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The impact of physical disability and illness on social relationships and emotion coping

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Abstract The present paper presents the results of the investigation of the level of preferred coping strategies and emotion management and the analysis of social relationships in adolescents with physical disabilities and chronic diseases. The research consists of a quantitative study conducted on a sample of high school students. The quality of social relationships, coping strategies and different emotion regulation strategies were analysed. The CERQ questionnaire was used to measure cognitive-emotional regulation strategies. The CCSC scale was used to measure coping strategies, the ERQ scale was used to measure emotion regulation, and the quality of relationships was measured by the IPPA-R questionnaire. Statistically significant differences in the use of expressive suppression were found between boys and girls. Statistical analysis of the empirical data also revealed a negative correlation between catastrophizing and relationship quality with mother and father. A negative correlation between expressive suppression and the quality of peer relationships was also confirmed. The results showed significant differences in the group of adolescents with disabilities in terms of distraction and avoidance coping strategies for emotions. Based on the results, it is recommended to focus on non-constructive coping and support resources for coping with stress as predictors of active coping and emotion management specifically in adolescents with physical disabilities and chronic illness.

Keywords Relationships, emotion coping, physical disability, chronic illness, adolescence

1. THE IMPACT OF PHYSICAL DISABILITY AND CHRONIC ILLNESS ON ADOLESCENT PERSONALITY

According to the biopsychosocial model, adolescence is a developmental period between childhood and adulthood that is characterised by biological, psychological, and social role changes compared with other developmental periods except early childhood (Steinberg, Morris, 2000). The National Centre for Health Statistics defines a chronic condition as an illness or disease that has been present for more than three months (MedicineNet, 2006). This definition is supplemented by the Chronic Illness Alliance (2006), which defines chronic illness as a condition that persists over a long period of time, worsens over time, and affects the quality of life of the individual. Generally, physical (somatic) disability refers to disability that manifests in temporary or permanent problems with a person's mobility (Martz, Livneh, 2007). M. Rutter (1980 according to Williams, Holmbeck, & Greenley, 2002) refers to health problems and mental disorders that occur during adolescence because of the many changes that characterise this period. In addition to these normative changes and developmental tasks, the developmental processes of medically impaired and physically disabled young people are influenced by the presence of medical limitations. Health impairment and physical disability have an impact on somatic and psychological development, social adjustment and quality of life (Vancu, 2024). On the one hand, physical disability as a chronic disease limits the adolescent's life possibilities; on the other hand, it has a significant impact on his/her individual self-reflection and self-understanding. For young people, physical disability is a major source of unwanted burden and stress, contributing to overall psychological and social vulnerability (Raina, 2005). Physically disabled adolescents are more critical and self-critical, focusing much more on the disability and its social significance. In a normative crisis of individuality and separation, they find themselves alone in this conflict and, in the case of young people in residential care, objectively isolated (Shields et al., 2006). The consequences of reduced mobility and often the presence of certain psychological changes (weakened regulatory capacity of the nervous system) affect the individual's ability to adapt and cope, and problems arise in the personal and social spheres (Pipeková, 2006). Personality variables as significant moderators of coping allow experiencing psychological well-being despite adverse life conditions and health impairment (Koubeková, 2004). A person is in search of an acceptable role, reflects on his or her possibilities and social value. If he or she fails, at least partially, to develop a satisfying self-image, he or she reacts with various defence mechanisms that affect personality development and relationships with people (Paxton et al., 2006).

2. EMOTION COPING AND DISABILITY

In Weisz's model, coping efforts are focused on maintaining, extending, and taking alternative control over the environment and the self. Primary control is defined as coping aimed at influencing an objective event or condition. The goal of secondary control is coping that is related to coping that is aimed at maximising one's options with respect to current conditions (Weisz, 1994). Based on previous research in the area of adjustment in children and adolescents with disabilities, an integrative model, the "Disability-Stress-Coping Model", has been proposed (LaGreca, 1992). In people with disabilities, reduced resilience to stress is caused by a chronic accumulation of stressful situations that disrupt the integrity of the personality, the balance of psychological processes and the conscious rational regulation of actions (Matějček, 2001). Currently, there is a lack of an adequate theory of stress management that takes into account the specifics of childhood and adolescence and is based

on theories related to adults (Alvord, Grados, 2005; Brotman et al., 2003; Greenberg et al., 2001).

Issues arising from theoretical concepts in developmental psychology in the area of coping in children and adolescents are discussed (Compas et al., 2001; McCubbin et al., 2001). The interrelationships between coping and development suggest the process nature of coping. The coping process is made up of multiple interactions, revealing the influence of individual relationships, peer relationships, but also school relationships. Coping can be seen as an adaptive process that takes place in interactions with peers, which are like a test or a challenge for an individual response that leads to socialisation processes. J. Bowlby, M. D.. Ainsworth (1989 according to Hoskovcova, 2006) and others suggest that the "internal model of functioning", i.e. a set of cognitive representations of interpersonal relationships formed on the basis of the experience of the relationship with the parent, caregiver, functions as a pattern that redefines the form of close relationships that a person enters in the course of his/her life (continuity model). People who lack corrective experience from certain relationships carry their anxiety into later developmental periods; long-term correction is needed to change the mental representation of the figure (Macek, Lacinová, 2006). Research on adolescents' coping with everyday problems in relation to self-esteem suggests that when everyday problems are more frequent, adolescents tend to prefer avoidant coping strategies and emotion-focused coping (Ficková, 2000).

3. RELATIONSHIPS AND EMOTIONS

Relational attachment and emotional regulation are closely related. Brumariu (2015, p. 31) states that "securely attached children internalize effective emotion regulation strategies within the relational bond and are able to successfully use adaptive emotion regulation strategies outside of the relational bond when the relational bond person is not present..." "Experience fewer internalizing and externalizing problems, are more socially competent, and have higher quality friendships" (2015, p. 32).
Ambivalently attached children are more likely to show negative emotions in an attempt to get the person's attention for relations. Avoidantly attached children, on the other hand, in turn minimized negative emotions during interaction with the relational attachment figure - in this way; they secured a relationship with a parent who could not tolerate attachment behaviors (Brumariu, 2015). Spangler and Zimmerman (2014) reported in their research that securely attached children tend to use social emotion regulation strategies. Based on research with young adults, John and Gross (2004) concluded that cognitive reappraisal is a healthy adaptive strategy and expressive suppression is a prerequisite to poorer mental health.
Contreras and Kerns (2000) report that parental approachability and responsiveness in moments of child distress are related to the development of the child's ability to adaptively regulate emotions. Securely attached children are able to accept parental help in regulating both their positive and negative emotions. As a result, the child is reassured that sharing and expressing both positive and negative emotions is acceptable and applies this assumption to future relationships. If caregiving is irregular, it is likely that the child will not learn to regulate negative emotions and will develop a strategy of increasing emotion in order to maintain the parent's attention.

Research (Bowlby, 2012) clearly concludes that securely attached children internalize effective emotion regulation strategies within the relational bond and are able to use them outside of the relational bond when the person for relations is not present. Effectiveness of emotion regulation not only influences the experience of regulation itself but is also a prerequisite for academic success, quality social relationships, coping with stressful situations, and reduces the predisposition for the development of many anxiety disorders.

3.1 Attachment and emotion regulation in adolescents with chronic illness and disability

Relationships and attachment in childhood have a profound impact on life, relationships and development in adulthood. Attachment deficits in childhood and adolescence emerge in adulthood in the form of emotions such as anxiety, fear and inferiority. Adults attempt to compensate for these childhood and adolescent deficits through behaviours that may be considered unusual (Peters, 1999).

As the developmental period of adolescence begins, individuals tend to become more detached from their parents, become more independent, and experience major changes in their emotional, cognitive and behavioural systems (Allen, 2008). Many adolescent boys and girls strive to change their appearance to show signs of adulthood. In this way, adolescents seek to be treated as equals in order to feel accepted by adults. At the same time, these adolescents often experience self-doubt due to their lack of life experience and realise that they are not adults (Wiedemann et al., 1988). "They observe each other, compare their appearance with that of adults and do not want to fall behind them" (Wiedemann et al., 1988, p. 18). Those who are not physically average are more likely to be aware of these deficiencies. In childhood, a person learns how to regulate his or her emotions properly. Parents or close relatives are the main supporters of a child's emotional development. When parents respond effectively and sensitively to a child's emotional expressions, the stage is set for better management of one's own emotions and, in perspective, the individual gains the ability to regulate emotions (Gross, Thompson, 2007, p. 12). Working with and educating people with disabilities in schools is a very specific process. The specificity may be the aim, the tasks, the content or the process of education itself. Differences are also related to the different degrees of disability, as different methods and educational procedures are used for mild disabilities, others for moderate disabilities and others for severe disabilities and chronic illnesses (Mikolkova, 2007).

Generally accepted norms naturally influence the attitudes of the child's closest caregivers and thus initially affect the child indirectly and vicariously, i.e. through parents and other adults. Later, when the child enters childhood society, he or she experiences the impact of these general norms directly through contact with peers who look or behave according to the norms.
When an individual adapts to the norms that prevail in a particular school, we can say that he or she has adapted and integrated. Those who are integrated should be prepared to perform as well as is required of other pupils. A pupil or an individual who has mastered the issue of integration is expected to adopt the norms of behaviour in the school and to follow the set curriculum and programme with the help of the teacher (Mikolkova, 2007).

During the developmental period of adolescence, individuals experience hormonal changes that affect emotional experience. Emotional expressions often appear exaggerated, volatile and short-lived (Vágnerová, 2012). Hormonal changes affect an individual's emotional and affective experience, which also affects interpersonal relationships. An interesting feature of adolescence highlighted by Allen and Miga (2010) is the individual's relentless pursuit of autonomy in everyday, but often stressful, situations. Relationships with peers can be considered as a source of emotional stress in adolescence, in which individuals experience different challenges and disappointments that are different compared to previously

experienced emotional situations with, for example, parents (Vancu, 2019). As we mentioned earlier, the importance of both parental upbringing and parental personality greatly influences the development of an individual's emotion regulation. In integrated primary school classrooms, chronically ill and disabled children do not tend to be rejected by their classmates (Kundrátová, Špotáková, 2004). Public behaviour towards such children and adolescents is reflected in their psyche, attitude, performance of certain activities and self-acceptance (Vágnerová, 2012). Eisenberg and colleagues (1997) demonstrated that individuals with low emotional regulation and high emotional intensity are prone to aggression and show signs of antisocial behaviour (Eisenberg et al., 1997).

Communication between parents and adolescents is one of the most important interventions in an individual's development, and it is considered desirable for parents to communicate adequately with their children and give them space to express their own emotions. Emotional experiences are stored in implicit memory, which is unconscious (Plháková, Reiterová, 2010). Expressive repression can lead to a negative self-image and feelings of alienation from others and is a negative indicator of mental health (John, Gross, 2004).

4. RESEARCH DESIGN

Partial results were presented at the Quaere 2024 conference (Vancu, 2024). In this paper, we report on the extended results of the ongoing research.

The purpose of this study was to analyse the quality of coping, relational attachment and emotion regulation in adolescents. One of the research objectives was to explore coping preferences in a group of physically disabled and chronically ill adolescents and to identify gender differences in coping strategies. We started from the concept of relational attachment in relation to the specificities of adolescence and relied on the concept of emotion regulation. Exploring relational attachment with emotion regulation is important because it influences students' learning and flourishing in the school environment. Emotion regulation influences behaviour in the school environment, contributes to the formation of quality social relationships with peers and educators, and influences attitudes towards learning.

4.1 Methods and sample

We used a battery of questionnaires composed of several research methods:

a) The revised questionnaire - Inventory of Parent and Peer Attachment - IPPA-R. The authors are G. Armsden and M. T. Greenberg (1987). The questionnaire also contains three subscales that assess: a) the level of mutual trust, b) the quality of communication and c) the alienation dimension. It is a self-report questionnaire in the form of a five-point Likert scale and the options are never or almost never (1), rarely (2), sometimes (3), often (4), always or almost always (5).
b) Cognitive-Emotional Regulation Questionnaire (CERQ) It was developed in 1999 by Nadia Garnefski and Vivian Kraaij and Philip Spinhoven on the basis of theoretical and empirical findings (Garnefski, Kraaij, 2006). The CERQ consists of 36 items measuring 9 conceptually distinct subscales: Self-blame, blaming others, rumination, catastrophizing, putting into perspective (reducing the importance of the situation), positive redirection of attention (focusing on the positive experience), positive reappraisal, acceptance and planning.
c) Emotion Regulation Questionnaire - ERQ. The ERQ was developed by J.J. Gross and O.P. John in 2003 to measure individual differences in the use of two emotion regulation strategies (John, Gross, 2004): (1) cognitive reappraisal and (2) expressive suppression. The questions are formulated in such a way that the respondent evaluates his/her emotional experience of the situation and his/her emotional expression. The questionnaire contains 10 items, 6 items on Cognitive Reappraisal and 4 items on Expressive Suppression. Respondents use a 7-point Likert scale to answer the questions, where 1 is strongly disagree, 4 is neutral and 7 is strongly agree.
d) The Children's Coping Strategies Checklist (CCSC - Ayers et al., 1996) was used to assess coping strategies. It identifies active coping strategies (cognitive decision-making, direct problem solving, seeking understanding, and positive reappraisal), support-seeking strategies (problem-focused support seeking and emotional support seeking), distraction strategies (physical release of feelings and distracting activities), and avoidance strategies (escape activities and cognitive avoidance). The scale has 42 items and the respondent rates his or her coping behaviour on a 4-point Likert scale ranging from 'never' to 'always'.

For the purposes of our research, we approached 12 high schools in the country. Requests for permission to conduct the research were sent directly to the principals, who gave written consent for the research to be conducted in their schools. The total number of the research sample was 164 respondents with chronic diseases (asthma, diabetes, obesity, heart failure, high blood pressure ...), 89 girls and 75 boys, aged 16-18 years.

4.2 Research results

The empirical data were processed into a frequency table in Microsoft Excel, and the processed data were then analysed using IBM SPSS Statistics software.

The ERQ questionnaire was used to examine the use of two emotion regulation strategies: cognitive reappraisal and expressive suppression.

Six items from the questionnaire measured cognitive reappraisal and four items measured expressive suppression. We hypothesised that there would be intersex differences in the use of cognitive reappraisal. Student's t-tests were used to examine differences in the use of cognitive reappraisal and expressive suppression strategies between girls and boys.

Based on the results of the Student's t-test for two independent samples, we can conclude that the rate of use of cognitive reappraisal in boys (AM = 3.43, SD = 0.87) is not statistically significantly different from the rate of use of cognitive reappraisal in girls (AM = 3.21, SD = 0.22); t = 1.03, p = 0.32. We measured statistical significance using a t-test to detect differences in the use of expressive suppression between girls and boys.

Based on the results of the Student's t-test for two independent samples, we can conclude that the rate of use of expressive suppression among boys (AM = 4.28, SD = 0.16) is statistically significantly different from the rate of use of expressive suppression among girls (AM = 3.65, SD = 0.12); t = 3.21, p = 0.002.

We used the CERQ questionnaire to measure ruminative use. Two items from the questionnaire tested this emotion regulation strategy. We hypothesised that there would be intersex differences in rates of

ruminative use. We used Student's t-test to analyse differences between boys and girls in the use of rumination. From the results we can conclude that the rate of use of rumination as an emotion regulation strategy in girls (AM = 4.18, SD = 0.12) is statistically significantly different from the rate of use of rumination in boys (AM = 2.72, SD = 0.13); t = -5.49, p = 0.000.

The IPPA-R questionnaire was used to assess the quality of relationships with mother, father and peers. Bonding with mother, father and peers was measured separately with 25 items for each category.

The CERQ was used to measure the use of each emotion regulation strategy. The results of Pearson's correlation coefficient show us that the relationship between the degree of quality of relations and the degree of use of self-blame is not statistically significant, but the degree of quality of relations is negatively correlated with the use of catastrophizing.

From the results we can conclude that the degree of quality of the relationship with the mother is negatively related to the degree of use of catastrophizing (r=-0.22, p= 0.00). In the case of the relationship between the measure of the quality of the relational bond with the father and the measure of the use of catastrophizing (r= -0.12, p= 0.04), the correlation is weak.

The correlation between the measure of the quality of the relationship with peers (r= -0.02, p= 0.64) and the use of catastrophizing was not found to be statistically significant. Statistical significance of the measured relationship was only confirmed for peer relations (r= -0.16, p= 0.00). Based on the above results, we can conclude that the degree of quality of peer relationships is negatively related to the degree of use of expressive suppression.

In the adolescent comparison groups, a higher prevalence of active coping strategies was found in physically disabled and chronically ill adolescents.

There was a statistically significant difference (at the 0.05 level) in active coping strategies in cognitive decision making (t=-2.63; p=0.01), seeking understanding (t=-3.62; p=0.00), seeking support in problem solving (Z=-7.12; p=0.00), seeking emotional support (Z=-6.91; p=0.00), and positive reappraisal (t=-7.83; p=0.00), which were more frequently chosen by adolescents with physical disabilities.

Among the passive coping strategies, there was a difference in the greater use of passive coping strategies in the group of young people with physical disabilities, which was statistically significant in the dimensions: physical release of feelings (Z=-2.65; p= 0.02), distracting activities (t=-4.45; p= 0.00) and cognitive avoidance (Z=-4.72; p= 0.00). After analysis, the t-test confirmed more frequent use of support-seeking strategies (t=-8.84; p=0.00) among active coping strategies for the physically disabled group.

Adolescents are also more likely to choose passive coping strategies. A statistically significant difference between the groups was found in the use of avoidance (t=-5.46; p=0.00) and distraction (t=-4.24; p=0.00) coping strategies for the group of adolescents with disabilities and chronic illness.

4.3 Discussion

Examining the impact of physical disability on the quality of coping in adolescents, the results suggest that cognitive decision making, positive reappraisal, seeking understanding, problem solving and seeking emotional support are coping strategies used by the physically disabled. The group of adolescents with disabilities are more likely to use active coping strategies, especially the strategies of turning to other people when having a problem and seeking support in the environment. The use of social resources is socially influenced in the sense that potentially members of some disadvantaged groups (chronic illness, physical disability) are more vulnerable to the negative physical or psychological effects of stress (Thoits, 1995).

On the other hand, the support received from others and the wider society can influence the way a group of disabled people cope with difficult situations (Schwarzer, Leppin, 1991). Differences in passive strategies were found in our sample, which indicated that the group of adolescents with disabilities frequently used passive coping strategies, both distraction strategies (physical release of feelings, distracting activities) and avoidance strategies (cognitive avoidance). In the group of young people with disabilities, the results show the risk of avoiding a realistic and rational reappraisal of the situation.

In adolescence, emancipation and rebellion against authority are developmentally important; the adolescent needs to demonstrate competence in confronting the pressures of authority. Emancipation in adolescence is important, but only meaningful if authority is also emotionally significant (Seifert, Hoffnung, 1991).

Emotional detachment from the family is complicated by the fact that disabled and chronically ill children are not accepted as equals by their peers, most often occupy an overlooked position in the group, and identification with the group is often idealized (Štech et al., 1997).

In the research conducted on a sample of high school students and in analysing the data, we also focused on the quality of relationships, emotion regulation through cognitive reappraisal and expressive suppression, and strategies for regulating negative emotions. We focused on gender differences and the extent to which cognitive reappraisal and expressive repression were used.

Much research has focused on examining cognitive reappraisal and expressive suppression in males and females in a variety of contexts (McRae et al., 2008; Middendorp et al., 2005; Hoeksema, Aldao, 2011). In our research, we did not find statistically significant differences in the rates of cognitive reappraisal use between boys and girls with chronic illness.

Another emotion regulation process is expressive suppression. It is characterised as a maladaptive emotion regulation strategy because it does not regulate the experience of the emotion itself, but only suppresses its external, behavioural manifestations (Gross, 2003). Richards and Gross (2000) found that suppression leads to impaired memory for social information provided during emotion regulation. The results of our research showed us that boys used expressive suppression to a greater extent than girls. This finding is consistent with other research (Gross, 2003, Matsumoto et al., 2016, Flynn et al., 2010).

We also hypothesised that there would be differences in the use of rumination between boys and girls. Rumination is a maladaptive emotion regulation strategy that involves passively and repetitively focusing attention on the manifestations of a negative situation and on the possible causes and consequences of these manifestations (Nolen-Hoeksema et al., 2008), while at the same time distracting attention from possible solutions to the situation. We found that girls used rumination more than boys. In their research, Nolen-Hoeksema

and Jackson (2001) found that respondents who felt less in control of the situation or found negative emotions more difficult to manage used rumination more.

In the second half of our research, we focused on analysing the quality of relational attachment in relation to the cognitive emotion regulation strategies of self-blame and catastrophizing. We hypothesised a negative relationship between the rate of self-blame use and measures of relationship quality. We built on the premise that securely attached adolescents more readily acquire adaptive emotion regulation strategies (Brumariu, 2015) and are able to use them in social relationships.

However, we did not find a statistically significant relationship in our results. Consequently, we hypothesised that the use of catastrophizing and relational attachment quality would be negatively related. We drew on research by Laura Brumaria (2012), who examined mother-child relational attachment, emotion regulation, and manifestations of distress in 10-12 year old children. She found that more securely attached children tended to use catastrophizing to a lesser extent. The results of our research confirmed a negative relationship between measures of relational attachment quality and the use of catastrophizing. This was confirmed for relational attachment to mother and father, but not to peers. Expressive suppression can have a negative impact on self-perception and alienation from others (John, Gross, 2004). Gresham and Gullone (2012). We have also examined the relationship between measures of relationship quality and the use of expressive suppression. We have shown and confirmed that high quality peer relationships provide adolescents with security and they freely express their emotions in the presence of their peers. In the case of relational bond quality with mother and father, we did not confirm the relationship. This finding suggests to us that levels of expressive suppression in adolescents are not directly related to relational bond quality. We see potential in future research to analyse the quality of relations and coping - the subscales of trust, communication and alienation. We also believe that age comparisons of the use of emotion regulation strategies would be beneficial.

5. CONCLUSIONS

The results highlight the need for training to develop the use of active coping and emotion regulation strategies and the need to promote a broader repertoire of active coping strategies (especially direct problem solving) in young people with disabilities and chronic illness. Overall, to reduce the frequent use of distraction and avoidance strategies in the adolescent group. The role of the educator in the school environment is not only to impart knowledge to the students but also to take an interest in their emotional development. As a preventive measure, school management and teachers should include regular discussions and activities on emotions, their experience and the development of effective emotion regulation strategies in the educational programme. Despite these realities, the whole period of adolescence should be seen as an extraordinarily sensitive one in which the adolescent person with a disability is particularly vulnerable. Studying the links between development and coping, emotions and social relationships contributes to understanding youth behaviour. By identifying which personal resources contribute most to effective coping and constructive emotion regulation, it will be possible to focus on developing appropriate coping strategies and resources, especially during the critical period of adolescence.

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