

# Increasing knowledge about depression in adolescents: effects of an information booklet

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## Abstract

**Purpose** This study evaluates a newly developed information booklet about depression among adolescents. The aim was to examine the enhancement of knowledge through the booklet with the objective of reducing stigma and facilitating awareness of own treatment needs.

**Methods** 628 German ninth graders were enrolled in a pre–post–follow-up study using study-specific questionnaires to investigate knowledge enhancement in seven depression-related topics. Exploratively, knowledge enhancement was calculated with respect to education level and gender. Additionally, the students assessed the booklet’s layout, content and utility. Knowledge enhancement was analyzed using repeated measures ANOVA for index values of the booklet’s topics. The effect size partial eta square ( $\eta^2$ ) was computed.

**Results** The pre–post–follow-up comparison yielded significant knowledge enhancement for all seven index values ( $p < 0.001$ ). The associated effect sizes were medium to large. The strongest effects were achieved for the categories “Antidepressants” ( $\eta^2 = 0.56$ ), “Symptoms” ( $\eta^2 = 0.45$ ) and “Treatment” ( $\eta^2 = 0.17$ ) of depression as well as for “Suicidality” ( $\eta^2 = 0.36$ ). Although baseline knowledge was high in all students, knowledge enhancement was greater in better educated than in less educated students. Overall assessment of the booklet was good (mean = 2.15 on a rating scale from “very good” (1) to “fail” (6)).

**Conclusions** The information booklet as a low-threshold educational approach can significantly enhance depression-specific knowledge in students. Hence, it helps adolescents to acknowledge their own symptoms and treatment needs as well as to recognize these specific mental health problems in their peers. Thus, the booklet can contribute to the reduction of stigma and treatment barriers in adolescents.

**Keywords** Depressive disorder · Adolescent · Mental health · Stigma · Information booklet

## Introduction

Depressive disorders are among the most common psychiatric disorders in the adolescent population. A meta-analysis with epidemiological studies from various countries showed a point prevalence of 5.7 % for adolescent depression [1]. An epidemiological German study reported a lifetime prevalence of 17.9 % for depressive disorders in adolescents aged between 12 and 17 years [2] with girls already having a higher prevalence than boys [2, 3]. Despite common availability of effective treatment options for depressive disorders [4, 5], contact with mental health services is low, leading to a large number (77 %) of untreated patients in that age group [6, 7].

There are various reasons for undertreatment in adolescents. First, lack of knowledge and fear of stigmatization toward mental health issues and their treatment options prevent adolescents from seeking treatment and approaching the health-care system in the first place [8–11]. Symptoms associated with depression are often interpreted as signs of personal weakness or failure [12]. Many adolescents suffering from depression find themselves confronted with shame, insecurity and perceived rejection by their

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environment. Moses [13] reported that 62 % of depressive teenagers feel stigmatized by their peers, and 46 % of them had similar experiences within their families. However, Arbanas [14] showed that enhancement of depression-specific knowledge contributed to a decrease in insecurities and fears of contact with affected adolescents, leading to a reduction in prejudices.

Second, once depressive adolescents seek help, their mental disorders fail to be recognized correctly [15, 16]. Primary care professionals are often the first to be consulted [17]. Adolescents mention physical symptoms most frequently such as pain or greater tiredness to describe their depression [18, 19]. This focus on physical symptoms corresponds to the somatic-oriented view of primary care professionals and increases the risk of unrecognized depression [20]. A study with young people found that once patients identified their problems as a mental illness during consultation and expressed fears in relation to their problems, they were six times more likely to have their mental health problem correctly identified [21].

Taken together, education about depressive symptoms and their treatment seems to be a good approach to help break down barriers preventing adolescents seeking help [22–24]. In recent years, several public awareness campaigns against depression, suicidal tendencies and stigmatization were conducted, which successively enhanced knowledge and reduced negative attitudes about these mental health issues in the general population of various countries [25, 26]. Only one of these public awareness campaigns exclusively targeted young people aged 12–25 years [27]. This campaign proved to have an impact on knowledge about depression and on awareness of suicidal risk in this younger age group. Furthermore, a reduction in perceived barriers toward help-seeking behavior could be demonstrated by using several concurrent strategies such as multimedia, a website and an information telephone service [27]. However, this campaign does not provide data for long-term efficacy. Comparable studies for adults have often been shown to lack long-term efficacy in increasing knowledge and awareness of mental illness, seeking professional treatment as well as decreasing suicide rates related to depression [26, 28, 29]. Thus, the authors recommended that public awareness campaigns should be repeated approximately every 2 years if long-term effects are to be expected [28]. This is hardly realizable since such campaigns are time-consuming and cost intensive. Therefore, single interventions with only one strategy for supplying information to the public might play an important role as they could be carried out repeatedly with lower costs and effort in the mental health system. Merritt et al. [30] used a single intervention approach based on posters and postcards and could

significantly increase undergraduate students' recognition rates of depressive symptoms and decrease their prejudices toward antidepressants.

For children and adolescents, educational material such as brochures and leaflets were applied in the context of anxiety disorders [31] and safer sex education [32]. To our knowledge, no studies have evaluated the efficacy of depression-specific educational materials for adolescents. Considering this, we developed an information booklet on depression addressed specifically to a wide range of adolescent girls and boys with different educational backgrounds, who may or may not be affected by depression [33]. In a pilot study in 156 students, we evaluated whether specific knowledge about depression could be improved directly after reading the booklet [33]. Indeed, the booklet significantly improved the adolescents' depression-specific knowledge about depression.

The goal of the current main study was to evaluate this information booklet [33] in a new and enlarged sample and find out whether it could enhance knowledge about depression not just temporarily, but also after a 1-month follow-up period. Explorative sub-analyses for knowledge enhancement according to gender and school types were performed. Furthermore, the acceptance of the booklet was rated by the adolescents in terms of layout, content, utility and overall assessment.

## Materials and methods

### Booklet “Paul down in the dumps”

The newly developed booklet “Paul down in the dumps. Understanding depression in adolescents” [33] focuses on symptoms, causes and treatment of depressive disorders in adolescents, as well as suicidal tendencies and possibilities for helping affected individuals. The topics are covered in a narrative about two adolescents and their peers. A previously depressed girl talks to her friend Paul about her experiences with depression. By rebutting prejudices, discussing options and solutions, she helps Paul who is currently suffering from depression to seek mental health care. A mixture of dialogs, expressive graphics and colorful information boxes aims to emphasize the most important contents of the booklet. The booklet addresses both depressed and non-depressed adolescents aged 13–17 years. By providing addresses of local and Internet-based health-care services, the booklet is of practical relevance to its readers. Overall, the booklet comprises 20 multi-color printed DIN A6 (4.1 × 5.8 in) pages. The language is kept simple to ensure comprehensibility for a wider target population. An illustration of the booklet is given in Fig. 1.

**Fig. 1** Illustration of the information booklet “Paul down in the dumps. Understanding depression in adolescents”



### Questionnaires

Data were collected using three questionnaires specifically designed for the purpose of the study. The *Knowledge Questionnaire* includes 50 items about the adolescents' knowledge about depression. These items correspond to the following seven topics on depression: “Depression as disorder”, “Symptoms”, “Causes”, “Treatment”, “Antidepressants”, “Suicidality” and “Helping behavior”. Layout, content, utility and overall assessments of the booklet were rated by the *Evaluation Questionnaire*. Four control items refer to concrete facts from the story of the booklet to test whether the adolescents have read the booklet and understood the content. An example item which should be affirmed was: “Emilie talks to Paul because in the past she had suffered from depression herself.” An untrue item was: “Paul and Emilie are siblings.” These items were implemented to control for the booklet's comprehensibility. Both questionnaires use a four-point rating scale (0: not accurate, 1: somewhat accurate, 2: mainly accurate, 3: entirely accurate).

The *Demographic Questionnaire* includes questions about age, gender and country of birth. Due to data protection restrictions of the Bavarian State Ministry of Education and Cultural Affairs, students could not be asked whether they have already suffered from depression.

### Recruitment

The booklet was evaluated in ninth graders from secondary schools in Munich, Germany between June 2010 and February 2011. In Germany, there is no comprehensive secondary school system as in other countries, but there are three main types of secondary schools called *Hauptschule*, *Realschule* and *Gymnasium* (tripartite system). To ensure comparability to studies from other countries, students of all three German school types were included in the current study. Students enter one of three types of secondary schools after 4 years of elementary school depending on

their achievement and ability level. Whereas *Hauptschule* takes 5 years and offers practice-based secondary education designed for subsequent vocational schools, *Gymnasium* usually requires 8 years and prepares for the pursuit of higher education at universities. *Realschule* is ranked between *Hauptschule* and *Gymnasium* and takes 6 years to complete.

150 students from each school type were targeted and two school classes were recruited from each school. Schools were randomly selected and contacted from the whole pool of urban and public schools in Munich. The schools were included in the study in chronological order of their agreement to participate.

Written informed consent for participation was obtained from parents and adolescents. A positive vote was obtained from the local ethics committee. The responsible state education authorities as well as the Bavarian State Ministry of Education and Cultural Affairs granted permission for the conduct of the study.

### Study design

The booklet was evaluated within a pre–post–follow-up–design. The evaluation was conducted by two research assistants during class time. Pre- and post-assessments took place within two school lessons (90 min) of the same day. At pre-assessment, students' socio-demographic data were collected with the *Demographic Questionnaire* and their baseline knowledge about depression was assessed using the *Knowledge Questionnaire*. Once the booklet was handed out, students had 15 min to look at and read it. At post-assessment, the *Knowledge Questionnaire* was completed again and additionally the *Evaluation Questionnaire* was filled out. The short time interval between pre- and post-assessment was chosen to investigate whether adolescents were able to comprehend and immediately reproduce the content of the booklet. To examine long-term effects of the booklet, the *Knowledge Questionnaire* was answered a third time at follow-up 1 month later.

## Sample

In total, 19 of 39 schools contacted participated in the study, eight *Hauptschulen*, six *Realschulen* and five *Gymnasien*. Twelve schools refused to participate, 6 did not answer and 2 failed to respond on time. Overall, 996 students were recruited. No data could be obtained from 275 of these students because they were ill, taking part in other school events or because no informed consent had been given by the students or their parents. Of 721 assessable students, 93 were excluded since they did not take part in the follow-up assessment. Complete data sets could be gained from 628 students, corresponding to a dropout rate of 12.9 %. Participants were 13–17 years old ( $M = 15.08$ ;  $SD = 0.86$ ), with 58.0 % of them male. 217 (34.6 %) students attended *Hauptschule*, 224 (35.7 %) *Realschule* and 187 (29.8 %) *Gymnasium*. Germany was stated as the country of birth by 88.7 % of the students.

## Statistical analyses

Data from the *Demographic Questionnaire* and the *Evaluation Questionnaire* were described using means and standard deviations for continuous and ordinal variables and percentages for categorical variables.

For every student, index values [34, 35] were used to summarize the items of each of the seven topics of the *Knowledge Questionnaire*. This approach is based on the classical test theory assumption of parallel items that all items are equally good indicators of the underlying construct they are supposed to measure [36]. This justifies calculating index values in the form of added up ordinal scores [37] and not weighting the items while doing so [36]. To obtain baseline knowledge at pre-assessment, a proportion of the mean of those index values divided by the highest possible score was calculated for every topic. The effect of the pre–post–follow-up comparison of knowledge about depression for each index value was calculated with analyses of variance (ANOVA) for repeated measures. As Ito [38] described, ANOVA's  $F$ -test is very robust against non-normality. Therefore, it could be used regardless of the actual distribution of the respective index values.

The power analysis of the pre–post–follow-up comparison of knowledge about depression was computed using the effect size partial eta square ( $\eta^2$ ). A small effect is rated for  $\eta^2 > 0.01$ , a medium effect for  $\eta^2 > 0.06$  and a large effect for  $\eta^2 > 0.14$  [39]. Additionally, effect sizes of knowledge enhancement were calculated for the different school types and for gender.

For calculating baseline differences of knowledge about depression, multiple analyses of variances (MANOVA) were used, varying for school type and gender. The alpha level for all calculations was set at 5 %. Bonferroni correction was implemented to account for multiple testing (adjusted  $\alpha = 0.007$ ). All analyses were done using IBM SPSS Statistics 19.

## Results

### Knowledge about depression

The students' baseline knowledge about depression is illustrated in Table 1. The baseline knowledge is displayed as percentage of the total sum score for each topic. It scattered around 70 % for five of the seven topics. Two categories differed from the others: “Antidepressants” with only 49.7 % and “Suicidality” with 56.7 %.

The pre–post–follow-up comparison of knowledge about depression yielded significant effects for all index values showing a significant knowledge enhancement on depression for all topics. An overview of the statistics of the index values and some corresponding example items of the topics of the *Knowledge Questionnaire* is shown in Table 2.

The largest knowledge enhancement on depression with effect sizes of  $\eta^2 > 0.14$  was achieved for the topics “Symptoms” ( $F(2) = 502.970$ ;  $p < 0.001$ ;  $\eta^2 = 0.45$ ;  $\beta = 1$ ), “Treatment” ( $F(2) = 124.095$ ;  $p < 0.001$ ;  $\eta^2 = 0.17$ ;  $\beta = 1$ ), “Antidepressants” for pharmacological treatment ( $F(2) = 799.173$ ;  $p < 0.001$ ;  $\eta^2 = 0.56$ ;  $\beta = 1$ ) and “Suicidality” ( $F(2) = 345.425$ ;  $p < 0.001$ ;  $\eta^2 = 0.36$ ;  $\beta = 1$ ). Medium effect sizes were found for the topics “Depression as disorder” ( $F(2) = 43.660$ ;  $p < 0.001$ ;  $\eta^2 = 0.07$ ;  $\beta = 1$ ), “Causes” ( $F(2) = 65.358$ ;  $p < 0.001$ ;

**Table 1** Baseline knowledge about depression for the topics of the *Knowledge Questionnaire*

Topics	Total sum score per topic	M	SD	Baseline knowledge in %
Depression as disorder	12	9.43	1.78	78.6
Symptoms	54	37.87	6.24	70.1
Treatment	30	22.58	3.74	75.3
Antidepressants	9	4.47	1.83	49.7
Causes	18	11.76	2.20	65.3
Suicidality	12	6.80	2.29	56.7
Helping behavior	12	9.22	1.83	76.8

M, mean; SD, standard deviation

**Table 2** Knowledge enhancement about depression for the topics of the *Knowledge Questionnaire*

Topics	No. of items per topic	<i>F</i>	<i>df</i>	$\eta^2$	$\beta$	Example items
Depression as disorder	4	43.660***	2	0.07	1	If you have a depression you are crazy Depression is not a real illness
Symptoms	18	502.970***	2	0.45	1	It is hard to be pleased with something You can get headache or stomachaches
Treatment	10	124.095***	2	0.17	1	Psychotherapy works for depression The psychiatrist is able to treat a depression
Antidepressants	3	799.173***	2	0.56	1	Antidepressants are addictive On antidepressants you are no longer yourself
Causes	6	65.358***	2	0.10	1	If you become depressed it is not your own fault Only wimps get depressed
Suicidality	4	345.425***	2	0.36	1	Suicide is a common cause of death in adolescents A danger of depression is the high suicide rate
Helping behavior	4	60.615***	2	0.09	1	If someone talks about suicide it has to be taken seriously If you think someone is depressed or is in danger of suicide, you have to listen closely and offer help

No. Number, *F*-test statistic of the ANOVA, *df* degrees of freedom,  $\eta^2$  effect size of the ANOVA with small effects for  $\eta^2 > 0.01$ , medium effects for  $\eta^2 > 0.06$  and large effects for  $\eta^2 > 0.14$  [34],  $\beta$  power

\*\*\*  $p < 0.001$

$\eta^2 = 0.10$ ;  $\beta = 1$ ) and “Helping behavior” ( $F(2) = 60.615$ ;  $p < 0.001$ ;  $\eta^2 = 0.09$ ;  $\beta = 1$ ).

Considering knowledge enhancement over time, knowledge about depression increased significantly for all topics between pre- and post- as well as pre- and follow-up assessment. Between post-assessment and follow-up, knowledge decreased significantly for all topics except “Depression as disorder” whose value remains stable.

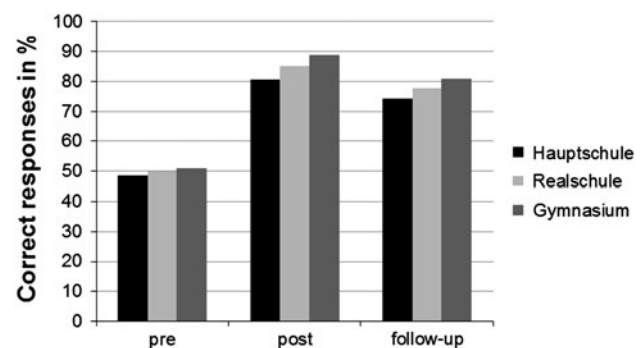
Knowledge about depression: sub-analyses for school type

Baseline differences of knowledge about depression between school types were found for the topics “Treatment” ( $F(2) = 11.437$ ;  $p < 0.001$ ) and “Helping behavior” ( $F(2) = 8.640$ ;  $p < 0.001$ ) with significantly greater baseline knowledge for students attending *Gymnasium* compared to students attending *Hauptschule*.

With regard to knowledge enhancement over time, there were no significant interaction effects of the factors “time” and “school type” for any of the seven topics.

The comparison of pre- and post-assessment as well as pre- and follow-up assessment showed an overall enhanced depression-specific knowledge for students of the three school types at post-assessment and follow-up, respectively. The comparison of post- and follow-up assessment showed that depression knowledge at follow-up was stable or decreased compared to post-assessment.

The calculation of effect sizes produced the largest effects for students from *Gymnasium* with  $\eta^2$  for the



**Fig. 2** Distribution of knowledge improvement in the topic “Antidepressants” among school types. Mean and standard deviation in percent for pre-, post- and follow-up (fu) assessment. *Hauptschule*:  $M_{pre} = 48.44$ ,  $SD_{pre} = 21.07$ ;  $M_{post} = 80.56$ ,  $SD_{post} = 22.61$ ;  $M_{fu} = 74.11$ ,  $SD_{fu} = 22.68$ . *Realschule*:  $M_{pre} = 49.89$ ,  $SD_{pre} = 21.64$ ;  $M_{post} = 85.22$ ,  $SD_{post} = 19.33$ ;  $M_{fu} = 77.78$ ,  $SD_{fu} = 20.96$ . *Gymnasium*:  $M_{pre} = 50.89$ ,  $SD_{pre} = 17.66$ ;  $M_{post} = 88.78$ ,  $SD_{post} = 15.86$ ;  $M_{fu} = 80.89$ ,  $SD_{fu} = 19.71$

different topics ranging from 0.10 to 0.66. The lowest effect sizes were found for the school type *Hauptschule* ( $\eta^2 = 0.03$ – $0.46$ ). *Realschule* ranked between the other school types with  $\eta^2 = 0.05$ – $0.58$ .

Figure 2 displays the distribution in the topic “Antidepressants” as an example for knowledge improvement among school types. This topic includes the three items “Antidepressants are addictive.”, “On antidepressants you are no longer yourself.” and “Antidepressants improve mood.”.

### Knowledge about depression: sub-analyses for gender

In three of the seven topics girls had significantly higher baseline knowledge about depression than boys: “Treatment” ( $F(1) = 17.895$ ;  $p < 0.001$ ), “Causes” ( $F(1) = 15.150$ ;  $p < 0.001$ ) and “Helping behavior” ( $F(1) = 12.379$ ;  $p < 0.001$ ). This means that in three of the seven topics at baseline, girls knew more about depression than boys.

Considering knowledge enhancement over time, there are significant interaction effects of the factors “time” and “gender” for four of the seven topics: “Symptoms” ( $F(2) = 10.237$ ;  $p < 0.001$ ), “Treatment” ( $F(2) = 5.284$ ;  $p < 0.007$ ), “Antidepressants” ( $F(2) = 13.805$ ;  $p < 0.001$ ) and “Helping behavior” ( $F(2) = 5.648$ ;  $p < 0.007$ ). Effect sizes for girls ranged between  $\eta^2 = 0.11$  and  $0.65$  for the different topics. For boys, lower effect sizes between  $\eta^2 = 0.03$  and  $0.49$  were found.

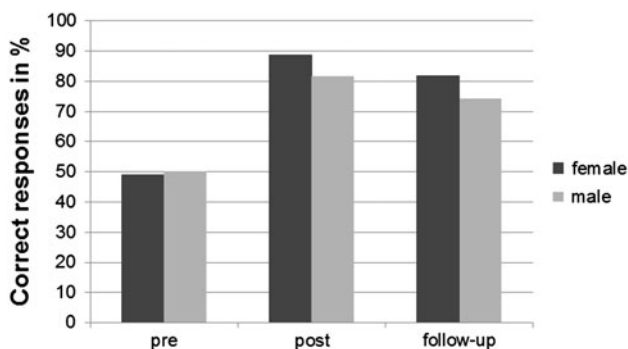
Figure 3 illustrates the distribution of knowledge improvement for gender in the topic “Antidepressants”.

### Evaluation of the booklet “Paul down in the dumps”

In total, all of the four control items of the *Evaluation Questionnaire* were correctly answered by 85.8 % of the students. This objective measure of comprehensibility is supported by the subjective impression of the students, whereby 96.5 % stated that they had understood the content of the booklet by answering the corresponding item with “mainly accurate” and “entirely accurate”.

Two answer categories at a time, “not accurate” and “somewhat accurate” as well as “mainly accurate” and “entirely accurate” were summarized for all descriptions by adding up the item scores.

For the assessment category “Layout”, 54.6 % of the students answered that the front cover had made them curious about the content of the booklet. A majority of



**Fig. 3** Distribution of knowledge improvement for gender in the topic “Antidepressants”. Mean and standard deviation in percent for pre-, post- and follow-up (fu) assessment. *Female*:  $M_{pre} = 49.0$ ,  $SD_{pre} = 19.59$ ;  $M_{post} = 88.78$ ,  $SD_{post} = 18.36$ ;  $M_{fu} = 81.89$ ,  $SD_{fu} = 18.81$ . *Male*:  $M_{pre} = 50.22$ ,  $SD_{pre} = 20.83$ ;  $M_{post} = 81.67$ ,  $SD_{post} = 20.41$ ;  $M_{fu} = 74.22$ ,  $SD_{fu} = 22.5$

77.1 % liked the format and 64.2 % approved of the pictures of the booklet. The items of the category “Content” received a highly positive rating (over 75 % approvals). Only 8 % of the students rated the booklet as too long and a minority of 3.7 % found its language was too complicated. In the category “Utility” three of four items achieved a high approval between 72.8 % and 85.6 %. However, the wish to get further information about depression was only expressed by 31.4 % of the students. For the overall assessment, 56.0 % of the subjects stated that they had fun reading the booklet, and 81.2 % thought the booklet was appropriate for adolescents within the same age range. 59.5 % of the students would recommend the booklet to a friend. On a rating scale from “very good” (1) to “fail” (6), 76.3 % of the students assessed the booklet with the school grades “very good” (1) and “good” (2) ( $M = 2.15$ ;  $SD = 0.78$ ).

### Discussion

The current study is the first one to evaluate the efficacy of a depression-specific educational booklet for adolescents. One major finding of our study is that overall depression-specific knowledge in adolescents could be increased by means of the booklet, particularly regarding symptoms and treatment of depression, antidepressants and suicidality. This knowledge enhancement was stable until the 1-month follow-up. Nevertheless, knowledge significantly decreased between post-assessment and follow-up as would be expected.

Our findings appear to be of high practical relevance. First, the awareness of typical depressive symptoms enables affected adolescents to acknowledge corresponding complaints as indications of a depressive disorder. Hence, the chances for receiving proper diagnosis and treatment would be increased considerably [20, 22, 40]. Second, enhanced depression-specific knowledge contributes to rebutting prejudices toward treatment and may thereby encourage a person to seek help [10, 23]. The booklet could be a first step to helping unaffected adolescents approach depressive and suicidal peers in a more open and unprejudiced manner as it facilitates depression-specific knowledge and substantially weakens negative attitudes toward the disorder [14].

The fact that medium to large effect sizes for subjects’ enhancement of knowledge were found across all categories greatly supports the utility and relevance of the booklet as an effective single intervention approach to educate on depression. This is in line with promising effects of other approaches comparable in content, as shown for example by the study of Merritt et al. [30]. While the methods applied in these studies were designed exclusively for adults, our study is the first to show that comparable effects can be achieved for adolescents as well.

Sub-analyses according to educational background indicated that students of all school types profited from reading the booklet. Although there were differences in the effect sizes of knowledge enhancement, all students had a greater depression-specific knowledge at 1-month follow-up compared to baseline. Thus, the booklet is suitable for a wide spectrum of secondary school students.

Since depression is commonly more prevalent among adolescent girls [3], it seems plausible that the topic is more relevant and interesting for girls rather than boys. As such, the finding that girls had greater depression-specific baseline knowledge for the majority of topics seems to support the notion that personal involvement leads to greater interest in the subject matter.

The booklet consistently received high assessment rates for its content and layout. About half the students found the front cover to be intriguing and attractive for reading. It seems promising when the design of a front cover arises enough curiosity for further reading in about every other student. Concerning utility, high ratings were given except for one item. This item inquires about subjects' desire for receiving subsequent information. However, the fact that only one-third of the students expressed the wish to acquire further information about depression after having read the booklet could possibly be taken as an indication that students felt sufficiently informed. Finally, subjects' positive ratings for the booklet's overall assessment imply that a high acceptance was accomplished in the target group. Our results are in line with a former anxiety-related booklet, similar in scope that achieved comparably positive assessment ratings in children [31].

Some limitations should be considered. Since all subjects of the study were exclusively recruited within the District of Munich, Germany, the study does not account for regional or cultural variation. Selection biases cannot be excluded as, due to data protection restrictions, no information could be gained about schools or students who did not participate in the study. Thus, schools or students interested in the topic of the study may be overrepresented. Additionally, the design of the study does not include control groups. Thus, the observed knowledge increase cannot clearly be attributed to the booklet. Besides, our findings on knowledge enhancement are solely based on self-rating questionnaires. Further studies should examine the transfer of increased knowledge into real-life situations, for instance whether affected individuals are more likely to seek treatment, or whether unaffected individuals are more likely to refrain from stigmatizing depressed peers. Although it has been shown that enhanced depression-specific knowledge reduces insecurities and fears of contact with affected adolescents [14], increased knowledge does not necessarily correct or alter prejudices [41–43].

## Conclusion

By reading an information booklet, adolescents' depression-specific knowledge increased significantly regarding depression as a disorder, depressive symptoms, causes, treatment, facts about antidepressants, suicidality and helping behavior. This applied to girls and boys of all educational backgrounds, though not equally. According to these results, the current study has two major implications. First, support is provided for the assumption that brief low-threshold programs are equally successful when applied to adolescents as they are to adults. Second, the findings suggest the booklet's high acceptance by and suitability for adolescents. Thus, a widespread distribution of this booklet to the adolescent population could be a simple and economic approach to enhance depression-specific knowledge.

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