Behavioural and Cognitive Psychotherapy, 2024, page 1 of 5
doi:10.1017/S1352465824000432

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BRIEF CLINICAL REPORT

Early maladaptive schemas, depression and anxiety in adolescent psychiatric out-patients

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(Received 6 June 2024; revised 23 September 2024; accepted 2 October 2024)

Abstract

Background: A growing number of studies among adolescents have reported early maladaptive schemas (EMS) to associate with anxiety and depression within non-clinical samples. However, there is a gap of knowledge concerning clinical populations.
Aims: The current study's aim was to explore the potential association between EMS domains and anxiety and depressive symptoms within clinical sample of adolescents.
Method: The current study included 176 adolescent psychiatry out-patients. The EMS domains were measured with the Young Schema Questionnaire-Short Form 2-Extended (YSQ). Their association with anxiety symptoms (the Overall Anxiety Severity and Impairment Scale) and depressive symptoms (the Beck Depression Inventory II) were analysed with general linear models while controlling for significant confounding factors.
Results: Depressive symptoms were associated with three of the four EMS domains: Disconnection and Rejection ($\eta^2p = 0.047$, $p = 0.005$), Impaired Autonomy and Performance ($\eta^2p = 0.074$, $p < 0.001$), and Impaired Limits ($\eta^2p = 0.053$, $p = 0.003$). Anxiety symptoms were associated with two EMS domains: Impaired Autonomy and Performance ($\eta^2p = 0.046$, $p = 0.005$) and Excessive Responsibility and Standards ($\eta^2p = 0.054$, $p = 0.002$).
Conclusions: Various EMS domains were associated with depressive and anxiety symptoms among adolescent out-patients. Further studies are needed on the effect of EMSs on the treatment outcomes for depression and anxiety.

Keywords: adolescence; anxiety; depression; early maladaptive schemas; out-patients

Introduction

Depression and anxiety disorders account for the majority of global adolescent mental health disorders and the number of adolescents who report anxiety and depressive symptoms is increasing (Kauhanen *et al.*, 2022). This has led to the question whether underlying early maladaptive schemas (EMSs) could be one potential explanation to explain this trajectory (Young *et al.*, 2003). EMSs are harmful mental models consisting of emotions, cognitions and bodily sensations that direct the way individuals look at themselves, others, and the surrounding world. Arising from early childhood when the child's needs are not adequately met in social interactions, the EMSs are linked with a variety of difficult thoughts and emotions to which an individual reacts

with dysfunctional coping responses. Later on, these coping responses maintain and even strengthen the maladaptive orientation to stressful situations (Young *et al.*, 2003). There are 18 different EMSs that are collapsed to EMS domains. Mixed findings exist supporting the existence of two to five domain models for EMS schema domains. To date, the evidence predominantly supports a four-factor model emerging as an empirically sound and theoretically meaningful approach. These four EMS domains are Disconnection and Rejection, Impaired Autonomy and Performance, Excessive Responsibility and Standards, and Impaired Limits (Bach *et al.*, 2017).

The number of studies exploring the association between EMSs and depressive and anxiety symptoms in adolescence is still quite modest (Orue *et al.*, 2014; Tariq *et al.*, 2021), with even more limited knowledge on EMSs among clinical samples of adolescents. Beyond individual EMSs, the schema domains have been under exploration in some studies on the mental health of adolescents and young adults. A recent meta-analysis by Tariq *et al.* (2021) presents evidence for the domains Impaired Autonomy and Performance, and Disconnection and Rejection, to be associated with depressive symptoms. Impaired Autonomy and Performance has also been reported to associate with adolescents' anxiety symptoms (Orue *et al.*, 2014; Saritas-Atalar and Altan-Atalay, 2020). In addition, Tariq *et al.* (2021) suggest that the association between EMS and depression is slightly stronger in adolescents compared with young adults, indicating that the role of EMSs possibly varies across different developmental periods.

This study aims to explore adolescent EMSs, especially EMS domains and their relations to depressive and anxiety symptoms in a clinical sample. We hypothesize that EMSs in adolescence would be associated with depressive and anxiety symptoms similar to adult populations. In a clinical population, such an association could be important to consider when planning treatment for adolescents' anxiety and depressive symptoms.

Method

Procedure and participants

Study participants were recruited from first-visit patients referred to adolescent psychiatry outpatient clinics at the Satakunta Hospital District, Finland between November 2017 and December 2018. No particular inclusion or exclusion criteria were utilized in order to have a sample representing actual patient material as accurately as possible. The staff that met each patient gave information on the study, provided a participant information sheet and offered the possibility to participate. The participants provided written informed consent, and for those aged under 15, their guardians also gave their consent. From 749 eligible first-visit patients (aged 13–22 years), the final study population ($n = 176$) consisted of participants from whom the reports of depressive and anxiety symptoms and EMSs were available.

Measures

Background factors collected with a self-report questionnaire included age, gender (male or female), living arrangements (with both biological parents; with one biological parent; living alone or other), and current educational status (in comprehensive school; in upper secondary education or higher education; other, including working or current military service).

EMSs were assessed using the Finnish version of the Young Schema Questionnaire-Short Form 2-Extended (YSQ) consisting of 90 items that cover 18 EMSs. Depressive symptoms were collected with the Finnish translation of the Beck Depression Inventory II (BDI). The scale consists of 21 items that are scored between 0 and 3, with a possible range of scores between 0 and 63. Anxiety symptoms were measured with the Finnish translation of the Overall Anxiety Severity and Impairment Scale (OASIS). It is a 5-item self-report questionnaire with each item scoring between 0 and 4, thus giving an overall score range of 0−20. The internal consistencies for all the measures

https://doi.org/10.1017/S1352465824000432 Published online by Cambridge University Press

Table 1. General linear models for the schema domains and depressive and anxiety symptoms controlled with associated background factors

	BDI			OASIS		
	F	*p*	η^2p	*F*	*p*	η^2p
Corrected model predictor	28.791	<0.001	0.547	19.672	<0.001	0.452
Disconnection and Rejection	8.252	0.005	0.047	0.348	0.556	0.002
Impaired Autonomy and Performance	13.353	<0.001	0.074	8.143	0.005	0.046
Excessive Responsibility and Standards	2.779	0.097	0.016	9.558	0.002	0.054
Impaired limits	9.357	0.003	0.053	3.683	0.057	0.022
Gender	3.414	0.066	0.020	4.022	0.047	0.024
Educational level	3.580	0.060	0.021	1.930	0.167	0.011
	$R^2 = 0.547$, Adj. $R^2 = 0.528$			$R^2 = 0.452$, Adj. $R^2 = 0.429$		

BDI, Beck Depression Inventory II; OASIS, Overall Anxiety Severity and Impairment Scale.

were from acceptable to excellent (BDI $\alpha = 0.941$; OASIS $\alpha = 0.89$; EMS domains $\alpha = 0.819$–0.953).

Statistical analyses

Normality was assessed with the Shapiro–Wilk test. Differences between categorical background factors and the outcome variables were compared with the Mann–Whitney *U*-test and Kruskal–Wallis tests. Spearman's correlation was used for non-normal continuous variables. The significant associations ($p<0.05$) between the EMS domains and outcome variables (BDI and OASIS) were explored with the general linear model (GLM). Analyses were computed using IBM SPSS 28.0.

Results

Most study participants were female ($n = 120$, 68.18%). The living arrangements and educational level were distributed quite equally among participants. The BDI scores were significantly higher among females (Md = 28.43, IQR = 18) than males (Md = 22.54, IQR = 20) ($U = 2274.50$, $p<0.001$). The OASIS scores were similarly higher among females (Md = 12.00, IQR = 6.00) than males (Md = 9.00 IQR = 7.75) ($U = 2148.00$, $p<0.001$).

All four EMS domains were significantly positively correlated with depressive and anxiety symptoms. In GLM, depressive symptoms were associated with the EMS domains Disconnection and Rejection ($\eta^2p = 0.047$, $p = 0.005$), Impaired Autonomy and Performance ($\eta^2p = 0.074$, $p<0.001$) and Impaired Limits ($\eta^2p = 0.053$, $p = 0.003$) when controlling for background variables. Anxiety symptoms were associated with the EMS domains Impaired Autonomy ($\eta^2p = 0.046$, $p = 0.005$), Excessive Responsibility and Standards ($\eta^2p = 0.054$, $p = 0.002$) but not with other domains. Gender remained a statistically significant predictor for anxiety symptoms in the model ($\eta^2p = 0.024$, $p = 0.047$). Table 1 presents the associations between EMS domains and depressive and anxiety symptoms.

Discussion

Several EMS domains were associated with depressive and anxiety symptoms in a sample of adolescent out-patients in this study. The EMS domains Disconnection and Rejection and Impaired Autonomy and Performance have been linked to depressive symptoms in adolescence also in previous non-clinical samples (Orue *et al.*, 2014; Tariq *et al.*, 2021) as well as among young adults (Saritas-Atalar and Altan-Atalay 2020). To our knowledge, the association between

https://doi.org/10.1017/S1352465824000432 Published online by Cambridge University Press

depressive symptoms and the Impaired Limits domain has not been observed previously among adolescents, but for adults some evidence for such association is reported in the literature.

Disconnection and Rejection has been described as one's expectations not being met in a predictable way in relation to one's needs, e.g. for security, safety, empathy, and acceptance. The central elements of Disconnection and Rejection relate tightly to depressive ideation and feelings of a lack of acceptance, security, and stability within relationships. Furthermore, the Impaired Autonomy and Performance refers to one's belief in one's ability to function independently and to survive alone or demonstrate success (Young *et al.*, 2003). Additionally, Impaired Autonomy and Performance reflects an ideation of an impaired ability to cope and, thus, excess catastrophic ideation and fear, leading to dependence on others – ideation typical for individuals with depressive symptoms (Tariq *et al.*, 2021.) Overall, the EMS domains Disconnection and Rejection and Impaired Autonomy and Performance potentially disturb not only the natural course of developing satisfying interpersonal relationships in adolescence, but also the central developmental task of building independence. Forming and maintaining satisfying peer relationships are crucial developmental tasks in adolescence and are associated with gaining autonomy and being able to deepen relationships with others. Thus, if these developmental tasks are strongly interfered by EMSs for example, their potential influence might become longstanding.

Impaired Limits relates not only to a lack of responsibility to others, but also to internal limits with vague future goals. Individuals with pronounced Impaired Limits often have difficulties cooperating with others due to lack of respecting their rights and a diminished ability to make commitments (Young *et al.*, 2003). Previous research has been scarce on the links between schema domains and depression among adolescents. In extant studies the association between Impaired Limits and depressive symptoms has not been found (Saritas-Atalar and Altan-Atalay, 2020). However, an adolescent drifting into conflictual situations with others and having difficulties making commitments might be facing repeatedly negative feedback from the environment.

Beyond negative feedback from others, a negative feedback loop can also be an intrinsic process. Lack of future goals and a commitment to pursue them along with their peers, e.g. in school, might be linked to lack of intrinsic motivation. It is possible that negative experiences in interpersonal relations may further deepen depressive symptoms. Thus, Impaired Limits with associated depressive symptoms may potentially create a vicious cycle. Orue *et al.* (2014) found that brooding rumination – experiencing the same negative emotions repetitively – mediated the association between the schema dimension with schemas of Subjugation, Self-Sacrifice, and Approval Seeking, and depressive and anxiety symptoms. These schemas are distributed to the domains Impaired Autonomy and Performance (Subjugation), Excessive Responsibility (Subjugation and Self-Sacrifice), and Impaired Limits (Approval Seeking) in a four-domain model by Bach *et al.* (2017). Thus, possibly overlapping depressive symptoms exist for various EMS domains. This is plausible because depressive symptoms cover a relatively comprehensive set of features that affect the general ability of adolescents to function (Orue *et al.*, 2014).

Similarly to our study, Impaired Autonomy and Performance has been associated with anxiety symptoms (Saritas-Atalar and Altan-Atalay, 2020). Impaired Autonomy and Performance includes ideation of excessive fear of adverse events that one is unable to prevent and an impaired ability to cope in times of distress. Thus, it seems intelligible that this domain is associated with anxiety symptoms that reflect very similar central ideation and emotional impacts. Furthermore, the associations between adolescents' anxiety symptoms with both Excessive Responsibility and Standards and Impaired Autonomy that were detected in the current study, are not as firmly stated in previous literature. However, some evidence for association between Impaired Autonomy and anxiety among adults has been reported previously (Saritas-Atalar and Altan-Atalay, 2020). Orue *et al.* (2014) reported the separate EMSs Subjugation and Self-Sacrifice to associate with anxiety symptoms in adolescence, and these EMSs are included in Excessive Responsibility and Standards. Excessive Responsibility and Standards also includes the EMS domain Unrelenting Standards that reflects a tendency for perfectionism, even obsessive attention

https://doi.org/10.1017/S1352465824000432 Published online by Cambridge University Press

to details, and a critical attitude towards self and others in order to avoid criticism. It is likely that these features may complicate forming satisfying peer relationships, and thus increase anxiety when the important psychosocial developmental tasks regarding connectedness with peers are not fulfilled properly.

To summarize, as adolescence is a vulnerable phase with important developmental tasks, but also as an increasing risk for many mental health disorders, it is undoubtedly a central time period to investigate the role of EMSs as potential pre-disposing factors for mental health outcomes. Further studies on the association between EMSs and anxiety and depressive symptoms in clinical populations could be relevant in consideration when planning individual treatment, such as psychotherapeutic approaches, for patients.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S1352465824000432

Data availability statement. The data that support the findings of this study are not openly available for sensitivity reasons. However, they are available from the corresponding author upon reasonable request.

Acknowledgements. None.

Author contributions. **Hanna Ahrnberg:** Conceptualization (equal), Formal analysis (lead), Methodology (lead), Writing - original draft (lead), Methodology (lead), Writing - original draft (lead); **Jallu Lindblom:** Writing - review & editing (equal); **Riittakerttu Katiala:** Writing - review & editing (equal); **Max Karukivi:** Conceptualization (equal), Funding acquisition (lead), Methodology (equal), Resources (lead), Supervision (lead), Writing - review & editing (equal).

Financial support. The Finnish Cultural Foundation's Satakunta Regional Fund, the Signe & Ane Gyllenberg Foundation, the Emil Aaltonen Foundation, the University of Turku, and State Research Grants issued by Satasairaala Hospital financially supported this study. The funders had no role in designing the study; collecting, analysing, or interpreting the data; or writing the manuscript.

Competing interests. The authors have no competing interests to declare.

Ethical standards. The Ethics Committee of the Hospital District of Southwest Finland approved the study protocol (ETMK 89/1801/2017). All participants gave written, informed consent, and the guardians of those aged under 15 also gave their consent. The guardians of the 15- to 17-year-old participants received a written notification of their participation.

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Cite this article: Ahrnberg H, Lindblom J, Kaltiala R, and Karukivi M (2024). Early maladaptive schemas, depression and anxiety in adolescent psychiatric out-patients. *Behavioural and Cognitive Psychotherapy*. https://doi.org/10.1017/S1352465824000432