem. Among other issues, this research question focused on the positive correlations between psychological well-being and self-esteem. Large differences

were found between Slovakia and Serbia, Slovenia and Croatia in overall, positive and negative self-esteem among boys and girls, with exception of Croatian boys in positive self-esteem. Large differences were also found between Slovak and Austrian adolescents in negative self-esteem and between Slovak and Hungarian girls in positive self-esteem. The findings from linear regression indicate that cultural background and two factors, depression/anxiety and social dysfunction, of psychological well-being significantly associate with self-esteem.

Development of psychological well-being and self-esteem from age 11.5 to 15 and its predictors

The third research question was based on a longitudinal school-based study and focused on changes over time through answering the following questions: 1. Is there a difference in the magnitude and direction (improved, stable or deteriorated) of change in the domains of psychological well-being and self-esteem between the ages of 11.5 and 15 between boys and girls? 2. Are gender and parental education predictors of psychological well-being and self-esteem at the age of 15?

Both genders significantly deteriorated in depression/anxiety, with a substantially higher change over time among girls compared to boys and a significant improvement in overall self-esteem and in negative self-esteem. Only girls deteriorated significantly in overall psychological well-being. Both gender and educational level of the mother were the strongest factors associated with depression/anxiety at the age of 15, adjusted for the baseline (depression/anxiety) scores.

Assertiveness, psychological well-being and self-esteem in adolescents

Associations between the distress and performance dimensions of assertiveness and adolescents' psychological well-being (GHQ-12) and self-esteem (RSE) were explored while controlling for gender. Firstly, the relationship between the levels of anxiety felt in assertive situations (the distress dimension) and the frequency of engagement in these situations (the performance dimension) was examined. Secondly, the association between the assertive dimension and psychological well-being and self-esteem was explored. Thirdly, the influence of the distress dimension on psychological well-being and self-esteem, controlling for the performance dimension, was explored.

Assertiveness was found to play an important role in the well-being and self-esteem of adolescents. Findings showed that (1) the more anxious respondents felt in assertive situations, the less frequently they engaged in these situations; and that (2) both dimensions of assertiveness predicted psychological well-being and self-esteem. However, the negative effect of the distress dimension on psychological well-being and self-esteem

did not change after controlling for the performance dimension. The frequency of engagement in these situations did not influence the levels of anxiety felt in assertive situations. Nonetheless, the results showed that increasing assertiveness among adolescents' outcomes has significant positive consequences for psychological well-being and self-esteem.

Contribution of gender, bullying, school connectedness and self-esteem to psychological well-being

The fifth research question focused on gender differences in bullying, school connectedness, self-esteem and psychological well-being and their interrelations. Also their joint contribution to psychological well-being in adolescents was analyzed. All studied variables—gender, bullying, school connectedness and self-esteem—were found to be significant independent predictors of psychological well-being. Findings showed that boys more frequently took part in bullying others, had higher self-esteem and better psychological well-being. On the contrary, in girls a higher frequency of taking part in bullying others was significantly associated with a worse psychological well-being. In addition, higher frequency of being bullied, lower school connectedness and lower self-esteem were significantly associated with a worse psychological well-being in both sexes. Self-esteem was found to be the most important and potentially modifiable factor contributing to the psychological well-being of the respondents.

Adolescents' psychological well-being and self-esteem in the context of relationships at school

Research question number six explored whether (1) there is an association between pupil-peer relationships and psychological well-being and self-esteem, (2) there is an association between pupil - teacher relationships and psychological well-being and self-esteem, and (3) whether this association varies according to pupils' experience of bullying or being bullied. Findings show that relationships in the school context are strongly associated with psychological well-being and self-esteem among adolescents. In particular, for the whole sample, depression/anxiety and social dysfunction of psychological well-being as well as positive and negative self-esteem are statistically significant regarding pupil-peer and pupil-teacher relationships. Those who reported better relationships had better psychological well-being, higher positive self-esteem and lower negative self-esteem. The classification of the sample into four categories associated with bullying behaviour (normative contrasts, passive victims, aggressive non-victims and aggressive victims) allowed the association between pupil-peer and pupil-teacher relationships and the dependent variables to be explored further. The findings showed that pupil-peer relationships were significantly associated with all of the studied factors

among all groups. Thus, it appears that pupil-teacher relationships do not play an important role in psychological well-being and self-esteem for pupils that bully.

9.2 Discussion of the main findings

The main findings will be discussed in the framework of the general aims formulated in Chapter 1. These aims were 1) to unravel the factor structure of measures for psychological well-being and self-esteem; 2) to explore determinants of psychological well-being and self-esteem at a certain moment in adolescence; and 3) to explore the change over time of psychological well-being and self-esteem.

9.2.1 The factor structure of measures for psychological well-being and self-esteem

The reliability and factor structure of the General Health Questionnaire-12 (GHQ-12) and the Rosenberg Self-Esteem Scale (RSE) were evaluated in various languages and samples. Both of these measures come from a valid theoretical background and are high quality tools measuring specific aspects of mental health. However, the factor structures of both measures are not clear and there is an ongoing discussion about their one, two- or three-factor solutions. The results of the study presented in Chapter 3 showed the existence of two factors (depression/anxiety and social dysfunction) in both the Hungarian and Slovak version of the GHQ-12. A similar two-factor solution was found in an Italian study among young males (Politi et al., 1994), in 10 centers of a WHO study (Werneke et al., 2000), in an Iranian study among young people (Montazeri et al., 2003, Gao et al., 2004) and in a French study among elderly people (Salama-Younes et al., 2009). Also, there are studies in which the two factors of GHQ-12 were used to examine psychological well-being (Allison et al., 2005; Sarkova et al., 2006). It is important to mention that multi- or three-factor solutions have been found in recent studies (Werneke, 2000; French & Tait, 2004; Gao et al., 2004; del Pilar Sánchez-López & Dresch, 2008).

At the same time the factor analysis of the RSE in the Chapter 3 showed two-factor solutions in both the Hungarian and Slovak samples. While psychometric studies generally supported the one-factor solution of this scale (Corwyn, 2000; Mimura & Griffiths, 2007), the present study appears to be in line with a significant number of studies showing evidence of a two-factor construct (Marsh, 1996; Schmitt & Allik, 2005; Roth et al., 2008; Halama, 2008). Using two factors of the RSE seems to be adequate for measuring an association between self-esteem and other aspects of health (Sarkova et al., 2006; Gajdosova, 2007; Veselska et al., 2009). The two-factor solutions for both instruments enable researchers to

have a closer look into their data and to show associations which are not visible when the instruments are used as a whole.

9.2.2 Determinants of psychological well-being and self-esteem in adolescence

The present study has explored selected determinants of psychological well-being and self-esteem, such as gender, cultural background and school environment. As findings in particular chapters have shown, all mentioned variables are statistically significant determinants of psychological well-being and self-esteem in adolescence.

The association of gender differences, as a biologically as well as a socially based category, with various aspects of adolescent mental health are well-known and have been presented in several studies (Currie et al., 2004; Mittendorfer-Rutz, 2006). At the same time a number of studies have shown significant gender differences in well-being and self-esteem during this period of life (Bolognini et al, 1996; Modrcin-Talbott et al., 1998; Huurre & Hillevi, 2000; Piko & Fitzpatrick, 2001; Geckova, 2002; Tait et al., 2003; Sweeting & West, 2003; Birndorf et al., 2005). However, findings about gender differences in the present study are not that clear. Significant gender differences were noted in taking part in bullying others, with higher participation by boys in Chapter 7. In addition, findings from the mentioned chapter show that boys also reported significantly higher self-esteem and better psychological well-being than girls. On the other hand, only weak associations were found regarding gender differences between factors of psychological well-being and self-esteem and assertive behaviour in 15-year olds (Chapter 6). This indicates only small differences between boys and girls and the way assertive behaviour associates with psychological well-being and self-esteem among these groups. At the same time, no significant gender differences were found in the frequency of being bullied among 15-year old adolescents as well as in the frequency of bullying at the same age.

In a different sample however, it has been shown that there are differences between Slovakia and other Central European countries regarding self-esteem and that these differences were not trivial in size. At the same time, the findings from the present study indicate that cultural background (Slovak vs. Hungarian) significantly associates with self-esteem. Significant differences between Slovak and Hungarian adolescents could be a consequence of the tool used, which might measure a slightly different reality in different cultural settings. However, there are some international comparative studies which, like this study, have confirmed that although Slovak adolescents have better psychological well-being in comparison with Hungarians, Hungarian adolescents actually have higher self-esteem than Slovaks (Currie et al., 2004; 2008).

Exploring only the gender and cultural differences on psychological well-being and self-esteem in school-aged adolescence is insufficient.

Therefore the research question also focused on a different important determinant of adolescents' mental health—the school environment. Our findings are in line with numerous studies which have shown that school connectedness, relationships with peers and also with teachers, as well as risk behaviour at school play a significant role in pupils' psychological well-being and self-esteem (Marinoni et al., 1997; Hawker & Boulton, 2000; Ma, 2002; Rigby, 2003). Generally speaking, our findings, like other studies, confirmed that when students feel that they belong and have supportive and fair relationships with their teachers and classmates and do not bully, they have better psychological well-being and higher self-esteem. They are also less likely to participate in risk behaviour such as bullying (Hawkins et al., 1992; Hughes & Kwok, 2007). A more detailed view (Chapter 8) on the relationships between pupils who bully and those who do not bully and their relationships with teachers have shown significant differences between these two groups regarding psychological well-being and self-esteem. Findings have indicated that for all pupils, regardless of the participation or experiences with bullying, significant associations existed between pupil-peer relationships and all of the studied factors. On the other hand, in the aggressive victims and aggressive non-victims group the relationship with teachers does not play a significant role in adolescents' psychological well-being and self-esteem. Therefore, the association between risk behaviour and psychological well-being and self-esteem does not seem to be so simple and is actually more complicated than was hypothesised. It could be assumed, therefore, that there are more parts of the mental health puzzle at school which have yet to be unravelled.

9.2.3 Psychological well-being and self-esteem over time

The present study also examined the changes in psychological well-being and self-esteem in a group of adolescents over time at an intra-individual level and the findings have shown there was significant difference between 11.5-year-old boys and also girls in both variables. Larger changes over time were found in terms of deterioration in the depression/anxiety domain of psychological well-being in girls compared to boys, thus supporting evidence of increased gender difference as age increased from 11.5 to 15. Similar trends were noted by Sweeting and West (2003) and Tait et al. (2003). Findings of proportionally larger changes over time among girls, who deteriorated, and boys, who improved in the depression/anxiety domain of psychological well-being, raise questions regarding what is behind these changes and what factors trigger these changes. Firstly, for boys physical and maturational changes are generally regarded as positive, but for girls they are associated with both physical and psychological problems. Secondly, from a mental health perspective,

early to middle adolescence is recognised as the time of emergence of an excess of internalising disorders in girls (depression and anxiety), in comparison with childhood, where boys predominated as a result of the excess in the diagnostic categories of behavioural and attention disorders (Patton & Viner, 2007).

In self-esteem, both genders improved significantly in overall self-esteem and in negative self-esteem. The present findings of changes over time, in terms of improvement, on overall self-esteem and on negative self-esteem in both genders can be compared with studies suggesting that self-esteem changes during adolescence (Bolognini et al., 1996; Baldwin & Hoffmann, 2002; Birndorf et al., 2005).

9.3 Strengths and limitations of the study

The study has strengths and limitations. Two factors of psychological well-being as well as self-esteem were analysed; this enabled a deeper understanding of the associations between all study variables. As was found in a study by Veselska et al. (2009), by using the two factors of self-esteem it was possible to recognise that health compromising behaviour (smoking and cannabis use) was connected with negative but not with positive self-esteem. Furthermore, follow-up data were used which allowed us to asses psychological well-being and self-esteem over time. Knowledge about longitudinal changes in psychological well-being and/or self-esteem during adolescence remains limited, since the majority of the previous studies were cross-sectional or because results from longitudinal observational studies were, to our knowledge, restricted to behaviour in 'clinical' settings. Furthermore, studies targeted on 'healthy' adolescents evaluated changes in psychological status from childhood to early adolescence, from late adolescence to young adulthood, or focused on a separate adolescence sub-stage or were not sampled from an appropriate age range. Data from two nations (Slovak and Hungarian) were used which enabled us to compare our data in-depth from the perspective of a country-specific European context. Aside from similarities or differences between these two countries, it is necessary to keep in mind the potential influence of cultural background on the explored variables and their associations, a fact that may partially explain the contrasting findings in the literature.

A limitation is the cross-sectional design of some of the previous chapters, which limited a deeper understanding of the relevant pathways. A longitudinal study, especially on bullying, would have provided greater insight into the issue. Another limitation is missing information from the teachers and parents involved in school process. In addition, school and family background information could contribute to the explanation of

the associations. A better understanding of country differences might provide a more detailed insight into the relevance of the sociodemographic background across the involved countries.

9.4 Implications of the study

9.4.1 Implications for future research

The findings offer several possibilities for future research focusing mainly on the factors of psychological well-being (depression/anxiety and social dysfunction) and self-esteem (positive and negative self-esteem) with the school environment. This two-factor solution of both instruments enables researchers to have a closer look into their data and to reveal associations which are not visible when the instruments are used as a whole, also in the school environment. The model of well-being at school is based on four categories: school conditions (having), social relationships (loving), means for self-fulfilment (being) and health status (health) and could be used for a better understanding while at the same time bringing more precise information about pupils' well-being at school. The longitudinal design of future research could follow not only specific variables representing aspects of mental health or various aspects of the school environment, but also changes in these aspects over time, which could shed more light on the causal pathway of variables influencing the mental health aspects of the pupils included. Such national findings could be used for comparison within the framework of international studies such as HBSC and also offers the possibility of measuring the effects of intervention, focusing on increasing mental health and diminishing bullying.

9.4.2 Implications for practice

The present findings could be framed within the results of Slovak adolescents in the international HBSC study. The HBSC study has shown that Slovak adolescents have a high level of well-being and life satisfaction. On the other hand, school connectedness and the peer relationships at school of Slovak adolescents were reported as one of the worst in comparison with other countries. These findings are in line with the results of our study, which underlines the importance of the school environment and school relationships. In regard to findings that indicate that better pupil-peer and pupil-teacher relationships are significantly associated statistically with better psychological well-being as well as higher self-esteem, such knowledge could be the starting point for improvement in the school environment, the climate, and relationships at school while at the same time for the reduction of risk behaviour such

as bullying through the enhancement of social skills. Building the space for open communication between pupils and teacher and their mutual confidence could help with earlier recognition of bullying as well as the prevention of such risk behaviour. Since a school is a complex structure, various ways of implications for practice could be designed. Programmes focusing on training for better communication and cooperation, increased empathy and assertiveness skills for students could contribute to a friendlier climate where programmes aiming at a reduction in risk behaviour are more effective. At the same time, intervention programmes for teachers focused on training their social skills and enhancing their mental health could also have an indirect effect on school connectedness and on pupils. Finally, programmes oriented on making a place in the school shared by teachers and students could offer more opportunities for open communication and could contribute to reducing possible problems and improving of community life of a school. However, it is important to keep in mind that such interventions may be effective in practice only if the whole community, including both schools and families, is involved.

9.5 Conclusion

The focus of this study was to examine the associations between psychological well-being and self-esteem and several factors such as age, gender, assertiveness, school connectedness, relationships and bullying in the school environment of Slovak adolescents. The present findings show significant associations between these variables and explore these associations. At the same time, the current study examines the differences on psychological well-being and self-esteem of Slovak adolescents in comparison with Hungarian adolescents. The already existing knowledge about the associations between well-being and self-esteem and the school environment from various aspects, particularly pupil-peer and pupil-teachers relationships, school connectedness and bullying behaviour, was extended.

Interest in this topic and in the relationship between school and mental health has increased in recent years. Continuing socioeconomic changes, political events such as the expansion of the European Union and changes in the positions and possibilities of adolescents related with this expansion, offer new issues and avenues of research in this field for the future.

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Summary

The interest in adolescence as a transitional developmental stage characterized by many important biological, psychological, and social changes is never-ending. Studies into adolescents in the environment of their school, peer and family with regard to constantly socio-economical changes bring new findings about this period of life. In addition, mental health, its components and possible determinants in adolescence are always an important topic for researchers in this field. Therefore, the present thesis is focusing on mental health, in particular on psychological well-being and self-esteem among Slovak adolescents.

Chapter 1 provides an overall introduction in the adolescence period relevant for our study. Firstly, individual parts of the present study are focused on the constructs of psychological well-being and self-esteem as aspects of mental health. Their protective and risk factors, changes over time and countries' differences in adolescence are described in this part. Secondly, mental health in the school context is described. Particularly, the model of well-being in the school environment, perceptions of school belonging/school connectedness and social relationships, and bullying as a form of violence in the school context are introduced in this part of thesis.

At the end of the first chapter the following general aims of the present study are mentioned: (1) to unravel the factor structure of measures for psychological well-being and self-esteem; (2) to explore determinants of psychological well-being and self-esteem at a certain moment in their adolescence; (3) to explore change over time of psychological well-being and self-esteem. Also the six research questions of this thesis and the overall outline are described.

The background of the study, participants, study variables and statistical analyses used in this thesis are described in **Chapter 2**. Four samples are included to the present study. Three samples consist of Slovak respondents. The first one comprises of 519 adolescents with mean age 11.5 years and same adolescents with mean age 14.9 in the follow-up measure. The second sample is composed of 1,023 Slovak adolescents with mean age 11.5 and 3,694 adolescents with mean age 14.3 years are belonged to the third sample. The Hungarian respondents consisted of 431 adolescents with mean age 11.5 years are included to fourth sample. Slovak data were collected on September 1999, February 2000, and June 2000(first sample), April-June 2003 (second sample) and on September – December 2006 (third sample). Hungarian data were collected on October 2000, January and June 2001. Furthermore measures are described.

Chapter 3 deals with psychometric characteristics of the key variables – psychological well-being (GHQ-12) and self-esteem (RSE) - in Hungarian and Slovak early adolescents with regard to their factor structure (research question 1). In both samples, the principal component analyses support the two-factor solution for GHQ-12 with subscales "depression/anxiety" and "social dysfunction" and the two-factor solution for RSE as well with subscales "negative self-esteem" and "positive self-esteem". The reliability of the subscales is good.

Chapter 4 explores differences in positive, negative and overall self-esteem of adolescents between twenty two Central-Eastern European countries stratified by gender. In addition, the association between gender, cultural background, depression/anxiety and social dysfunction and self-esteem of young Hungarian and Slovak boys and girls in adolescence is explored (research question 2). The significant differences between Slovakia and other Central-European countries are confirmed. Also, cultural background and both factors, depression/anxiety and social dysfunction of psychological well-being significantly associate with self-esteem.

Chapter 5 deals with changes in psychological well-being and self-esteem between the age of 11.5 and 15. The role of gender and parental education as determinants of psychological well-being and self-esteem at the age of 15 is also explored (research question 3). Mean scores on depression/anxiety; overall self-esteem and negative self-esteem deteriorate significantly over time for both boys and girls. Besides this mean deterioration, proportions of boys and girls, who improved, deteriorated or remained stable in psychological well-being and self-esteem, are found on an intra-individual level.

The associations between two dimensions of assertiveness (distress and performance) and depression/anxiety and social dysfunction factors of psychological well-being and positive and negative self-esteem factors of self-esteem of adolescents are studied in **Chapter 6** (research question 4). At the same time, the influence of the distress dimension on dependent variables controlling for the performance dimension is explored. Findings show that the more anxious respondents felt in assertive situations, the less frequently they engage in these situations; and that both dimensions of assertiveness predicted psychological well-being and self-esteem. However, the negative effect of the distress dimension on psychological well-being and self-esteem controlled for the performance dimension do not increase.

Chapter 7 analyses gender differences in bullying, school connectedness, self-esteem and psychological well-being (research question 5). Their interrelations and the joint contribution of gender, bullying, school connectedness and self-esteem to psychological well-being in adolescents are explored. Boys have significantly more frequently

taken part in bullying others; report significantly higher self-esteem and better psychological well-being than girls. At the same time, higher frequency of being bullied, lower school connectedness and lower self-esteem are significantly associated with worse psychological well-being in boys as well as in girls, but higher frequency of taking part in bullying others is significantly associated with worse psychological well-being only in girls. Gender, bullying, school connectedness and self-esteem are significant independent predictors of psychological well-being, with the highest contribution of self-esteem to the total variance explained in psychological well-being.

Chapter 8 shows the significance of the school relationships in adolescents' psychological well-being and self-esteem. Significant associations between pupil-peer as well pupil-teacher relationships and psychological well-being and self-esteem are found. Particularly, better pupil-peer and also pupil-teacher relationships are statistically significant associated with better psychological well-being and higher self-esteem. The respondents are divided into four categories associated with bullying: normative contrasts (those who neither bully nor are bullied); passive victims (those who are/were bullied); aggressive non-victims (those who bullied); and aggressive victims (those who bullied and who are also bullied). All four bullying-categories are significantly associated with pupil-peer relationships. The categories of normative contrasts and passive victims are significantly associated with both factors of psychological well-being and both factors of self-esteem. However, in the categories of aggressive victims and aggressive non-victims the pupil-teacher relationship is not significantly associated with their psychological well-being and self-esteem.

In **Chapter 9**, the main findings, several strengths and limitations of the present study are discussed, and implications for future research and practice are formulated. The present thesis underlines the importance of the use of both factors – depression/anxiety and social dysfunction - of psychological well-being and positive self-esteem and negative self-esteem in association with the other study variables. Particularly, cultural background, gender, social skills as well as school environment, all of these are found as significant determinants of psychological well-being and self-esteem in adolescence. In addition, a more detailed insight into the school context and its influence on the mentioned variables could generate new interesting findings which could be used as a background for future studies.

Samenvatting

De belangstelling naar de adolescentie als overgangsfase die gekenmerkt is door veel belangrijke biologische, psychologische en sociale veranderingen is oneindig. Onderzoek naar adolescenten in de omgeving van hun school, hun peers en familie met betrekking tot voortdurende sociaal-economische veranderingen leiden tot nieuwe bevindingen over deze periode van het leven. Bovendien is geestelijke gezondheid, de componenten en de mogelijke determinanten ervan in de adolescentie altijd een belangrijk onderwerp voor onderzoekers op dit gebied. Daarom is dit proefschrift gericht op de geestelijke gezondheid, met name op het psychologisch welzijn en gevoel van eigenwaarde onder Slowaakse adolescenten.

In **Hoofdstuk 1** wordt een algemene inleiding gegeven in de adolescentieperiode die relevant is voor ons onderzoek. Ten eerste zijn de individuele onderdelen van het huidige onderzoek gericht op de constructen van psychisch welbevinden (psychological well-being) en gevoel van eigenwaarde (self-esteem) als aspecten van de geestelijke gezondheid. Hun beschermende en riskante bijdragen, veranderingen in de tijd en verschillen tussen landen in adolescentie zijn beschreven in dit deel. Ten tweede is de geestelijke gezondheid in de schoolcontext beschreven. Met name het model van welzijn in de schoolomgeving, de perceptie van schoolverbondenheid (school connectedness) en sociale relaties, en pesten als een vorm van geweld in de schoolcontext zijn ingevoerd in dit deel van het proefschrift. Aan het einde van het eerste hoofdstuk worden de volgende algemene doelstellingen van de huidige studie worden genoemd: (1) de factorstructuur te ontrafelen van de maten psychologisch welzijn en gevoel van eigenwaarde, (2) de determinanten te onderzoeken van psychische welzijn en eigenwaarde op een bepaald moment in de adolescentie; (3) de verandering in de tijd van psychisch welbevinden en gevoel van eigenwaarde te onderzoeken. Ook de zes onderzoeksvragen van dit proefschrift en de algemene opzet worden beschreven.

De achtergrond van het onderzoek, de deelnemers, de studie variabelen en statistische analyses die in dit proefschrift zijn gedaan, zijn beschreven in **Hoofdstuk 2**. Vier steekproeven zijn opgenomen in het huidige onderzoek. Drie steekproeven bestaan uit Slowaakse respondenten. De eerste bestaat uit 519 adolescenten met een gemiddelde leeftijd van 11.5 jaar en adolescenten met dezelfde gemiddelde leeftijd van 14.9 jaar tijdens de follow-up. De tweede steekproef is samengesteld uit 1.023 Slowaakse adolescenten met een gemiddelde leeftijd van 11.5 jaar

en de derde steekproef uit 3694 adolescenten met een gemiddelde leeftijd van 14.3 jaar. De Hongaarse respondenten, de vierde steekproef, bestond uit 431 adolescenten met een gemiddelde leeftijd van 11.5 jaar. Slowaakse gegevens werden verzameld in september 1999, februari 2000 en juni 2000 (eerste steekproef), van april tot juni 2003 (tweede steekproef) en van september tot december 2006 (derde steekproef). Hongaarse gegevens werden verzameld over oktober 2000, januari en juni 2001. Verder zijn de meetinstrumenten beschreven.

In **Hoofdstuk 3** worden de psychometrische kenmerken behandeld van de belangrijkste variabelen - psychisch welbevinden (GHQ-12) en gevoel van eigenwaarde (RSE) – onder jonge Hongaarse en Slowaakse adolescenten met betrekking tot hun factorstructuur (Onderzoeksvraag 1). In beide steekproeven, ondersteunde de principale componenten analyse de twee-factor oplossing voor de GHQ-12 met subschalen "Depressie / angst" en "sociale disfunctie" en ook de twee-factor oplossing voor RSE met de subschalen "negatief gevoel van eigenwaarde" en "positief gevoel van eigenwaarde". De betrouwbaarheid van de subschalen is goed.

In **Hoofdstuk 4** worden de verschillen onderzocht tussen positief, negatief en algemeen gevoel van eigenwaarde bij adolescenten in tweeëntwintig Centraal-Oost-Europese landen gestratificeerd naar geslacht. Bovendien wordt de associatie onderzocht tussen sekse, culturele achtergrond, depressie / angst en sociale disfunctie en het gevoel van eigenwaarde van jonge Hongaarse en Slowaakse adolescenten (Onderzoeksvraag 2). Er werden aanzienlijke verschillen tussen Slowakije en andere Centraal-Europese landen gevonden. Ook bleken culturele achtergrond en de beide factoren, depressie / angst en sociale disfunctie van psychisch welbevinden, significant geassocieerd met het gevoel van eigenwaarde.

In **Hoofdstuk 5** wordt ingegaan op veranderingen in psychisch welbevinden en gevoel van eigenwaarde van 11,5 tot 15 jaar. De rol van geslacht en opleiding van de ouders als determinanten van psychisch welbevinden en gevoel van eigenwaarde op de leeftijd van 15 is ook onderzocht (Onderzoeksvraag 3). De gemiddelde scores op depressie / angst, het algemene gevoel van eigenwaarde en negatieve gevoel van eigenwaarde verslechteren in de tijd voor zowel jongens als meisjes. Naast deze gemiddelde achteruitgang, zijn er proporties van de jongens en meisjes, die verbeterd, verslechterd of gelijk gebleven zijn met betrekking tot psychologisch welzijn en gevoel van eigenwaarde te vinden op een intra-individueel niveau.

De associaties tussen de twee dimensies van assertiviteit (gespannenheid - distress en mate van blootstelling - performance) en depressie / angst en sociale disfunctie factoren van psychologische welzijn en de positieve en negatieve factoren van het gevoel van eigenwaarde van jongeren worden bestudeerd in **Hoofdstuk 6** (Onderzoeksvraag

4). Tegelijkertijd is de invloed van de gespannenheidsdimensie op de afhankelijke variabelen gecontroleerd voor de mate van blootstelling onderzocht. Onze bevindingen tonen aan dat hoe angstiger de respondenten zich voelen in assertieve situaties, hoe minder vaak zij zich begeven in deze situaties; en dat beide dimensies van assertiviteit psychisch welbevinden en het gevoel van eigenwaarde voorspellen. Echter, het negatieve effect van de gespannenheidsdimensie op psychisch welbevinden en gevoel van eigenwaarde gecontroleerd voor de mate van blootstelling neemt niet toe.

In **Hoofdstuk 7** worden analyses sekseverschillen met betrekking tot pesten, schoolverbondenheid, het gevoel van eigenwaarde en psychologisch welzijn (Onderzoeksvraag 5). Hun onderlinge relaties en de gezamenlijke bijdrage van geslacht, pesten, schoolverbondenheid en het gevoel van eigenwaarde aan psychisch welbevinden bij adolescenten worden verkend. Jongens hebben significant vaker deelgenomen aan pesten van anderen; melden een beduidend groter gevoel van eigenwaarde en een beter psychologisch welbevinden dan meisjes. Tegelijkertijd, zijn een hogere frequentie van gepest worden, een lagere gevoel van schoolverbondenheid en een lager gevoel van eigenwaarde significant geassocieerd met een slechter psychische welzijn zowel bij jongens als bij meisjes, maar een hogere frequentie van deelnemen aan pesten van anderen is alleen bij meisjes significant geassocieerd met een slechter psychische welbevinden. Geslacht, pesten, schoolverbondenheid en het gevoel van eigenwaarde zijn belangrijke onafhankelijke voorspellers van psychisch welbevinden, met de hoogste bijdrage van het gevoel van eigenwaarde van de totale verklaarde variantie van psychisch welbevinden.

In **Hoofdstuk 8** wordt ingegaan op de betekenis van de schoolrelaties voor het psychologisch welzijn en gevoel van eigenwaarde van adolescenten. Significante associaties tussen leerling-medeleerling en ook tussen leerling-leerkracht relaties en het psychologisch welzijn en gevoel van eigenwaarde werden gevonden. Vooral een betere leerling-medeleerling en ook leerling-leerkracht-relaties zijn statistisch significant geassocieerd met beter psychisch welbevinden en een hogere gevoel van eigenwaarde. De respondenten zijn onderverdeeld in vier categorieën met betrekking tot pesten: normatieve contrasten (degenen die niet pesten, noch zijn gepest); passieve slachtoffers (die zijn / waren gepest); agressieve non-slachtoffers (degenen die pestten) en agressieve slachtoffers (mensen die pestten en die ook werden gepest). Alle vier pesten-categorieën zijn significant geassocieerd met een leerling-relaties met leeftijdgenoten. De categorieën van normatieve contrasten en passieve slachtoffers zijn significant geassocieerd met beide factoren van het psychologische welzijn en de beide factoren van het gevoel van eigenwaarde. Echter, in de categorieën van agressieve slachtoffers en agressieve non-slachtoffers werd tussen de leerling-leraar-relatie geen significant verband met hun psychisch welbevinden en gevoel van eigenwaarde gevonden.

In **Hoofdstuk 9**, het laatste hoofdstuk, worden de belangrijkste bevindingen, een aantal sterke punten en beperkingen van het huidige onderzoek besproken, en de mogelijke implicaties voor toekomstig onderzoek en praktijk geformuleerd. Dit proefschrift onderstreept het belang van het gebruik van beide factoren - depressie / angst en sociale disfunctie - van psychisch welbevinden en het positieve gevoel van eigenwaarde en het negatieve gevoel van eigenwaarde in samenhang met de andere onderzoeksvariabelen. Vooral culturele achtergrond, geslacht, sociale vaardigheden als ook schoolmilieu, zijn gevonden als belangrijke determinanten van psychisch welbevinden en gevoel van eigenwaarde in de adolescentie. Een meer gedetailleerd inzicht in de schoolcontext en de invloed op de genoemde variabelen kan leiden tot nieuwe interessante bevindingen die kunnen worden gebruikt als achtergrond voor toekomstig onderzoek.

Zhrnutie

Záujem o adolescenciu, ako obdobie charakteristické dôležitými biologickými, psychologickými a sociálnymi zmenami, je neutíchajúci. Štúdie zaoberajúce sa adolescentmi v ich školskom, rovesníckom i rodinnom prostredí so zreteľom na prebiehajúce sociálno-ekonomické zmeny, prinášajú stále nové poznatky o tomto životnom období. Taktiež duševné zdravie, jeho komponenty a možné determinanty v adolescencii sú neustále objektom záujmu výskumníkov a expertov. Práve preto sa predkladaná práca zameriava na duševné zdravie, konkrétne na psychickú pohodu a sebaúctu slovenských adolescentov.

Kapitola 1 poskytuje všeobecný úvod do obdobia adolescencie. Jednotlivé časti tejto kapitoly sa zaoberajú konkrétne psychickou pohodou a sebaúctou ako špecifickými aspektami duševného zdravia. Zároveň popisuje ich protektívne a rizikové faktory v období adolescencie, zmeny v úrovni psychickej pohody a sebaúcty v priebehu dospievania a taktiež rozdiely v psychickej pohode a sebaúcte medzi krajinami. Ďalšia časť úvodu popisuje duševné zdravie adolescentov v kontexte školy. Predstavuje model pohody v školskom prostredí, vnímanie spolupatričnosti ku škole, sociálne vzťahy a vybrané formy násilia - šikanovania - v škole. Základných šesť výskumných otázok, celkový náčrt predkladanej štúdie a jej nasledujúce ciele uzatvárajú prvú kapitolu: (1) objasniť faktorovú štruktúru dotazníka na meranie psychickej pohody a škály na meranie sebaúcty, (2) skúmať determinanty psychickej pohody a sebaúcty v jednotlivch etapách adolescencie, (3) skúmať zmeny v psychickej pohode a sebaúcte v priebehu dospievania.

Východiská práce, podrobná charakteristika respondentov a štatistické analýzy sú opísané v **Kapitole 2**. V predkladanej práci sú zahrnuté štyri vzorky respondentov. Tri z nich sú tvorené slovenskými adolescentmi, pričom prvá pozostáva z 519 adolescentov s vekovým priemerom 11,5 roka života a tá istá vzorka s vekovým priemerom 14,9 roka života bola účastná aj v nadväzujúcom zbere. Druhú vzorku tvorilo 1 023 slovenských adolescentov s vekovým priemerom 11,5 roka života. 3 694 adolescentov s vekovým priemerom 14,3 roka života tvorilo ďalšiu vzorku respondentov. Štvrtá vzorka pozostávala zo 431 respondentov s vekovým priemerom 11,5 roka života z Maďarska. Zber dát na Slovensku sa realizoval v septembri 1999, vo februári 2000 a v júni 2000 (prvá vzorka), v apríli až júni 2003 (druhá vzorka) a v septembri až decembri 2006 (tretia vzorka). Zber dát v Maďarsku prebehol v októbri 2000, v januári a v júni 2001. Navyše sú v tejto kapitole popísané jednotlivé premenné štúdie.

Kapitola 3 sa zaoberá psychometrickými charakteristikami kľúčových premenných – psychickou pohodou (GHQ-12) a sebaúctou

(RSE) – v súvislosti s ich faktorovou štruktúrou na vzorke maďarských a slovenských mladších adolescentov (výskumná otázka 1). Analýza hlavných komponentov podporuje dvojfaktorové riešenie pre dotazník GHQ-12 s faktormi "depresia/anxieta" a "sociálna dysfunkcia" a dvojfaktorové riešenie pre škálu RSE s faktormi "negatívna sebaúcta" a "pozitívna sebaúcta" obidvoch vzoriek. Reliabilita faktorov sa taktiež ukazuje ako uspokojivá u oboch vzoriek respondentov.

Kapitola 4 skúma rozdiely v pozitívnej, negatívnej a celkovej sebaúcte adolescentov medzi 22 krajinami strednej Európy zvlášť u dievčat a chlapcov. Zároveň je skúmaný vzťah medzi pohlavím, kultúrnym prostredím, faktormi "depresiou/anxietou" a "sociálnou dysfunkciou" a sebaúctou na vzorke maďarských a slovenských chlapcov a dievčat v období adolescencie (výskumná otázka 2). Ukazujú sa štatisticky významné rozdiely medzi slovenskou vzorkou a ostatnými krajinami strednej Európy. Taktiež kultúrne prostredie a oba faktory psychickej pohody - "depresia/anxieta" a "sociálna dysfunkcia" štatisticky významne súvisia so sebaúctou.

Kapitola 5 sa zaoberá zmenami psychickej pohody a sebaúcty vo veku 11,5 a 15 rokov života. Zároveň je zisťovaná úloha pohlavia a najvyššie dosiahnutého vzdelania rodičov ako determinantov psychickej pohody a sebaúcty vo veku 15 rokov života (výskumná otázka 3). Priemerné skóre faktora depresia/anxieta; taktiež priemerné skóre celkovej sebaúcty a negatívnej sebaúcty sa zvyšovaním veku štatisticky významne zhoršuje u chlapcov i dievčat. Na druhej strane, okrem hlavného zhoršenia, priemerné skóre v niekoľkých prípadoch u chlapcov, ale aj u dievčat sa zlepšuje alebo zostáva rovnaké.

Vzťahy medzi dvoma dimenziami asertivity (prežívanie úzkosti a častosť výskytu) a faktormi psychickej pohody (depresia/anxieta a sociálna dysfunkcia) a faktormi sebaúcty (pozitívna a negatívna sebaúcta) u adolescentov je sledovaná v **Kapitole 6** (výskumná otázka 4). Zároveň je skúmaný vplyv dimenzie ukazujúcej na prežívanie úzkosti na závislé premenné, ktorý je kontrolovaný práve častosťou výskytu. Výsledky ukazujú, že čím viac respondenti prežívajú úzkosť v asertívnych situáciách, tým menej sa snažia tieto situácie vyhľadávať. Obe dimenzie asertivity predikujú psychickú pohodu a sebaúctu respondentov, hoci negatívny vplyv prežívania úzkosti na závislé premenné, ktorý bol kontrolovaný častosťou výskytu daných asertívnych situácií, sa nezvyšuje.

Kapitola 7 analyzuje rodové rozdiely v šikanovaní, spolupatričnosti ku škole, sebaúcte a psychickej pohode (výskumná otázka 5). Je sledovaný ich vzájomný vzťah a to, ako prispieva pohlavie, účasť na šikanovaní, spolupatričnosť ku škole a sebaúcta k psychickej pohode adolescentov. Chlapci, ktorí sa šikanovania iných zúčastňujú častejšie, udávajú štatisticky vyššiu sebaúctu a lepšiu psychickú pohodu ako dievčatá. Zároveň, vyššia frekvencia byť šikanovaný, nižšia spolupatričnosť k škole a nižšia sebaúcta

majú štatisticky významný vplyv na horšiu psychickú pohodu u chlapcov i dievčat, ale vyššia frekvencia zúčastňovať sa šikanovania iných, má štatisticky významný vplyv na horšiu psychickú pohodu len u dievčat. Rod, šikanovanie, spolupatričnosť ku škole a sebaúcta sú štatisticky významnými prediktormi psychickej pohody, pričom sebaúcta vysvetľuje najvyššie percento variancie.

Kapitola 8 prezentuje signifikantný súvis vzťahov na škole s psychickou pohodou a sebaúctou adolescentov (výskumná otázka 6). Zistenia ukazujú, že existuje štatisticky významný súvis medzi rovesníckymi vzťahmi v triede a vzťahmi adolescentov k učiteľom a ich psychickou pohodou a sebaúctou. Konkrétne, lepšie rovesnícke vzťahy v triede a tiež lepšie vzťahy adolescentov k ich učiteľom významne súvisia s lepšou psychickou pohodou a vyššou sebaúctou. Respondenti boli rozdelení do štyroch skupín súvisiacich so šikanovaním: normatívny kontrast (tí, ktorí nie sú šikanovaní a ani sa šikanovania nezúčastňujú); pasívne obete (tí, ktorí sú šikanovaní); agresívne ne-obete (tí, ktorí šikanujú); agresívne obete (tí, ktorí sú šikanovaní a aj šikanujú). Všetky štyri skupiny štatisticky významne súvisia s rovesníckymi vzťahmi v triede. Skupina tých, ktorí ani nešikanujú a ani nie sú šikanovaní a skupina pasívnych obetí významne súvisí s oboma faktormi psychickej pohody a s oboma faktormi sebaúcty. Na druhej strane nie je potvrdený významný vzťah medzi skupinou agresívnych obetí a skupinou agresívnych ne-obetí so vzťahmi adolescentov k učiteľom a psychickou pohodou a sebaúctou adolescentov.

V **Kapitole 9** sú diskutované hlavné zistenia predkladanej štúdie. Zároveň sú prezentované silné a slabé stránky štúdie s návrhmi pre budúci výskum i prax. Predkladaná práca vyzdvihuje dôležitosť používania dvoch faktorov psychickej pohody (depresia/anxieta a sociálna dysfunkcia) a dvoch faktorov sebaúcty (pozitívna sebaúcta a negatívna sebaúcta) vo vzťahu s ostatnými premennými štúdie. Kultúrne prostredie, rod, sociálne spôsobilosti ako aj školské prostredie sú prezentované ako významné determinanty psychickej pohody a sebaúcty adolescentov. Zároveň, hlbší pohľad na kontext školského prostredia a jeho vplyvu na psychickú pohodu a sebaúctu poskytujú zaujímavé výsledky, ktoré môžu byť východiskom ďalších štúdií a výskumov v budúcnosti.

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From September 2002 to December 2006 she worked as a researcher at Pavol Jozef Šafárik University in Košice. In 2002 she started her PhD project at the University of Groningen. Meanwhile she also participated in several domestic and international research projects. In 2003 and 2004 she prepared two projects which were successfully approved by PJ Šafárik University and which focused on Subjective well-being, self-esteem and specifics of interpersonal and risk behaviour among adolescents. Since 2002 she has worked as a researcher on the following projects: APVT – 'KISH–Košice Institute for Society and Health'; APVV – 'Individual, interpersonal, social and societal factors of adolescents' and young adults' risk behaviour' and as a leader of a work package named 'School and VEGA - Social competence, social intelligence and possibilities of its development'. At the present time she is also a member of Slovak national HBSC team, for whom she covers the school environment field and is a reviewer for the *Journal of Happiness Studies*. In addition, she delivers lectures on Rhetoric for students on the Faculty of Sciences and supervises students working on their Bachelor Degree theses. She also participates in organising and supervising educational students' work experience in primary and secondary schools. Since 2006 she has worked as a teacher at the Department of Educational Psychology and Health Psychology, Faculty of Arts, Pavol Jozef Šafárik University. She continues to deliver lectures on Rhetoric as well as Communication and Cooperation, Social-educational training focused on improving the teaching skills of students and supervising students working on their Bachelor degree dissertations. In 2007 she became the Departmental coordinator of the European Union's Socrates/Erasmus exchange programme.

Apart from her professional interests she works as a teacher of the Slovak language for foreigners and as a volunteer in the civic association 'Give me a smile' (Usmej sa na mna), which organises projects and events that promote the active participation of auditory, visually, physically and mentally handicapped children and youth in society.

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