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Coping behaviours as a major predictive factor for improvement in major depression at 5-year follow-up in a Swiss community sample of adults

Short title: Predictive factors of improvement in depression after 5 years

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Abstract *(250 words)*

Purpose: Given the broad range of biopsychosocial difficulties resulting from Major Depressive Disorder (MDD), reliable evidence for predictors of improved mental health is essential, particularly from unbiased prospective community samples. Consequently, potential clinical and non-clinical predictors of improved mental health, defined as an absence of current MDE at follow-up, were examined over a 5-year period in a community sample.

Methods: The longitudinal population-based PsyCoLaus study from the city of Lausanne, Switzerland, was used. Subjects having a lifetime MDD with a current Major Depressive Episode (MDE) at baseline assessment were selected, resulting in a subsample of 210 subjects. Logistic regressions were applied to the data.

Results: Coping behaviours were the most important predictive factors in the present study. More specifically, low emotion-oriented coping and informal help-seeking behaviour at baseline were associated with the absence of an MDD diagnosis at follow-up. Notably, the partitioning of depression into subtypes did not show differential associations and only a trend-level association was found between regular physical activity and the absence of MDD diagnosis at follow-up.

Conclusions: The paramount role of coping behaviours as predictors of improvement in depression found in the present study might be a valuable target for resource-oriented therapeutic models. On the one hand, the positive impact of low emotion-oriented coping highlights the utility of clinical interventions interrupting excessive mental ruminations during MDE. On the other hand, the importance of informal social networks raises questions regarding how to enlarge the personal network of affected subjects and on how to best support informal caregivers.

Keywords: Depression, epidemiology, prospective study, population survey.

Introduction

Understanding the circumstances of improved mental health state in individuals with Major Depressive Disorder (MDD) is a crucial public health concern, given that this disorder represents a highly prevalent mental illness and is associated with high levels of individual suffering and enormous burdens on society [1-3]. A large number of studies have focused on the risk factors for poor MDD outcomes, such as relapse [e.g., 4,5-7], recurrence [e.g., 8,9-11], or, with a focus on the current episode, persistence [e.g., 12,13,14]. In contrast, there is less evidence on predictive factors of positive outcomes, such as remission states/recovery [e.g., 15,16,17], apart from the knowledge logically derived from risk factors, such as baseline severity, and comorbidity [18], which can be seen as the other side of the same coin. Yet it is important to gain more knowledge about relevant predictive factors – particularly for resource-oriented therapeutic models [19] – in order to help individuals improve their mental health state. The generalization of recent findings is, however, limited by the fact that the few existing studies focusing on remission states/recovery have used clinical samples [20-22]. Knowledge from representative community samples is rather sparse, despite its high potential external validity.

A recent community study addressed this limitation by examining non-clinical predictors on time to remission over a 12-year period [23]. The results indicate that a history of childhood physical abuse is significantly associated with longer time to remission, whereas lack of social support and presence of pain and migraines show trend-level associations. On the other hand, no single demographic variable was related to time to remission [23]. Clinical and depression-related factors (i.e., depression history, index episode severity, index comorbidity, and personality factors including low neuroticism and coping styles) were shown to have an impact on depression outcomes in clinical-based studies [13,24-26]. Of the commonly distinguished problem-oriented and emotion-oriented coping styles [27], emotion-oriented coping (EOC) was specifically correlated with depression [28,29]. While EOC is geared towards managing the negative emotions often generated by stressful circumstances, problem-oriented coping (POC) is geared towards changing the stressful situation itself [30]. Moreover, level of

education, marital status, physical activity, younger age, less childhood adversity, gender (at least in some studies), and social support were associated with remission/positive depression outcomes [26,23,31]. The issue of social support needs to be complemented by help-seeking behaviour, considering that subjective willingness to seek help and the personal feelings and beliefs about receiving aid from others is the most direct predictor of whether or not a person receives help [32]. Based on this evidence, we conclude that both clinical and non-clinical variables should be considered in community surveys.

Little is known about remission/recovery from depression subtypes to date, despite growing evidence demonstrating that MDD is highly heterogeneous comprising different clinical symptom subtypes [33]. Recent studies based on clinical samples have accounted for the remission of depression symptom subtypes by focusing on reduction of symptom severity scales after antidepressant treatment interventions [34-37]. In the recent longitudinal study of Lamers et al. [38], involving a combined clinical and community sample, baseline severity differentiated between depression subtypes, with an unfavourable course for the atypical subtype (regarding somatic health) and the melancholic subtype (regarding suicidal thoughts and anxiety) compared to the control and moderate groups, while the trajectories of the severe subtypes mostly ran parallel over the 6-year time-period. To our knowledge, no study has yet considered symptom-based depression subtypes as predictors of remission in a pure community sample of adults.

Taken together, the studies above highlight the importance of identifying factors that predict positive outcomes of individuals suffering from MDD in community samples. Therefore, we sought to investigate potential predictive factors of improved mental health over a 5-year period in a prospective, population-based sample of adults meeting criteria for lifetime MDD with a current Major Depressive Episode (MDE) at baseline. The extensive collection of data enabled us to investigate a broad spectrum of potential clinical and non-clinical predictors, including a series of childhood and disorder-related factors, behavioural and personality characteristics as well as the body mass index (BMI).

Material and methods

Study design and participants

The data for this article stemmed from CoLaus|PsyCoLaus, a prospective cohort study designed to study mental disorders and cardiovascular risk factors in the community and to determine their associations. The methodological features of this study have been already described in detail [39,40]. The original sample of 6734 subjects was randomly selected from the 35- to 75-year-old residents of the city of Lausanne (Switzerland) between 2003 and 2006 according to the civil register. Sixty-seven percent of the 35- to 66-year-old participants who underwent the physical exam ($n = 5535$) also accepted the psychiatric evaluation, resulting in a sample of 3719 individuals in the baseline assessment (T_0). All subjects were also invited to participate at the first follow-up (T_1), which took place between 2009 and 2013. A total of 5064 subjects participated in the physical and 4004 subjects in the psychiatric follow-up evaluations.

The present analyses relied on those subjects who fulfilled the criteria of lifetime MDD with a current MDE at T_0 ($n = 293$) who also took part in the psychiatric follow-up evaluation T_1 (n=210). Moreover, analyses comprising the Problem Resolution Strategy questionnaire needed to be restricted to a smaller subsample ($n = 144$), since this questionnaire was only completed by a subgroup of participants.

The study was approved by the Institutional Ethics Committee of the University of Lausanne. According to the declaration of Helsinki, all participants signed written informed consent after being informed about the goal and funding of the study.

Measurements

Mental disorders

Information on mental disorders and their characteristics, treatment, and illness-related factors was collected using the semi-structured Diagnostic Interview for Genetic Studies [DIGS; 41,42]. The DIGS was developed and validated by the National Institute of Mental Health (NIMH) Molecular Genetics Initiative [42] to obtain a wide spectrum of DSM-IV [43] Axis I criteria. The French version of the DIGS was modified to include sections on anxiety disorders from the Schedule for Affective Disorders and Schizophrenia – Lifetime Version (SADS-LA) [44].

The French translation of the DIGS [45] was comprehensively tested and showed excellent inter-rater (kappa = 0.93) and a slightly lower 6-week test–retest reliability (kappa =0.62) for MDD [41]. Inter-rater reliability was excellent for substance use disorders [46], and inter-rater and test-retest reliabilities were also satisfactory for the anxiety sections [47,48].

The DIGS section assessing depressive phenomenology records precise information on age of onset, the current/recent/last/most severe depressive episodes, information on course including duration of MDEs, and duration and chronology of comorbid conditions [40]. The criteria for the MDD *specifiers* according to the DSM-IV [49] were used to diagnose atypical and melancholic depressive episodes. Based on the anamnesis of the MDD lifetime diagnosis and the depressive phenomenology, atypical, melancholic, combined atypical-melancholic and unspecified depression subtypes were computed (see Glaus et al., [50] for more information).

Information on demographic characteristics at T_0 was derived from the DIGS. The Global Assessment of Functioning (GAF) score was applied at baseline. Socio-economic status (SES) was assessed using the Hollingshead scale [51].

Childhood-related factors at baseline

Information on childhood-related adversities was dichotomized into any versus none if one of the following questions was confirmed:

- did your parents fight frequently amongst themselves? (interparental violence);

- did your parents ever do anything that frightened you (like lock you in a closet)? (fear of maltreatment by parents);

- did any of the following occur before your 16th birthday: .... put in foster care? (foster care);

General childhood unhappiness was rated by the participants by answering the question "overall, how would you characterize your childhood?" on a four-point Likert scale ranging from 1 = "happy" to 4 = "very unhappy". The trauma items stemmed from the French version of the SADS-La. A cut-off of <17 years was used to define childhood trauma, which covered the events 1. accident, 2. physical assault, 3. combat and/or war, 4. witness of murder, violence or accidental death, and 5. sexual abuse.

Behavioural characteristics at baseline

The behavioural characteristics regular physical activity, and regular alcohol consumption were derived from the DIGS at baseline and led to three binary coded variables (1 = "yes"; 0 = "no"). Regular smoking was grouped into the three categories "never", "former", and "current". The definition of regular smoking required at least 5 days' smoking per week and regular alcohol consumption entailed consumption at least once a week for at least 6 months. Those participants who were physically active at least 2-3 times per week were assigned as physically active.

Personality characteristics at baseline

Subjective coping strategies were measured by the French translation of the self-rating Problem Resolution Strategy questionnaire [52,53]. This questionnaire consists of 17 items on possible reactions to problematic situations. Every item is rated on a four-level Likert scale, ranging from "very unusual for me" to "very usual for me". Perrin et al. [54] demonstrated the division of the items of the French version into the three broad domains of *emotional problem resolution strategy* (9 items), *help-seeking behaviours* (4 items) and *active problem resolution strategy* (4 items). The standardized

Cronbach's alpha coefficients were 0.65 (EOC), 0.69 (help-seeking), and 0.44 (POC), respectively [54]. Item 17 referring to professional help was excluded from the help-seeking subscale for the current study to distinguish professional help from informal help (i.e., family, friends, colleagues, neighbours). The Cronbach's alpha coefficient for this informal help subscale without item 17 was 0.74.

Assessment of physical features at baseline

The BMI providing information on adiposity was calculated as weight in kilograms divided by height in meters squared. Participants were dressed in light indoor clothes without shoes while measured and weighed. These physical measurements were taken after an 8-hour fast and after refraining from any extensive physical activity for 12 hours.

Definition of the outcome at the psychiatric follow-up

Improvement in major depression at T_1 was defined by the absence of a current MDE at T_1.

Statistical analysis

Logistic regressions for binary outcome variables [55] were applied to the data of the 210 depressive participants at T_0. The binary coded dependent variable contained information about the absence versus the presence of a current MDE at T_1. The following T_0-predictor variables were considered as variables of interest: marital status, living status, childhood-related factors (general unhappiness, adversities, trauma), disorder-related factors (age of onset of MDD, depression subtype at T_0, number of depression symptoms during the current MDE, duration of all MDE, duration of the current MDE, number of MDEs, current GAF score of all disorders at T_0, help from a doctor or other healthcare professional, psychopharmacological treatment (antidepressants), anxiety disorder at T_0, drug abuse at T_0, and number of comorbid diagnoses (lifetime)), behavioural characteristics (regular smoking, alcohol consumption, physical activity), personality characteristics (EOC, informal help-seeking behaviour, POC), and the somatic characteristic BMI.

Independent predictors were simultaneously tested in a final logistic regression model, adjusted for sex, age and SES, if they were significantly associated with MDE status at follow-up in the initial marginal logistic regression (cut-off level: p<0.20). This non-restrictive cut-off level was chosen due to the small sample sizes. In addition, this model was complemented by a model following stepwise backward selection ($p_{in} \leq 0.05$ and $p_{out} \geq 0.10$), and a model using imputed data (missing value analysis (MVA)) for the missing values in the coping variables.

The *p*-values were considered significant at <0.05. All analyses were performed using SPSS version 20 for Macintosh (SPSS Inc., USA).

Results

Among the 210 individuals meeting the criteria for lifetime MDD with a current MDE at T_0 and also taking part in the psychiatric follow-up evaluation, 65.7% were women. The mean age of this sample was 50.1 years (y) (SD = 8.1; min. 36.3 y; max. 68.6 y) and the mean SES according to Hollingshead's index was 3.1 (SD = 1.3) (a value of 3 represents a middle class). At T_1, 72.9% no longer fulfilled criteria for a MDE and were considered improved, whereas 27.1% still had ongoing MDE, either because of the persistence of the initial episode or due to the occurrence of a new episode.

Table 1 displays the results of the marginal logistic regression models yielding potential determinants of improvement in major depression. The following T_0-variables were significantly associated with the absence of a current MDE at T_1: depression subtype (i.e., the category combined atypical-melancholic subtype compared to the unspecified subtype), a lower number of depression symptoms during the current MDE, a higher GAF score of all disorders, and a lower EOC.

--Insert Table 1 about here--

Based on the cut-off criterion of p<0.2, the following variables were simultaneously included as independent predictors in the final model, adjusted for sex, age and SES: depression subtypes, number of depression symptoms during the current MDE, current GAF score of all disorders, help from a doctor or other healthcare professional, psychopharmacological treatment (antidepressants), regular physical activity, EOC and informal help-seeking behaviour (Table 2). Low EOC and high informal help-seeking coping were significantly associated with absence of MDE at T_1 in this final model. All the other predictors found in the previous marginal logistic regression models were no longer significantly associated with MDE status at T_1. Both the model following stepwise backward selection and the model using MVA confirmed that low EOC and high informal help-seeking coping were significantly associated with absence of MDE at T_1 (data not shown).

--Insert Table 2 about here--

Discussion

This longitudinal study provides important insight into predictive factors of improved mental health state in a population-based sample of depressive residents of the city of Lausanne, Switzerland. The present study examined the effects of both clinical and non-clinical variables on improved mental health state, defined as an absence of a current MDE at the end of a five-year follow-up period. The predictive effect of coping-related behaviours was demonstrated in the sense that help-seeking behaviour, which was restricted to the informal, private social environment, and decreased EOC were unequivocally associated with improvement in major depression.

Coping

Low EOC scores – but not POC scores – emerged as a predictive factor with regard to an absence of MDE at follow-up. The opposite association, i.e., the link between high EOC and depression, has been demonstrated in previous research [29,28]. The problems of EOC when dealing with one's own negative emotions/distress could be related to the concept of rumination. At least certain elements of this concept are included in the EOC subscales [27] and some theorists have argued that rumination may be one type of EOC [56]. According to Nolen-Hoeksema et al. [57-59] rumination holds the potential to exacerbate and perpetuate depressed mood. In the meantime, rumination was shown to be strongly associated with the level of distress and onset, course, and duration of depression [60-62]. Ruminative thoughts also represent a core element of the influential cognitive model of Aaron T. Beck [63], introduced nearly 50 years ago. In fact, current neurobiological research focusing on an integrated cognitive-neurobiological perspective identified possible neurobiological underpinnings of Beck's model [60]. Ruminative thoughts were associated with hyperactivity in regions involved in emotional recall (such as the amygdala and hippocampus) and hypoactivity of higher cortical regions (such as the dorsolateral prefrontal cortex), adaptively regulating lower regions and therefore resulting in inhibited top-down processes [60]. Whatever the underlying biological mechanisms are, the predictive effect of low EOC is a promising target for therapy. For example, the skill of accepting/tolerating negative emotions was particularly highlighted as being beneficial to mental

health [27]. In contrast, POC, an adaptive strategy, showed no influence on improvement in major depression in the present study. This confirms earlier findings demonstrating that adaptive emotion regulation strategies show weaker associations with psychopathology than maladaptive strategies [64].

Informal – but not formal – help-seeking behaviour was a further predictor for the absence of depression 5 years after baseline. The absence of formal help-seeking could be a result of the high age-span of the PsyCoLaus sample. In a large Norwegian population, elderly people sought less professional help than did younger ones, with a distinct drop after middle age [65], suggesting a shift from formal to informal help-seeking with increasing age. Furthermore, in a large national population-based sample, subjects tended to endorse informal rather than formal help when they were asked how they would cope in the case of psychological problems [66]. The importance of informal help-seeking was also highlighted in another community study [67] and a clinical sample [68]. It is surprising then that informal help-seeking has generally been less investigated than formal help-seeking. Considering the deterrent effect of stigma on help-seeking for mental health problems [69], a possible explanation for the beneficial effect of informal compared to formal help might be less stigma-associated stress [70]. However, this view is not supported by others, who explicitly emphasise the stigmatising effect of informal help-seeking [71]. Beyond that, the health of informal caregivers, including relatives, spouses and particularly offspring, also requires special attention, since problematic consequences occur frequently and can cause distress among caregivers [72].

In sum, coping strategies showed strong predictive validity with regard to the depression outcome. This is in line with Conradi [25] who found that, apart from the number of prior MDEs, the coping potential was the strongest predictor of time to recurrence. Considering that coping-behaviour can be seen as the behavioural expression of various personality traits as well as cross-situational beliefs (so-called *generalized expectancies)* about one's ability to terminate, e.g., a negative mood state, [73-76], it represents an important target for treatment.

Variables lacking impact on improvement in major depression

The association between regular physical activity and the absence of a current MDE at the end of the five-year follow-up period showed only a borderline significant trend. Therefore, we could only partly confirm previous studies that highlighted the positive effect of physical activity in depressive subjects [77,78,31]. Plausible explanations for this predictive trend are the ability of physical activity to "energise" and produce more positive mood, improve body image [79], enhance the social aspects of physical activity [80] and enhance immuno-neuroendocrine stabilization in subjects with dysregulated inflammatory and stress feedback [81]. Finally, the question remains as to how much physical activity is needed to produce beneficial effects on MDD: clear guidelines with regard to the exact intensity and frequency are still lacking [82]. Moreover, a systematic review and meta-analysis confirmed the short-term effect of physical exercise in clinically depressed adults, but evidence regarding long-term effectiveness is still sparse [83].

In the present paper, the depression subtypes did not differ regarding improvement in major depression. Aside from the way we defined improvement in major depression, this could have resulted from the fact that we included depression severity in the model. Melancholic depression was shown to be more severe than unspecified depression in a prospective, longitudinal community study [84]. In another study, the lower remission rates of depressives with atypical features were no longer present after adjustment for baseline characteristics [85]. The importance of baseline severity on course trajectories was recently confirmed by the longitudinal study of Lamers et al. [38]. Considering that symptom-based depression subtypes have led to inconsistent results in predicting differential outcomes of antidepressant treatments [36,35,e.g., 85] and that clear evidence concerning psychotherapeutic treatment-distinctions is still lacking, the relevance of subtyping depression with regard to specific depression outcomes thus requires further examination.

Some variables, such as neuroticism, have shown predictive effects but were nevertheless excluded from the present analysis due to combined high correlation with EOC. With regard to the lack of associations with sociodemographic variables, the current analysis supported previous evidence that

challenged the importance of sociodemographic factors in the course of depression [13,12,23]. Finally, childhood-related factors showed surprisingly little impact on improvement in major depression. Presumably, these factors would have been more relevant for a first MDE, but as the age of the current sample was quite high, the impact of childhood-related factors was not strong enough.

Limitations

There were some limitations in this investigation, which should be acknowledged. Potential bias could have resulted from our definition of improvement in major depression. The DIGS did not include enough information to distinguish between remission and recovery as defined in previous studies [86,8]. Moreover, although absence of a current MDE at follow-up is most likely linked to an improvement in mental health, we cannot ensure that this was always subjectively the case. Furthermore, we combined subjects with potentially varying depression courses without considering information on their specific individual states between T_0 and T_1, such as continuous remission, one new MDE/recurrent MDD. Beyond that, the older age of our sample precluded the opportunity to examine MDD course characteristics at a younger age. On the other hand, considering that the mean age of onset of mood disorders is situated at around 30 years [87], the present study likely captured the relevant time-span. Additionally, we only accounted for diagnosis-cut-off levels, despite some evidence showing that the presence of residual symptoms after a MDE is associated with a higher risk of relapse, recurrence, chronicity, and even suicide [88]. Also, the subjective measure of coping behaviour used in the current study might have entailed several sources of potential bias. First, a balance with regard to objective measures of received social support is warranted [89]. Second, the extent to which individuals can accurately self-report on their EOC styles has been questioned by some authors [90,91]. Third, the relationship between emotion-regulation strategies might be inflated due to item overlap with depression. However, Aldao et al. [61] showed similar patterns of results when using rumination measures with and without depression symptom overlap. Fourth, beyond the components of emotion regulation considered in our article, the entire process of emotion regulation is much more complex and can also include unconscious and physiological (i.e., rapid pulse) cognitive processes [27].

Conclusions

Long-term evidence of predictive factors for improvement in individuals affected by MDD with current MDEs is particularly relevant for resource-oriented therapeutic approaches in clinical practice. The predictors found in the current study were primarily located at the behavioural level. Low EOC as a predictive factor underlined the importance of interventions aimed at interrupting the intensive mental preoccupation during MDE by the training of alternative coping strategies. Beyond that, the present study highlighted that differentiation between formal and informal help-seeking behaviour is warranted. These findings therefore raise questions for clinical practice on how to enlarge the social network of individuals suffering from loneliness as a characteristic feature of MDD, and on how to best support informal caregivers.

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Conflict of interest

None.

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Table 1. Associations between variables at baseline (T_0) and current MDE (absence vs. presence) at follow-up (T_1) according to marginal logistic regression models ($n = 210$).

Predictors at T_0	N	Absence of current MDE at T_1		
		OR	95% CI	p
Demographics				
Sex				
Men	72	1.32	0.68–2.55	0.41
Women (ref.)	138	--	--	--
Age at baseline, y	210	1.01	0.97–1.05	0.53
Socio-economic status [1]	210	1.19	0.94–1.50	0.14
Married				
Yes	100	1.50	0.81–2.78	0.20
No (ref.)	110	--	--	--
Living status				
Living with somebody	152	1.16	0.59–2.27	0.66
Living alone (ref.)	58	--	--	--
Childhood-related factors				
General childhood unhappiness [2]	210	0.85	0.59–1.22	0.37
Childhood adversities [3]				
No	134	1.28	0.68–2.39	0.44
Yes (ref.)	76	--	--	--
Childhood trauma [4]				
No trauma <17y	190	1.51	0.57–3.99	0.41
Trauma <17y (ref.)	20	--	--	--
Disorder-related factors				
Age of onset MDD, y	210	1.01	0.99–1.04	0.22
Depression subtype at baseline				
Atypical	53	0.88	0.40–1.96	0.76
Melancholic	46	1.14	0.48–2.72	0.77
Combined atypical-melancholic	32	0.41	0.17–0.97	**0.04**
Unspecified (ref.)	79	--	--	--
Number of depression symptoms during the current MDE [5] (max. 9)	210	0.73	0.56–0.95	**0.02**

Duration of all MDEs (including current episode [5])	210	1.00	1.00–1.00	0.60
Duration of the current MDE [5]	209	1.00	1.00–1.00	0.69
Number of MDEs (including current episode [5])	210	1.01	0.95–1.08	0.67
Current GAF score of all disorders at baseline	208	1.05	1.02–1.08	**<0.001**
Help from a doctor or other healthcare professional				
Yes	160	0.53	0.24–1.17	0.11
No (ref.)	49	--	--	**--**
Psychopharmacological treatment (antidepressants)				
Yes	5	0.24	0.04–1.47	0.12
No (ref.)	205	--	--	**--**
Anxiety disorder at baseline [6]				
No	165	1.32	0.64–2.73	0.45
Yes (ref.)	44	--	--	**--**
Drug abuse at baseline				
No	203	1.84	0.30–11.31	0.51
Yes (ref.)	5	--	--	--
Number of comorbid diagnoses [7] (lifetime)	210	1.01	0.69–1.47	0.96

Behavioural characteristics

Regular smoking [8]				
Never	91	1.46	0.66–3.24	0.35
Former	71	0.86	0.39–1.91	0.71
Current (ref.)	48	--	--	**--**
Regular alcohol consumption [9]				
No	74	0.75	0.40–1.42	0.38
Yes (ref.)	130	--	--	**--**
Regular physical activity [10]				
Yes	67	1.63	0.82–3.24	0.17
No (ref.)	143	--	--	**--**

Personality characteristics

Coping				
Emotion-oriented coping	144	0.82	0.72–0.92	**<0.001**
Informal help-seeking behaviour	144	1.13	0.95–1.33	0.17
Problem-oriented coping	144	1.10	0.90–1.35	0.33
Somatic characteristic				
Body Mass Index	210	0.98	0.92–1.04	0.48

Bold: p ≤0.05
MDD: Major Depressive Disorder; MDE: major depressive episode; OR: odd ratio, CI; confidence interval,
GAF: global assessment of functioning

[1] Socio-economic status following Hollingshead's index: A value of 3 represents an SES of middle class.
[2] Rated on a Likert Scale ranging from 1 (happy) to 4 (very unhappy)
[3] Parental quarrels, fear of parental punishment, foster home
[4] Any trauma
[5] Current episode at the baseline investigation
[6] Agoraphobia, generalized anxiety disorder, panic disorder, social phobia
[7] Alcohol abuse/dependence, drug abuse/dependence, agoraphobia, generalized anxiety disorder, panic disorder, social phobia
[8] At least 5 days of smoking per week
[9] At least once a week for at least 6 months
[10] At least 2-3 times per week

Table 2. Associations between variables at baseline (T_0) and current MDE (absence vs. presence) at follow-up (T_1) according to logistic regression models with simultaneous introduction of predictor variables ($n = 143$).

Predictors at T_0	Absence of current MDE at T_1		
	*OR**	*95% CI*	*p*
Coping			
Emotion-oriented coping	0.77	0.66–0.91	**0.001**
Informal help-seeking behaviour	1.38	1.10–1.74	**0.01**
Depression subtype			
Atypical	1.19	0.37–3.84	0.77
Melancholic	1.60	0.45–5.62	0.46
Combined atypical-melancholic	1.32	0.30–5.85	0.72
Unspecified (ref.)	--	--	--
Number of depression symptoms during the current MDE (max. 9)	0.77	0.51–1.17	0.22
Current GAF score of all disorders	1.04	0.99–1.09	0.11
Help from a doctor or other healthcare professional	0.73	0.21–2.56	0.62
Psychopharmacological treatment (antidepressants)	0.10	0.01–1.69	0.11
Regular physical activity	2.48	0.94–6.57	0.07

* Adjusted for sex, age at baseline and socio-economic status

Bold: $p \leq 0.05$

MDE; major depressive episode; OR: odd ratio, CI; confidence interval; GAF: global assessment of functioning