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Detecting of Interrelationships between Eating Disorders and Self-Harm in Girls during Adolescence

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Abstract: Presented research focuses on detecting of interrelationships between the overall rate of self-harm and the symptomatology of eating disorders. The research group consisted of 60 adolescent girls with eating disorders (anorexia and bulimia). We used the SHI questionnaire to determine self-harm and EDI-2 to determine the symptoms of individual eating disorders. We detected that there was a moderate positive relationship between self-harm and the overall score in EDI-2 symptoms. We also found moderate and weak positive relationships between eating disorders symptoms and self-harm. We did not observe a statistically significant relationship between bulimia and self-harm.

Keywords: *eating disorders, symptoms, self-harm, interrelationships, adolescents.*

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1. Introduction

Eating disorders are common mental illness affecting women of various ages (Papežová, 2010). Krch (2007) adds that the adolescent population is at gretest risk for developing eating disorder. This group is characterized by reduced self-esteem due to appearance, intense dissatisfaction or self-hatred, adherence to diets, perfectionism manifested by a desire for perfection or distorted self-perception (Nývltová, 2008). Girls in particular are very dissatisfied with themselves during this period (Fliege et al., 2006). Hawton et al. (2002), Dougherty et al. (2009), Fliege et al. (2009) investigated whether a critical view of oneself could lead to self-harm. Gereková and Schuller (2004) found out that girls have greater emotional barriers in decision-making process, they are more anxious, and they are more affected by fear and anxiety, so they are more likely to have eating disorders. Anorexia nervosa, bulimia nervosa, psychogenic overeating and other unspecified types of eating disorders are included in the classification (Mahan & Raymond, 2017). Anorexia nervosa is characterized by deliberate weight loss and targeted food repulsion (Krch, 2010). Mancini et al. (2010) state that this is a deliberate maintenance of weight loss, which in turn leads to progressive malnutrition and various somatic complications, which can potentially be fatal even without suicidal tendencies. Bulimia nervosa is characterized by regular binge eating and intensive control of one's own body weight (Fialová & Krch, 2012). According to the International Classification of Diseases (1992), with bulimia nervosa it is very important to be able to distinguish it correctly from gastrointestinal disorders, major depression, or personality disorders. Self-harm does not have a precisely specified definition. This may be due to the fact that this kind of behaviour alone isn't currently classified as a clinical syndrome. (Kriegelová, 2008). The term self-harm can be used to describe forms of behaviour that induce bodily injury, either directly or indirectly (Favazza, 1999). These forms of behaviour cannot be interpreted as synonymous with suicidal behaviour, although self-harm alone increases the likelihood of a suicidal attempts (Cooper et al., 2005; Greydanus & Shek, 2009). Self-harm is a source of eliminating anger, tension in order to induce positive emotions and gain control over oneself (Young et al., 2007, Démuth & Démuthová, 2019; Démuthová & Démuth, 2020). Self-harm is very often a comorbid diagnosis in adolescents with eating disorders (Nitkowski, Petermann, 2011, Claes et al., 2013; 2014). Interestingly, the tendency to self-harm is higher in bulimics or bulimic anorexics (Claes et al., 2013; 2014, Depestele et al., 2015). Doktorová and Démuthová (2018) found that self-harm is more common in

bulimic anorexia than restrictive anorexia nervosa. Individuals with anorexia nervosa are more likely to experience self-harm (Claes, 2004).

Given the above characteristic behaviour in people with eating disorders, we focus on the continuity between the disorders in the areas of:

• The relationship between self-harm and the symptoms of eating disorders,

Based on researches (Nitkowski & Petermann, 2011; Claes et al., 2013; 2014, Depestele et al., 2015, Fialová & Krch, 2012), we formulated a hypothesis and a research question

H1: There is a significant positive relationship between overall self-harm score and overall EDI-2 score.

RQ1: Is there a significant relationship between overall level of self-harm and eating disorders symptomatology?

2. Methods

2.1 Research sample

Research sample consisted of adolescent girls (N = 60) with an age range from 15 to 26 years who have been diagnosed with an eating disorder. Within the research sample, we divided adolescents based on the occurrence of self-harming behaviour (based on a questionnaire submitted by us, the results of which we then compared with the conclusions of experts). We selected the research sample through purposive sampling. Gender, age, and current inclusion in outpatient treatment were conditions for the respondent to be included in the research. We personally administered a battery of questionnaires to individual participants after their consent and after consultation with their attending physician. Data collection took place during the months of June-August 2020. The respondents participated in the research voluntarily and anonymously, by filling in individual questionnaires.

Table 1 Research sample

age	**15-26**
gender	female
disorder	anorexia nervosa, bulimia nervosa
residence	Western and Central Slovakia
occupation	students and external students, graduate practice
marital status	single in romantic relationship (23), single without romantic relationship (37)

2.2. Materials and equipment

Self-Harm Inventory (SHI) by R. A. Sansone & L. A. Sansone (2010, translated by Démuthová, unpublished) (Claes et al, 2002) identifies a wide range of behaviours that, according to various concepts, can be defined as a form of self-harm. It is a self-report questionnaire, which contains 22 items monitoring the presence of individual forms of self-harming behaviour. This inventory was translated, back-translated, and translation was evaluated by evaluators, who were independent (Démuth & Démuthová, 2019). Thus, the Slovak version of the questionnaire contained 20 forms of self-harm, with each of them respondents on a four-point scale capturing the frequency of occurrence of a particular behaviour (from "never" to "often") had to indicate the occurrence of the particular behaviour in themselves. Démuthová and Doktorová (2018) confirmed in their study that this instrument has good level of internal consistency (α = 0.809), so we decided to opt for this instrument in our research too.

EDI-2 by Garner (1991, in Thiel, 1997), we used to detect individual symptoms of eating disorders and overall scores. The questionnaire consists of 11 scales (8 original scales and three new scales). As this questionnaire is not standardized, we had to detect its internal consistency, which ranged from α = 0.769 to 0.869, which is in line with the German version.

2.3. Procedures

We processed data from questionnaires in the statistical program SPSS 22. Since the questionnaires are not standardized for our population, we first choose the reliability test, using the Cronbach's alpha. We firstly performed normality test, which determined whether data are normally distributed. Based on the results of normality, nonparametric tests were used. To determine the relationships, we used the Spearman correlation coefficient, the strength of which we interpret based on this scheme:

Schematic representation of the relationship between variables

Value up to 0.3 ..... weak relationship

Value from 0.3 to 0.6 ..... moderate relationship

Value above 0.6 ..... strong relationship

3. Results

H1: There is a significant positive relationship between overall self-harm score and overall EDI-2 score.

Table 2 Relationship between overall EDI-2 score and self-harm in adolescents

Spearman correlation test		self-harm
overall EDI-2 score	correlation coefficient	0,499(**)
	Sig.	0,000
	N	60

We determined a moderate, positive, and statistically significant relationship between self-harm and the overall EDI-2 score, r = 0.499, p = 0.000 (Table 2). These results support confirmation of Hypothesis 1.

RQ1: Is there a significant relationship between overall level of self-harm and eating disorders symptomatology?

Table 3 The relationship between the individual symptoms and self-harm in adolescents

Spearman correlation test		self-harm
drive for thinness	correlation coefficient	0,226(**)
	Sig.	0,000
	N	60
bulimia	correlation coefficient	0,044
	Sig.	0,267
	N	60
body dissatisfaction	correlation coefficient	0,205(**)
	Sig.	0,000

	N	60
ineffectiveness	correlation coefficient	0, 483(**)
	Sig.	0,000
	N	60
perfectionism	correlation coefficient	0,326(**)
	Sig.	,001
	N	60
interpersonal distrust	correlation coefficient	0,323(**)
	Sig.	0,000
	N	60
interoceptive awareness	correlation coefficient	0,401(**)
	Sig.	0,000
	N	60
maturity fears	correlation coefficient	0,234(*)
	Sig.	0,019
	N	60
asceticism	correlation coefficient	0.292(**)
	Sig.	0.005
	N	60
impulse regulation	correlation coefficient	0,562(**)
	Sig.	0,000
	N	60
social insecurity	correlation coefficient	0,339(**)
	Sig.	0,000
	N	60

Between self-harm and the individual symptoms of eating disorders, we observed weak positive relationships in: symptom drive for thinness (r = 0.226, sig. = 0.000), symptom body dissatisfaction (r = 0.205, sig. = 0.000), symptom asceticism (r = 0.292, sig. = 0.005), symptom maturity fears (r = 0.234, sig. = 0.019). We observed a moderate, positive, and statistically significant relationships in: symptom ineffectiveness (r = 0, 483, sig. = 0.000), symptom perfectionism (r = 0.326, sig. = 0.001), symptom

interpersonal distrust (r = 0.323, sig. = 0.000), symptom interoceptive awareness (r = 0.401, sig. = 0.000), symptom impulse regulation (r = 0.562, sig. = 0.000), symptom social insecurity (r = 0.339, p = 0.000). We did not find a statistically significant relationship between symptom bulimia and self-harm (r = 0.044, sig. = 0.267) (Table 3).

4. Discussion

4.1. Interpretation of results

Several authors have addressed the interrelationships between eating disorders and self-harm (Nitkowski & Petermann, 2011; Claes et al., 2007; 2021, Depestele et al., 2015; Sarbach-Andrae et al., 2007, Fialová & Krch, 2012). Eating disorders on their own very often induce self-harming behaviour (Hawton et al. 2002; Dougherty et al., 2009; Fliege et al., 2009). According to Kriegelová (2008), frequent and incorrect criticism from the parent or other close person results in fear of the parent, which according to our findings is related to self-harm and is one of the symptoms of eating disorders. Furthermore, it is an insufficient and disproportionately emotionally adequate response to manifestations in childhood, weak provision of space for the development of autonomy, great effort from parents to control the child and exposure to severe and stressful events such as death of a relative or loved one, accident or bullying of a child in school, internet, and another environment (Kriegelová, 2008, Claes et al, 2021). According to Sutton (1999), the factors influencing intentional self-harm are long-term child abuse, developing problems with one's own identity, feelings of sadness, frequent loneliness, or the occurrence of lacrimosity, and others. There are various findings of self-harm within eating disorders (Claes et al., 2001; Favaro & Santanastaso, 2002). Individuals with self-harming behaviour tend to pay more attention to their figure and look at their health predominantly from a negative perspective (Favaro & Santanastaso, 2002). Within symptomatology, the key and primary diagnostic criterion of anorexia nervosa is deformed self-perception (Elliot, Place; 2002). Perfectionism, as one of the personality characteristics within the etiology, is one of the key determinants of the development of eating disorders. According to Hewitt and Flett (1991), perfectionism is a personality characteristic characterized by an individual's desire for flawlessness, the setting of high goals, which is accompanied by critical self-esteem and fear or apprehension about the evaluation from others and from loved ones. Frost et al. (1990), in turn, define perfectionism as a multidimensional construct consisting of high personal demands, fears of one's own mistakes,

and especially a tendency to perceive excessive criticism from one's surroundings. Setting high personal goals and an individual's perception of one's own indisposition to achieve these set goals can lead to gradation of anxiety, which can potentially result in the development of many mental disorders (Van Yperen et al., 2011). An overeating attack does not have a long frequency and the amount of food consumed can be extremely large but may not transform into direct forms of self-harm (Anderson et al., 2001). Based on this fact, individuals eat in secret, as they do not have the usual dietary consumption that occurs in society or among loved ones (Vágnerová, 2012). Setsu et al. (2018) add that the disorder is characterized by accompanied purgative behaviour, which aims to detoxify the body.

4.2. Limits

After conducting the research, we observed some limits that could negatively affect the findings we obtained.

We consider the size of the research sample to be the first of the research limits. The findings we obtained would be more accurate if the sample was larger. The number of respondents was not large enough to be able to generalize the research results to the whole population.

Another limit of our research is the time that took to respondents to complete all the questionnaires. We provided all the questionnaires to the participants at once, which means that the number of all items was huge. The respondents filled in all the items from the questionnaires without a break, so after a while they could be tired. As a result of exhaustion, their attention and interest may have diminished. This means that results can be skewed and biased.

Reduced motivation could also be an important factor in completing the questionnaires. It is possible that less motivated students were indifferent during the completion of the questionnaires and did not show an interest in attentive and truthful answers to the items.

The limitations of the research are also questionnaire methods, as it was a self-report instruments, students could answer socially desirable, which could significantly reduce the quality of the data obtained.

The last limit is the insufficient concentration of comorbid diseases in our research sample. It would be appropriate to focus on whether they have, for example, impulse disorders, affective disorders, or borderline personality disorders.

4.3. Future research intentions

In future research, we would focus on muscle dysmorphia, which is one of eating disorders and also disorders of the formation and perception of one's own body (Petrová, Šmídová, 2014). Leone et al. (2005) further state that the symptoms of the disorder include suicidal tendencies and obsessive-compulsive behaviour. It would be interesting to focus on the differences between the groups in the suicide experiments. It would be useful to focus on whether self-harm is related to suicidal tendencies. From the authors' findings, it can be assumed that there is a strong relationship between the variables (Fliege, 2006).

Conclusion

In research, we confirmed, that in our research group there were significant interrelationships between eating disorders and self-harm in girls during adolescence.

The most important findings:

• there is a moderate, positive, and statistically significant relationship between overall self-harm score and the overall EDI-2 (eating disorder instrument) score,

• there is a weak positive significant relationship between self-harm and symptom drive for thinness, symptom body dissatisfaction, symptom asceticism, symptom maturity fears,

• there is a moderate positive significant relationship between self-harm and symptom ineffectiveness, symptom perfectionism, symptom interpersonal distrust, symptom interoceptive awareness, symptom impulse regulation, symptom social insecurity,

• there is not a statistically significant relationship between symptom bulimia and self-harm.

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