

# Depression not only due to Post COVID-19 Syndrome: Happiness Diary & Mental Health

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## Abstract:

Research is always concerned with the topic of how to cure depressive symptoms or alleviate the symptoms. A central therapeutic goal in *cognitive behavioral therapy* is cognitive restructuring. At the behavioral level, a particular therapeutic intervention is often used to promote a more positive mindset: a positive effect on the psyche of keeping a happiness diary has already been demonstrated. The results of this work are consistent with others reported in the literature, which is why such studies should also be conducted on clinical groups. The purpose of this paper is to investigate the long-term keeping of the happiness diary and what effect this has on the depressive course symptomatology. Subjects were asked at catamnesis (6 months after the end of therapy) whether they still kept their diary reg-

ularly and were then instructed to complete the BDI-II again and return it to the practice. These scores were compared to the initial diagnostic from the patient's therapy period (pre- and post-measure-ment) and analyzed. Subjects who had not continued the happiness diary in the next 6 months after the end of therapy achieved a higher score in the BDI-II compared to the subjects who had continued the happiness diary regularly. The results of this work allow conclusions to be drawn about the importance of relapse prevention in psychotherapy.

**Definition depression**

Depression is one of the affective disorders. With the help of the classification system for mental illnesses ICD-10, various forms of progression and their different degrees of severity are distinguished (Brakemeier *et al.*, 2012).

**Treatment depression**

Every 5th employee in Germany was diagnosed with depression in 2021 (Stiftung Deutsche Depressionshilfe). Depression is easily

treatable with a recognized psychotherapy method (behavioral therapy, depth psychology-based therapy, psychoanalysis or systemic therapy) and/or a psychopharmacological therapy (Stiftung Deutsche Depressionshilfe).

According to the S3 guideline (treatment recommendation for unipolar depression), the therapy recommendation is based on the severity of the depression. In the case of a mild depressive episode, psychopharmacological therapy is not recommended. For moderate depression and

**Figure 1**  
**ICD-10**

"The criteria for a depressive episode are met if the symptoms listed below have been present for **at least 2 weeks**.

A	At least 2 (or 3 for a severe episode) of the following symptoms must be present: - . depressed mood, to a degree clearly unusual for those affected, most of the day, almost every day, and essentially unaffected by circumstances - . loss of interest or pleasure in activities that were normally enjoyable - . reduced drive or increased fatigue
B	and in addition at least one of the following symptoms is present, the total number of symptoms being at least 4-8 depending on the severity (see below) - . loss of self-confidence or self-esteem - . unfounded self-reproaches or pronounced, inappropriate feelings of guilt - . recurrent thoughts of death or suicide; suicidal behavior - . complaints about or evidence of reduced ability to think or concentrate, indecision or indecisiveness. - . psychomotor agitation or inhibition (subjective or objective) - . sleep disorders of any kind - . Loss of appetite or increased appetite with corresponding change in weight

Gradation of depression into degrees of severity			
Mild depression	.	2 Symptoms of the first 3	Total number min. 4
Moderate depression	.	2 Symptoms of the first 3	Total number min. 6
Severe depression	.	3 Symptoms of the first 3	Total number min. 8

Source: <http://www.stuedeli.net/reto/medizin/kdb/content/psychi/DepressionDefinitionTab.html>

above, combination treatment of psychotherapy and antidepressants is recommended. In evidence-based studies, cognitive behavioral therapy (CBT) and intrapersonal psychotherapy (IPT) have been shown to be the most effective. In relapse prophylaxis, CT in particular was shown to be more sustainable than medication (Niebling, W., 2011).

### Happiness diary as a KVT intervention

When keeping a happiness diary, only positive content is recorded daily in key words, e.g. successes, positive experiences, things for which one is grateful and one's own sources of strength. Keeping a happiness diary on a regular basis can help people achieve a more optimistic and mindful attitude towards life. Improvements in mood and happiness experience have already been confirmed in pilot studies (Laireiter *et al.*, 2012). In the therapeutic setting, diaries are used, e.g. with depressive patients as a method for prevention and psychological stabilization (Suhr *et al.*, 2017). It trains the positive inner orientation and serves the cognitive restructuring, i.e. to develop a more positive way of thinking. It should be trained to routine behavior, thus promoting gratitude and mindfulness. A more optimistic mindset develops as a result of writing positive content. The more often we write about positive events, the easier it is to adopt a positive basic attitude. This is because basic attitudes can be trained and consolidated over time (Wänke *et al.*, 2011).

In this study, the long-term keeping of the happiness diary is to be examined and what effect this has on the depressive course symptoms. The research question is: Does the regular and long-term keeping of the happiness diary have a positive influence on the development of depressive symptoms? The research hypothesis is: The regular and long-term keeping of a happiness diary has a positive effect on depressive symptoms.

## Method

### Participants

A total of 80 patients from the psychotherapeutic practice in Legden took part in this study. The participants were divided into two groups by means of a questionnaire. In group 0 (40 participants): All patients who continued the happiness diary for at least 6 months (more than 3 times a

week) after the end of therapy and in group 1 (40 participants): All patients who did not continue the happiness diary regularly or not at all. Questionnaires that were not completed in full were not counted.

### Materials

The material consisted of a cover letter, 2 questionnaires and a prepaid envelope. In the first questionnaire, the patients were asked whether they had continued to use the happiness diary regularly in the last 6 months, using closed questions. The second questionnaire consisted of the BDI-II. The Beck Depression Inventory Revision is an instrument for assessing the severity of depression in psychiatrically diagnosed adolescents aged 13 years and older and adults. The inventory consists of 21 statements about depressive symptoms. The raters are given 4 statements for each of the statements, from which they must select the one that most closely matches how the raters have felt in the past 2 weeks. Two statements (changes in sleeping habits and changes in appetite) have special features. These relate to both decreases and increases in sleep and appetite. The inventory is interpreted as follows: A total score of 0-8 points indicates no evidence of depression: 9-13 points - Minimal depression 14-19 points - Mild depression - 20 points and above; Moderate depression and 29 points or more indicates Severe depression. The maximum score that can be achieved is 63 points. The lower the score, the less severe the depression.

**Reliability:** The German version has been used in numerous studies. The following values (Cronbach's alpha) were obtained: Depressed patients in treatment (N = 288) .93, patients with primarily other mental disorders (N = 123) .92, healthy persons (N = 582) .90. **Repeatability** was determined on a community sample (N = 86) and a period of 5 months. It resulted 14 in a very good value of .78.

**Test validity:** In different samples, there was high agreement with both self-rated depressiveness (FDD-DSM-IV),  $r = .72$  to  $.89$ , and with other-rated depressiveness (MADRS),  $r = .68$  to  $.70$ .

### Procedure

Data were collected from 04/09/19 to 01/08/2022. Each participant was able to com-

plete the questionnaires at pre- and post-measurement in the practice or at home via paper-pencil. At the post-measurements, the investigator was not present and participants could choose when to complete them. During the post-measurement, the patients were informed that this was a follow-up, that their data would be used for a study by me and that their data would be processed anonymously and confidentially. If the participants are interested, the results of the examination will be sent to them by e-mail. Finally, I thanked the participants for their participation. The pre-measurement (BDI-II) was taken in the first quarter of the therapy. The testing took about five minutes. There, the patients had just started keeping the happiness diary (2 weeks). The post-measurement (BDI-II) and the catamnesis questionnaire were taken 6 months after the end of therapy. This test took about 8 minutes.

## Design

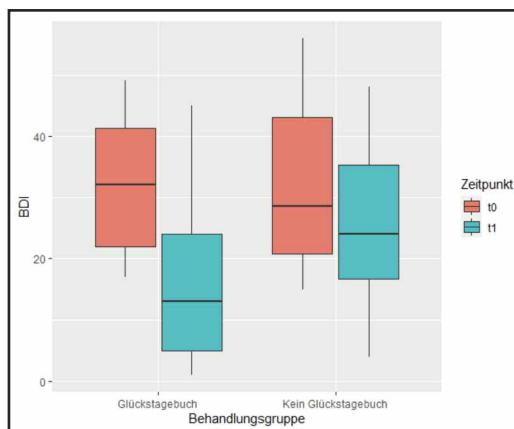
The non-experimental study had a between-subjects design and the sample was longitudinal. The study had depression severity (the total score of the BDI-II, quantitative) as the dependent variable and writing behavior as the independent variables in 2 groups: Keeping happiness diary and not keeping happiness diary (qualitative).

Before beginning the analysis, the investigator first prepared the data. First, the data were coded (data matrix created) and then all items were added to a total score. Only then could the analysis begin. First, the sample was described using descriptive statistics. The continuous variable (severity of depression) was described by mean and standard deviation.

To answer the research question, the study conducted ANOVA analysis to compare the difference between groups in the mean score of BDI-II questionnaire. The strength of the significant effect was assessed using  $\eta^2$ . A relationship is considered strong if  $\eta^2 > .20$ , weak if  $\eta^2 < .10$ , and moderate in between (Ellis, 2006). The computer program R was used for statistical data analysis and graphical representation of the data or results.

## Results

**Figure 2:** Mean values of the BDI-II of both groups (happiness diary continued/no happiness diary continued) at the beginning of the treatment



(t0) and afterwards (t1). From the ANOVA analysis with the independent variable „writing behavior" (both groups kept happiness diary at baseline t0) and BDI-II score as dependent variable, there is no significant ( $p = .69$ ) difference between the groups at time t0 (start of treatment). Thus, both groups had almost the same baseline BDI-II score at baseline ( $M = 31.5$ ,  $SD = 10.3$ ) vs. ( $M = 31.4$ ,  $SD = 12.2$ ). At post-measurement (t1), the groups (happiness diary/no happiness diary) differ significantly. Patients who regularly continue the happiness diary score significantly lower on the BDI-II ( $M = 17.2$ ,  $SD = 14.4$ ) than patients who do not or irregularly continue the happiness diary ( $M = 25.6$ ,  $SD = 11.4$ ). The factor time has a significant influence on the BDI-II in both treatment groups.

## Discussion

The research question was: *Does the regular and long-term keeping of a happiness diary have a positive effect on the development of depressive symptoms?* The research hypothesis is: The regular and long-term keeping of a happiness diary has a positive effect on depressive symptoms. From the results, it can be inferred that there is a significant relationship between long-term happiness diary keeping and depressive symptoms. In both groups, the depression score decreased after 6 months. In the group who kept the happiness diary, the score is significantly lower. Thus, the hypothesis of the study can be confirmed.

The results found above are consistent with the literature already available. A happiness diary, when used regularly, offers the possibility to adopt a positive and conscious attitude towards life. This can be helpful in depressive phases as

well as in normal everyday routines (Laireiter *et al.*, 2012).

Nevertheless, the study is not free of shortcomings. Regarding the methodology, another measurement could be included in the study, namely *the measurement of general well-being*. However, the measurement was not possible in this study due to time constraints. In addition, recruiting a more international sample might allow for a better generalization of the results found. It might be interesting to see if there are differences between keeping the happiness diary and ethnicity. However, in this study, most participants were German. In addition, a general healthy lifestyle can be sought to correct the lifestyle. It follows that there is much room for follow-up research, such as: (a) an additional measurement of general well-being; (b) an additional measurement of healthy lifestyle; and (c) recruitment of a more international sample.

In conclusion, regular and long-term keeping of happiness diaries has a long-term positive effect on the severity of depression and can serve as a good preventive measure and relapse prophylaxis.

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