



ORIGINAL ARTICLE

## Early maladaptive schemas and suicidal ideation in depressed patients



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### Abstract

**Background and objectives:** Suicidal ideation is a key risk factor for suicidal behaviour among depressed individuals. To explore underlying cognitive patterns associated with suicidal ideation, the present study compared early maladaptive schemas (EMSs) among psychiatric outpatients in treatment for major depressive disorder with and without current suicidal ideation. **Methods:** The sample consisted of 79 depressed patients who responded to the background questionnaire and completed the Young Schema Questionnaire short form-extended, 21-item Beck Depression Inventory and Beck Hopelessness Scale.

**Results:** Patients with suicidal ideation were more maladaptive in respect to the majority of EMSs compared to those without. After controlling for the concurrent depressive symptom severity and hopelessness 'Vulnerability to Harm or Illness' EMS, which concerns catastrophising beliefs, remained a predictor for suicidal ideation.

**Conclusion:** EMSs may contribute to suicidal ideation among depressed individuals regardless of their mood and future orientation. These results offer implications for the assessment and treatment of suicidality.

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## Introduction

The association between depression, suicidal behaviours and suicidal ideation has been documented extensively.<sup>1–3</sup> Over half the patients with major depressive disorder (MDD) have suicidal ideation and suicidal thoughts tend to be persistent.<sup>3,4</sup> Psychological factors related to suicidal ideation among depressed individuals have received less attention from researchers than nonfatal suicidal attempts or behaviours. Better knowledge of underlying factors in suicidal ideation could aid in suicide prevention, since suicidal ideation often precedes suicidal behaviour among depressed individuals.<sup>3,5</sup> In particular, the severity of depressive symptoms and hopelessness has been linked with suicidal ideation.<sup>2,3,6</sup> However, several other factors, such as a history of nonadherence, low levels of social and occupational functioning, low social support and reluctance to admit mental health problems also contribute to suicidal ideation.<sup>3,6,7</sup>

Exploring underlying cognitive patterns could offer further insight into the relationship between suicidal ideation and depression. Recent studies have associated early maladaptive schemas (EMSs) with both depression<sup>8–10</sup> and suicidal behaviours in clinical populations.<sup>11–13</sup> In schema theory<sup>14</sup> EMSs are defined as stable, trait-like self-perpetuating cognitive patterns that influence thinking and behaviour in a dysfunctional way. EMSs are theorised to emerge from unmet basic needs and traumatic experiences during childhood, combined with the individual's emotional temperament; when triggered, schemas dominate thoughts and feelings, leading to negative emotions and dysfunctional thoughts.<sup>14</sup> A total of 18 EMSs have been defined, which are further categorised under five broader schema domains and can be measured using the Young Schema Questionnaire.<sup>14</sup> Brief descriptions of EMS domains are presented in Table 1.

Schemas are thought to represent the deepest level of dysfunctional cognitions.<sup>14</sup> In accordance with the schema theory, EMSs have demonstrated high stability over time in depressed patients also after controlling for severity of depression.<sup>8,9</sup> The EMSs from the 'Disconnection and Rejection' and 'Impaired Autonomy and Performance' schema domains in particular have been associated with depression.<sup>8–10</sup> Depression-related EMSs are consistent with the cognitive model of depression, and place beliefs of failure, loss, and worthlessness at the core of depressive symptoms.<sup>8</sup> Even though studies on clinical populations indicate associations between EMSs and suicidality,<sup>11,12</sup> research focusing on suicidal ideation and EMSs has been sparse. Previously EMSs have been shown to correlate with suicidal ideation in a sample of chronically traumatised patients.<sup>13</sup> To the best of our knowledge no study has explored the associations between EMSs and suicidal ideation in depressed patients, or in respect to concurrent depressive symptom severity and hopelessness. Given that both EMSs and suicidal ideation are associated with the severity of depressive symptoms,<sup>2,6,8,10</sup> we hypothesised that suicidal ideation would be closely connected to depression-related EMSs.

The aim of the present exploratory study was to assess 1) if EMSs among psychiatric outpatients in treatment for MDD differ by presence of current suicidal ideation, 2) if EMSs associated with suicidal ideation are similar to those previously associated with depression, and 3) whether specific

**Table 1** Definitions of early maladaptive schema (EMS) domains by Young and colleagues.<sup>14</sup>

- 1) *Disconnection and Rejection domain*: Schemas involving expectations that one's needs for security, safety, and stability will not be met. Includes EMSs: Abandonment/Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame and Social Isolation/Alienation
- 2) *Impaired Autonomy and Performance*: Schemas involving expectations that one's ability and capacity to separate, survive, cope independently, or perform successfully will be impaired. Includes EMSs: Dependence/Incompetence, Vulnerability to Harm or Illness, Enmeshment/Underdeveloped Self and Failure
- 3) *Impaired Limits*: Schemas involving difficulties in setting internal limits, feeling responsibility, or setting long-term goals. Includes EMSs: Entitlement/Grandiosity and Insufficient Self-control/Self-discipline
- 4) *Other-directedness*: Schemas where others' needs, desires, or responses are respected and taken into account at the expense of one's own needs. Includes EMSs: Subjugation, Self-sacrifice and Approval-seeking/Recognition-seeking
- 5) *Overvigilance and Inhibition*: Schemas where spontaneous feelings and impulses are suppressed and replaced by rigid, internalised rules about performance and behaviour. Includes EMSs: Negativity/Pessimism, Emotional Inhibition, Unrelenting Standards/Hypercriticalness and Punitiveness

EMSs predict suicidal ideation when the effects of severity of depression and hopelessness are taken into account.

## Methods

### Participants and procedures

The present study was based on data from a naturalistic follow-up study on psychiatric outpatients with MDD (aged 18–65 years) recruited from the Department of Psychiatry at Kuopio University Hospital. At baseline, the diagnosis of MDD was confirmed by trained mental health professionals using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I).<sup>15</sup> Patients suffering from epilepsy, bipolar disorder, psychotic depression or other psychotic disorders and depression related directly to somatic conditions or substance abuse were excluded from the study. Of the initial 100 patients, 79 (58.2% women) participated to the present study phase, i.e., 5–13 months after the baseline assessment (mean 8.40 months, SD 2.30). We observed no differences in gender ( $p=0.630$ ), marital status ( $p=0.594$ ), severity of depression ( $p=0.585$ ) or age at first depressive episode ( $p=0.663$ ) between participants of the present study phase and non-participants. Participants were older than non-participants (mean age 40.53 years, SD 11.73 vs. 34.29 years, SD 12.20,  $p=0.034$ ). At the time of the present study phase, SCID-I was repeated and participants completed the study questionnaire and measurements for EMSs, depression and hopelessness. Out of

the 79 patients, 57.7% met diagnostic criteria for MDD, and 42.3% were in full or partial remission according to SCID-I. All participants provided written informed consent before entering the study. The study protocol was accepted by the Research Ethics Committee of the Northern Savo Hospital District.

## Measures

The study questionnaire gathered information on demographic variables and illness history (sex, age, marital status, age at first depressive episode and number of lifetime MDD episodes). The Young Schema Questionnaire short form-extended (YSQ-S2-extended) was used to measure 18 different EMSs. The questionnaire contains 90 self-statements (five for each schema), which respondents are asked to rate on a Likert scale ranging from 1 (completely untrue) to 6 (describes perfectly). EMS subscales were used as continuous variables based on the mean of the five schema statements. The factor structure and reliability of the Finnish version of the YSQ-S2-extended have been established by Saariaho et al.<sup>16</sup> In the present study, the internal reliability coefficient alpha ranged from 0.74 to 0.95 for all 18 EMS subscales (median  $\alpha = .88$ ).

The 21-item version of the Beck Depression Inventory (BDI-21)<sup>17</sup> was used to measure the severity of depression. One of its items (i.e., number 9) concerning suicidal thoughts and wishes was used to assess suicidal ideation. Absence of suicidal ideation was based on the response alternative, 'I don't have any thoughts of killing myself', and current suicidal ideation was based on the following three responses: 1) 'I have thoughts of killing myself, but I would not carry them out'; 2) 'I would like to kill myself'; and 3) 'I would kill myself if I had the chance'. Thus, suicidal ideation was defined in agreement with Diekstra and Garnefski<sup>18</sup> as cognitions varying from transient thoughts about the worthlessness of life and death wishes to concrete plans for killing oneself and obsessive preoccupation with self-destruction. In calculating BDI scores, the suicidality item was excluded (BDI range 0–60). Hopelessness was measured using the Beck Hopelessness Scale<sup>19</sup> (HS), which is a 20-item rating scale measuring negative expectancies concerning oneself and one's future life. The total score of HS ranges from 0 to 20, with higher score indicating higher level of hopelessness.

## Data analysis

Differences between patients with and without suicidal ideation were examined using the  $\chi^2$  test for categorical variables and the *t* test for continuous variables. The magnitude of difference in the EMS subscale scores was calculated using Cohen's *d* as a measure of effect sizes (small if  $d=0.2$ , medium if  $d=0.5$  and large if  $d=0.8$ ).<sup>20</sup> Patients with suicidal ideation were used as a reference group with positive or negative effect sizes indicating, respectively, higher or lower EMS scores in this group. Each EMS subscale found to be significantly associated with suicidal ideation in univariate analysis was further analysed in multivariate logistic models. In additional analyses, any of the demographic and clinical variables that differed

significantly between the two groups were used as covariates due to their connection with suicidal ideation. All statistical tests were two-tailed, and analyses were conducted with the SPSS statistical package (IBM® SPSS® Statistics version 22.0).

## Results

A total of 60.8% of patients suffered from current suicidal ideation. The demographic characteristics and clinical variables between patients with and without suicidal ideation are presented in Table 2. There were no statistically significant differences between the groups in terms of age, gender, marital status, the mean age at the first depressive episode or the number of lifetime depressive episodes. Those with current suicidal ideation were significantly more depressed (BDI means 27.7 (SD 9.7) vs. 14.3 (10.8),  $t=5.50$ ,  $p<0.001$ ) and hopeless (HS means 12.6 (SD 5.6) vs. 6.3 (4.4)  $t=5.34$ ,  $p<0.001$ ) than those without.

Patients with suicidal ideation scored significantly higher on 11 out of the 18 EMS subscales with at least moderate effect sizes (Table 3). The largest differences in EMS subscales between the groups were in 'Vulnerability to Harm or Illness' and 'Dependence/Incompetence' EMSs from 'Impaired Autonomy and Performance' schema domain and 'Defectiveness/Shame' and 'Social isolation/Alienation' EMSs from 'Disconnection/Rejection' schema domain. Moderate differences were observed also in EMSs from 'Other-Directedness' and 'Overvigilance and Inhibition' schema domains.

Because those with suicidal ideation were significantly more depressed and hopeless, BDI and HS scores were included as covariates in logistic models with significant EMS subscales as predictors of suicidal ideation. In the logistic models with BDI and HS, only the EMS subscale 'Vulnerability to Harm or Illness' remained statistically significant in respect to suicidal ideation ( $p=0.037$ ). This particular model was statistically significant ( $\chi^2(3)=32.31$ ,  $p=0.049$ ) explaining 48.6% (Nagelkerke  $R^2$ ) of the variance in suicidal ideation and correctly classified 88.9% of cases. Neither BDI ( $p=0.127$ ) or HS ( $p=0.378$ ) were significant in this model.

## Discussion

A wide range of subscales for early maladaptive schemas were associated with suicidal ideation among depressed patients, but only 'Vulnerability to Harm or Illness' EMS predicted current suicidal ideation independently from depression and hopelessness. Given the exploratory nature of the present study, these findings should be considered as preliminary and need to be replicated in larger samples. However, results support prior research suggesting that EMSs may relate to suicidality,<sup>11–13</sup> while the role of depressive symptoms and hopelessness in suicidal ideation has already been established.<sup>3–5</sup>

The 'Vulnerability to Harm or Illness' subscale concerns catastrophising beliefs and exaggerated fears of irrationally negative forecasted life-events (such as imminent medical, emotional or external catastrophes).<sup>14</sup> Our results suggest, that catastrophising core beliefs could act as an

**Table 2** Demographic and clinical characteristics of depressed patients by suicidal ideation.

	With suicidal ideation (n = 48)	Without suicidal ideation (n = 31)	Statistics
<i>Demographics</i>			
Gender (% women)	64.6%	48.4%	$\chi^2 = 2.03, p = 0.154$
Mean age (SD) in years	42.4 (11.0)	39.4 (12.8)	$t = 1.12, p = 0.267$
<i>Marital status (% of total)</i>			
Single	37.5%	32.3%	$\chi^2 = 1.95, p = 0.377$
Married	43.8%	58.1%	
Divorced	18.8%	9.7%	
<i>Clinical characteristics</i>			
Mean BDI-21 (SD)	27.7 (9.7)	14.3 (10.8)	$t = 5.50, p < 0.001$
Mean HS (SD)	12.6 (5.6)	6.3 (4.4)	$t = 5.34, p < 0.001$
Mean age (SD) at first depr. episode	27.1 (13.5)	27.6 (14.4)	$t = -0.17, p = 0.867$
<i>Lifetime MDD episodes (% of total)</i>			
One episode	39.6%	35.5%	$\chi^2 = 0.21, p = 0.977$
Two episodes	16.7%	16.1%	
Three episodes	18.8%	19.4%	
Four or more episodes	25.0%	29.0%	

Note: SD, standard deviation; BDI-21, 21-item Beck Depression Inventory (item 9 omitted, range 0–60); HS, Beck Hopelessness Scale.

**Table 3** Early Maladaptive Schema subscales<sup>a</sup> in depressed patients by suicidal ideation.

Early Maladaptive Schema	With suicidal ideation (n = 48) Mean (SD)	Without suicidal ideation (n = 31) Mean (SD)	p	d
<i>Disconnection and Rejection domain</i>				
Abandonment/Instability	3.2 (1.5)	2.6 (1.5)	0.071	0.40
Mistrust/Abuse	3.0 (1.3)	2.1 (1.1)	0.002	0.75
Emotional Deprivation	3.8 (1.3)	2.8 (1.5)	0.004	0.71
Defectiveness/Shame	3.1 (1.5)	2.0 (1.0)	<0.001	0.86
Social Isolation/Alienation	3.7 (1.4)	2.4 (1.4)	<0.001	0.93
<i>Impaired Autonomy and Performance domain</i>				
Dependence/Incompetence	2.8 (1.1)	1.7 (0.9)	<0.001	1.09
Vulnerability to Harm or Illness	3.1 (1.2)	1.7 (1.0)	<0.001	1.27
Emmeshment/Underdeveloped Self	2.0 (1.1)	1.5 (0.8)	0.062	0.52
Failure	3.3 (1.6)	2.5 (1.5)	0.026	0.52
<i>Impaired Limits domain</i>				
Entitlement/Grandiosity	1.9 (0.8)	1.7 (0.7)	0.127	0.27
Insufficient Self-control/Self-discipline	2.7 (0.9)	2.3 (1.1)	0.079	0.40
<i>Other-Directedness domain</i>				
Subjugation	2.5 (1.1)	1.9 (1.0)	0.011	0.57
Self-sacrifice	4.0 (1.2)	3.4 (1.1)	0.047	0.52
Approval-seeking/Recognition-seeking	3.5 (1.0)	3.2 (1.2)	0.331	0.27
<i>Overvigilance and Inhibition domain</i>				
Negativity/Pessimism	4.1 (1.1)	3.1 (1.4)	0.001	0.79
Emotional Inhibition	2.6 (1.4)	2.3 (1.2)	0.296	0.23
Unrelenting Standards/Hypercriticalness	3.8 (1.3)	3.3 (1.3)	0.073	0.38
Punitiveness	3.6 (1.3)	2.6 (1.3)	0.001	0.77

<sup>a</sup> Subscales of the Young Schema Questionnaire short form-extended (YSQ-S2-extended).

independent risk factor for suicidal ideation among depressed individuals. Suicidality and suicidal ideation have been proposed to represent a particular pattern of information processing, which arises from feelings of entrapment and a sense of no escape.<sup>21</sup> Theoretically, fear

of unpreventable catastrophes could create a sense of no control over one's life, which could induce hopelessness, depressed mood and suicidal thought processes.

In general, patients with suicidal ideation had consistently higher subscale scores in the majority of EMSs in

the domains of 'Disconnection and Rejection' and 'Impaired Autonomy and Performance'. These domains deal with beliefs related to inadequate acceptance or security and impaired ability to survive and cope.<sup>14</sup> Moderate differences were observed in the EMS subscales of 'Subjugation' and 'Self-sacrifice' from the 'Other-Directedness' domain and in 'Negativity/Pessimism' and 'Punitiveness' from the 'Overvigilance and Inhibition' domain. The first domain places excessive focus on feelings of others, and the second overemphasises suppression of one's feelings.<sup>14</sup> Higher EMS subscale scores observed among those with suicidal ideation were similar to those previously associated with severity of depressive symptoms<sup>8–10,22</sup> and support our hypothesis that suicidal ideation in depressed patients is closely connected to more general depression-related maladaptive cognitive patterns.

Schema theory proposes that EMSs rise from traumatic experiences and unmet needs during childhood and adolescence.<sup>14</sup> Considering the notable stability of depression-related EMSs<sup>9</sup> and strong connection between childhood adversities, depression<sup>23</sup> and suicidality,<sup>24</sup> high EMS scores in patients with suicidal ideation may be related to earlier traumatic life experiences. Further research should focus on clarifying possible mechanisms between early life adversities, EMSs, suicidal ideation and depression.

There are important limitations to this study that should be considered. First, suicidal ideation was assessed using single question instead of a scale or structured interview. Second, cross-sectional study setting does not allow causal conclusions. Third, sample size was relatively small, which may affect the generalisability of our findings. Therefore, further replications with larger samples and structured assessment of suicidal ideation are needed.

In conclusion, the present study showed that catastrophising cognitive schema may be of particular importance in suicidal ideation among depressed patients. Furthermore, suicidal ideation was found to be associated with several maladaptive cognitive patterns, which are connected to concurrent depressive symptom severity and hopelessness. From a clinical perspective, assessing EMSs may be especially relevant when psychological factors related to suicidal ideation are been identified. Results also highlight the possibility that, in addition to targeting depression and hopelessness, focusing interventions on catastrophising cognitive patterns could be beneficial when treating suicidality among depressed patients. In order to apply these findings into clinical practice, further replications and expanding of the results are, however, needed.

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## Conflicts of interest

Authors none were declared.

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