

# Effect of an Educational Booklet on Knowledge and Attitude Regarding Major Depressive Disorder in Medical Students in Delhi

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## Abstract.

**Background:** Depression is one of the most common mental disorders affecting people in the world. It is also a growing concern in younger population particularly medical students. There are many pharmaceutical interventions for treatment of depression but there is paucity of data to determine the effect of educational intervention on the knowledge, attitude and help seeking behaviour regarding depression among medical students. **Methods:** An interventional study was carried out among randomly selected 100 medical students except interns over a period of 6 months from March-August 2011 in a medical college in Delhi to assess the effect of educational booklet on knowledge and attitude about depression. Data was collected using pre-tested questionnaire and analyzed using SPSS version 16 software. Statistical significance in pre and post intervention proportions was determined using Mc Nemar test (MN) and for other proportions Chi-square test. **Results:** The study shown that only 71% of subjects knew that depression is a disease in pre intervention phase, which rose to 88% in post intervention phase ( $p=0.01$ ). Knowledge of symptoms and treatment significantly improved such as trouble falling asleep or too much sleep ( $p=0.03$ ), feeling tired or decreased energy (MN=17.6,  $p=0.01$ ), feeling bad about self (MN=21.8,  $p=0.01$ ), speaking slowly other can notice (MN=19.1,  $p=0.01$ ) and can be treated by improving awareness (MN=8.6,  $p=0.03$ ), and anti-depressants do not cause much of side effects (MN=17.3,  $p=0.01$ ). Most common reasons for not seeking help were thinking that there is lack of understanding by other people about the depression (63%), lack of confidentiality (49%), social stigma (30%), fear of rejection (26%) and time constraints (6%). Majority of students accepted the booklet for their understanding about depression where 63% considered that it improved their knowledge to great extent. **Conclusions:** Educational interventional booklet should be promoted at bigger level to help students to identify and understand the depression which may improve health seeking behavior and could decrease their suffering if they fall sick.

**Keywords:** Depressive Disorder; Pamphlets; Health Knowledge, Attitudes, Practice; Students, Medical (Source: MeSH, NLM).

## Introduction.

Depression is one of the most common mental disorders affecting 121 million people in the world. It presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy and poor concentration.<sup>1,2</sup> Presently, depression is already the 2nd cause of DALYs in the age category 15-44 years for both sexes combined. By the year 2020, depression is projected to reach 2nd place of the ranking of DALYs (Disability Adjusted Life Years) loss calculated for all ages, both sexes.<sup>1</sup> The lifetime prevalence of depression is 12.1%.<sup>3</sup> It accounts for 5% of total burden of disease from all causes in the world.<sup>4</sup> The prevalence of depression is variable in different age groups and occupation. In South Asia, 14,582 thousand DALY's loss due to depression which is 3.6% of all causes.<sup>5</sup> A large population-based study from

South India reported overall prevalence of depression to be 15.1% after adjusting for age using the 2001 census data.<sup>6</sup>

Medical students are highly prone to stress, anxiety and depression as they confront significant academic, psychological and existential stressors throughout their training.<sup>7-10</sup> Studies have shown that level of depression is very high in medical students as compared to the general population.<sup>11</sup> Depression is associated with suicides and it was found that 53.6% of the medical students have suicidal ideation and 4.9% have contemplated suicide.<sup>12</sup>

In an intervention study in the University of Hawaii among medical students, 59.1% of them had reported depressive symptoms and 30.2% reported suicidal ideation.<sup>13</sup> An In-

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dian study showed overall level of depression in medical students to be as high as 39.44%.<sup>14</sup> A big hurdle encountered while dealing with depression in medical students is that very few of them seek help although depression is reliably diagnosed and many treatment options are available.<sup>15</sup> However, there are very few studies conducted among Indian medical students to assess the impact of an educational intervention on the knowledge, attitude and help seeking behaviour regarding depression.

Therefore this study was planned with an objective to assess the impact of Information Educational Communication (IEC) material in the form of a booklet on knowledge, attitude and approach to deal with depression among medical students in Delhi.

## Methods.

### *Study design, participants and sampling technique*

A college based intervention study was conducted over a period of 6 months from March-August 2011 in a medical college of Delhi. Sample size was calculated on the basis of a study that the baseline knowledge about depression in medical students to be 50%.<sup>16</sup> It was expected to moderately increase up to 70% after intervention in the form of an educational booklet. Taking power of the study to be 80% and  $\alpha$  error 5%, sample size was calculated using EPI-INFO software version 3.3.2. It came out to be 103. However, 105 medical students from different batches were selected by stratified sampling from their roll numbers. Out of 105 students enrolled, 5 students did not reported back with completed questionnaire after 1 week in spite of three reminders. Therefore only 100 students were included in the final analysis.

### *Methodology*

The study was divided into three phases; pre intervention phase, intervention phase and post intervention phase. In pre intervention phase, selected students were given a self administered questionnaire. In intervention phase, students were given intervention material in form of an IEC booklet. In post intervention phase, the same students were contacted a week after giving IEC booklet. The students were again asked to fill the questionnaire. Comparison was made on the basis of response to questionnaire before and after the intervention.

### *Inclusion and exclusion criteria*

All undergraduate medical students enrolled with medical college were included. The students doing internship were excluded. None of the student was seriously ill due to physical component of health or admitted in hospital.

### *Study tool*

For assessing knowledge and attitude, a semi-structure questionnaire consisting of items on age, current semester of study, family type, parent's occupation, history of

previous schooling and interest in pursuing medical course along with student's knowledge, attitude and perception about causes, symptoms, treatment of depression and their help seeking behavior in case they suffered from depression was prepared. The majority of items of questionnaire were based on validated instrument,<sup>17,18</sup> however it was tested for its feasibility and appropriateness among medical students aged 18-25 years of another medical college in Delhi.

For intervention, an IEC booklet containing information regarding various aspects of depression like symptoms, causes, risk factors, different forms, treatment options, common myths and easy techniques that could be tried prior to taking professional help, in case the student suffered from depression was developed. The content of IEC booklet was based on the standard textbook of psychiatry<sup>19</sup> and was approved by professional psychiatrist and public health expert. It was pretested among students of same age group who were not a part of study sample. Their suggestions were incorporated in the booklet before use in the actual study. The booklet was printed in simple language and made colorful and attractive with all major issues related to depression were dealt with.

### *Statistical analysis*

The data collected was entered in MS-Excel and analyzed using SPSS software. Results were presented in simple proportions and difference between groups was assessed for their significance using statistical tests. For comparison of pre and post intervention difference, Mc Nemar test was applied while aspects, which were evaluated only once but compared with other group, their significance was assessed using chi-square test. The results were accepted as significant if "p" value was less than 0.05.

### *Ethical issues*

The students were explained the purpose of the study. Information collected and identity was kept confidential and their informed consent was taken before taking information. The study was approved by the institutional ethical committee.

## Results.

Out of 100 medical students who participated in the study, with a mean age of  $20 \pm 1.28$  years old and 48 were males. Sixty-four percent were hostellers and 36% were day scholars; 81% stated that they are pursuing medical career with self interest while 8% said parent's interest is the reason behind opting this profession.

### *Knowledge about causes and risk factors*

It was found in the study that 71% of students knew that depression is a disease in pre intervention phase however, this figure rose to 88% in post intervention phase. This increase was found to be statistically significant ( $p=0.01$ ). The

students who considered that old people and women are less prone to suffer from depression fell from 11% to 9% and 8% to 2% respectively after intervention.

Children do not suffer from depression was initially considered by 16% students and after intervention by 12% students. The percentage of students who felt that lower socio-economic status increases the risk of developing depression increased after the study from initial 50% to 67% , which was not significant, but the students who considered that people in contact with depressed people tend to develop odd or strange behavior decreased significantly after the intervention from 43% to 21% ( $p=0.01$ ). 57% of students thought that higher education or high Intelligent Quotient (IQ) increases the risk of developing depression in post intervention phase as compared to 41% in pre intervention phase which is statistically significant ( $p=0.03$ ). 97% of the subjects knew that depression is a result of dynamic imbalance of brain neurotransmitter after intervention as compared to 84% before intervention ( $p=0.04$ ).

Similarly, there was a significant increase in the number of students who thought that depression results from abnormal family structure from 81% to 92% after intervention ( $p=0.03$ ). Depression could be due to social circumstances was considered prior to intervention by 97% students which improved to 99% after intervention. There was an increase in percentage of students who considered poor nutritive diet, polluted air, loss of semen/vaginal secretion and god punishing for sins or wrong doing as cause of depression from initial 43%, 25%, 27% and 16% respectively to 74%, 59%, 63% and 38% respectively after intervention. Achievement oriented society was taken as cause of depression before intervention by 82% and after intervention by 91% of students ( $p=0.10$ ). The fact that depression runs in family was known initially to only 44% students while after intervention, it was known to 75% (Table 1).

#### **Knowledge about symptoms of depression**

In regard to symptoms of depression, it was observed that 95% students knew that decreased pleasure or interest in doing things was a symptom in post intervention phase vis-a vis 86% in pre intervention phase ( $p=0.49$ ). Similarly, feeling down or hopelessness was mentioned as a symptom of depression by 94% students, which after intervention increased to 99% ( $p=0.12$ ). After the intervention, trouble falling sleep or sleeping too much was considered as symptom of depression by 96% as against earlier by 86% ( $p=0.03$ ). There was an increase from 69% to 96% in the number of students who considered feeling tired or having decreased energy as symptom of depression after intervention ( $p=0.01$ ).

Poor appetite or overeating was thought as a symptom before intervention by 79% and after intervention by 98% respondents ( $p=0.01$ ). Initially 92% students responded to

“feeling bad about yourself or that you are a failure or has let yourself or your family down?” as a symptom of depression, which post intervention reached 100% ( $p=0.01$ ). Prior to intervention, 76% students believed that trouble concentrating on activities, such as reading newspaper or watching television was a symptom of depression, which after intervention was known to 95% students ( $p=0.01$ ).

A significant increase was detected in the number of students from 59% to 89% who considered “moving or speaking so slowly that other people have noticed or being fidgety or restless” as a symptom ( $p=0.01$ ). After the intervention, 98% pointed out the thoughts of being dead or hurting themselves in some way as a symptom against initial 84% ( $p=0.01$ ) as shown in the Table 2.

#### **Knowledge about treatment of depression**

Regarding treatment of depression, there was a slight decrease in the number of students who considered depression as untreatable, from 4% to 3% after intervention. Similarly, the percentage of students who considered that depression was as well treated by spiritual and faith healers as the psychiatrists decreased from 43% to 35% in post intervention but the decrease is not statistically significant ( $p=0.29$ ). The percentage of students who believed that depression can be treated by improving the awareness of patient towards his emotional feelings improved significantly from 78% to 94% ( $p=0.03$ ). Comparing the response on question whether taking anti-depressants has side effects showed improvement when 92% students thought that taking anti-depressants has side effects, which declined to 66% after intervention ( $p=0.01$ ). Similarly, there was but not significant decrease in the percentage of students who thought that anti-depressants are addictive from 51% to 45% in post intervention phase ( $p=0.48$ ). (Table 3)

#### **Attitude towards depression**

Initially, 79% subjects believed that they would employ a person who had recovered from depression and after the intervention it increased to 89% ( $p=0.07$ ). The percentage of students who would be against a close relative marrying a person who has recovered from depression after the study increased from 17% to 24% ( $p=0.20$ ) but the difference is not significant statistically. The students who found themselves comfortable talking with depressed person significantly improved after the intervention from 58% to 73% ( $p=0.04$ ). The results of attitude toward depression are depicted in Table 4.

#### **Help seeking behavior**

Items on help seeking behavior were asked before distribution of booklet only. It was because of not to identify medical students with depression for social and ethical concerns. However, they were advised to report to psychiatry OPD if they had symptoms suggestive of depression.

**Table 1.** Comparison of pre and post intervention phases on knowledge about causes and risk factors of depression.

Items	Pre - Intervention (%)	Post - Intervention (%)	Mc Nemar test	p Value
Depression is a disease	71	88	-	0.01
Older people are less prone to depression	11	9	-	0.80
Children don't suffer from depression	16	12	-	0.50
Women are less prone to depression	8	2	-	0.10
People in contact with depressed people develop strange behavior	43	21	11.02	0.01
Lower socio-economic class is more prone to depression	50	67	5.68	0.17
High IQ is a risk factor for developing depression	41	57	4.32	0.03
Depression is caused by				
Imbalance of brain neurotransmitter	84	97	-	0.04
Abnormal family structure	81	92	-	0.03
Social circumstances	97	99	-	0.62
Poor nutritive diet	43	74	17.64	0.01
Polluted air	25	59	20.94	0.01
Loss of semen/vaginal fluid	27	63	21.8	-
God punishing for wrong doing/sins	16	38	9.5	0.02
Achievement oriented society	82	91	-	0.10
Depression runs in family	44	75	15.78	-

**Table 2.** Comparison of pre and post intervention phases on knowledge about symptoms of depression.

Items	Pre - Intervention (%)	Post - Intervention (%)	Mc Nemar test	p Value
Decreased pleasure or interest in doing things?	86	95	-	0.49
Feeling down or hopeless?	94	99	-	0.12
Trouble falling/staying asleep, sleeping too much?	86	96	-	0.03
Feeling tired or having little energy?	69	96	17.64	0.01
Poor appetite or overeating?	79	98	-	0.01
Feeling bad about yourself or that you are a failure or has let yourself or your family down?	92	100	21.87	0.01
Trouble concentrating on things, such as reading newspaper or watching television?	76	95	-	0.01
Moving or speaking so slowly that other people have notice being so fidgety or restless that you have been moving around a lot more than usual?	59	89	19.1	0.01
Thoughts that you would be better off dead or of hurting yourself in some way?	84	98	-	0.01

**Table 3.** Knowledge about treatment of depression in pre and post intervention phases.

Items	Pre - Intervention (%)	Post - Intervention (%)	Mc Nemar test	p Value
Depression is untreatable	4	3	-	1.00
Depression can be treated by spiritual and faith healers	43	35	1.11	0.29
Improved by leaving patient alone	8	12	-	0.50
Improved by change in environment	93	94	-	1.00
Improved by increasing awareness of patient towards his/her feelings	78	94	8.6	0.03
Anti depressants have side effects	92	66	17.3	0.01
Anti depressants are addictive	51	45	0.5	0.48

Therefore items on health seeking were not assessed in post intervention phase. On asking whom they would prefer to consult if they suffer from depression, 73% students stated that they would like to seek help from a health professional like a counselor or a psychotherapist. 72% said they would like to discuss with their family members, 35% would prefer in taking help from teachers and mentors. 26% students thought that self treatment would be best for them while 20% would like to seek information from internet.

Another significant observation was reasons for not seeking help in depression. 19% of the students felt that if they go to anybody for help, be it their family members, health professionals or teachers, it would not yield any result. Another 9% felt ashamed while asking for help and a same percentage felt that time constraint is responsible for not seeking help. When asked about the problems faced while seeking help, 63% believed that the lack of understanding by other people prevent them from taking help. As many as 49% students said that greatest fear while seeking help was the lack of confidentiality. Other reasons were stigma (30%), fear of rejection (26%) and waste of their time (6%) as shown in Figure 1.

The various mediums preferred by students for seeking help were determined and it was noticed that 80% preferred face-to-face interview followed by telephone (22%), internet (17%) and letter writing (14%).

Figure 1. Greatest fear reported by study subjects for not seeking help.

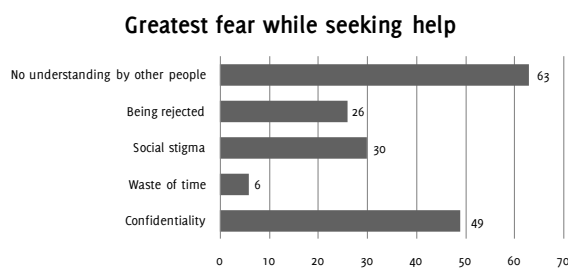


Figure 2. Acceptability of IEC booklet by study subjects.

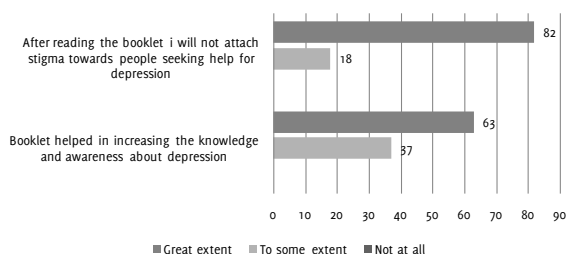


Table 4. Attitude regarding depression among study subjects.

Items	Pre - Intervention (%)	Post - Intervention (%)	Mc Nemar test	p Value
Willing to employ recovered person	79	89	3.1	0.07
Against marrying a recovered person with your close relative	17	24	1.09	0.20
Comfortable discussing with depressed person	58	73	4.1	0.04

### Acceptability of intervention booklet

Feedback to determine acceptability of booklet was obtained. As many as 63% students believed that it has increased their knowledge and awareness about depression to a great extent. About 37% felt that it increased their knowledge to some extent. 82% believed that they would not attach stigma towards people with depression seeking help but 18% still thought that they might attach stigma to some extent. The results are displayed in Figure 2.

### Discussion.

Improving knowledge regarding depression needs basic understanding of the students that depression is a disease and needs to be taken care of and not to be left undiagnosed or untreated. Since these issues were addressed in the booklet there was significant improvement in knowledge, attitude and health seeking behavior about depression in students.

The number of students who considered depression a disease increased from 71% to 88%. Most of the students had high knowledge of the causes of depression like neurotransmitter imbalance, abnormal family structure and social circumstances owing to their medical knowledge. But many of them were not aware of factors like poorly nutritive diet, polluted air, and loss of semen or vaginal secretions as causes of depression. This is consistent with findings observed by Kishore et al where it was stated that very small percentage of medical practitioners knew about these causes of mental disorders.<sup>20</sup> It reflects general lack of emphasis on these factors by medical professionals also. The genetic link to depression is an important factor as it helps students to detect depression early in patients with a family history, which was included in the booklet. Few responses in post intervention had gone against the expected finding. For example, there was an increase in the number of students who believed that depression may result due to god punishing them for wrong doing or sins. This could be due to prevalent myths even among medical professionals. Another explanation for this could be that since this intervention was carried out for a short duration only, a person's deep rooted beliefs become stronger in such circumstances. Similar findings of myths and wrong beliefs were reported by Kishore et al.<sup>20</sup> Similar findings on etiology of psychiatric illnesses was reported by a study conducted among medical students by Chawla et al in which excessive emotions, loneliness, past sins and evil spirits were consi-

dered as a cause of psychiatric disorders.<sup>21</sup> It reflects lack of emphasis on these factors in medical teaching as well.

The slight increase in percentage of students who believed that lower socio-economic status increases the risk of developing depression could be due to the fact that they considered lack of resources could result in poorly nutritive diet and polluted housing conditions, which are in turn considered as risk factors for depression. This is consistent with the study carried out among medical professionals in which according to 63% respondents, mental disorders were caused solely by unfavorable social circumstances.<sup>20</sup>

Students were made aware of all the symptoms that could point towards depressive behavior. About 70% students were already aware of the symptoms, which after reading the booklet increased strikingly to 90% in most cases. Identifying these symptoms by the students, which may otherwise appear as general irritable mood swings, for more than 2 weeks in general, can help the students to seek early help. The findings are consistent with the results of a study carried out among Australian medical students in which being sad, down or miserable was stated as a symptom of depression by 71% second year students and 82% of fourth year students. Others symptoms reported were sleep disturbances, being unhappy or depressed, feeling tired all the time, easy fatigability etc.<sup>22</sup>

Most of the students were already aware of the treatment available for depression. There was also a detectable decrease from 43% to 35% in the number of students who believed that depression could be treated by faith healers as well. This is important because it represents that depression is not merely a disease that can be improved by gaining faith but is an abnormal condition with a determinable cause and proper treatment available. However, similar views were expressed by medical professionals regarding faith healer ability to treat mental disorders in another study. In that study 8% of the respondents considered mental illness to be untreatable.<sup>20</sup>

A notable increase from 78% to 94% was detected in number of students who believed that depression can be improved by increasing the awareness of patient towards his feeling. This is important as mostly medical students ward off these feeling as normal emotional response to medical school, so making them aware of their feelings will help them realize that they could be depressed and should seek help. Students need to be made aware of the fact that taking anti-depressant is like taking other medications. The stigma attached to taking anti-depressant medication need to be addressed. After reading the booklet there was a noteworthy fall from 92% to 66% students who believed that taking them had side effects. Side effects involved with them are general side effects but not troublesome enough that the medication can't be taken. It is important to remove misconceptions

of students regarding anti-depressants because it could be hindering them to seek help from psychiatric expert.

The attitude of medical students towards depressed individuals was evaluated as it may have repercussions on their future practice and development of intolerance towards depressed individuals. This was also shown by a study conducted among 40 general practitioners (GPs) in Liverpool and Manchester who completed the Depression Attitude Questionnaire (DAQ) and were asked for prescribing information. The ability of GPs to identify depression may not be an independent variable, but may rather reflect other beliefs, attitudes and skills. This has considerable implications for educational interventions in primary care.<sup>23</sup> Hence questions on various issues like employing an individual who has recovered or marriage of a relative with a person having history of depression or the ability to feel comfortable while talking with depressed person were included in the questionnaire.

Considerable improvements were noted in the above questions. However surprisingly, after the study there was a slight increase in number of individuals who would be against marriage to a recovered individual. The basis of this finding could be that after reading the booklet more people became aware of the fact that depression can run in families and thus some preferred not to marry an individual who have recovered from depression. Genetic linkage to depression was told in the booklet, which could be a reason for such attitude.

An important finding was observed in a previous study in the same college that only 4.7% students had ever consulted a counselor even though around 14.7% admitted to have had past depressive episodes.<sup>15</sup> This makes it critical to determine the various aspects of help seeking behavior in students. Most of that students preferred professional counselors (73%) to seek help, this makes counseling an important tool to counteract increasing depression. Similar results were reported by another study where 54% of first year students and 46% of second year medical students preferred counseling.<sup>22</sup> The medium that was mostly favored by students was face-to-face interview (80%). This could be probably due to the ease with which they are able to communicate in the interview, including clarifying their queries.

The main reasons for their not so forthcoming approach in regard to seeking help were also cited. It was found that mostly they felt that nobody could help them (19%) and a few felt ashamed (9%) while seeking help. The main problems faced while seeking help were detected in which no understanding by others was cited as the most common reason (63%) followed by lack of confidentiality of the treatment, fear of documentation of their illness, social stigma (30%) and being rejected by others (26%) and waste

of time (6%) were other reasons. This is consistent with findings of a study conducted in University of California in which the most frequently cited barriers to using these services were determined as lack of time, confidentiality and social stigma.<sup>24</sup> Since social stigma turned out to be a big factor in both the studies, this issue was specifically addressed in the booklet. After reading the booklet, 82% believed that they would not attach stigma but 18% still considered that they might attach stigma to some extent. This can be due to already high prevalence of social stigma in medical students and should be further brought down by counseling. Better interaction with faculty, advisory services and counseling services have been reported to help students to deal with stress and depression according to a study conducted by Shaikh et al in Pakistan Medical School.<sup>25</sup> Thus, knowledge and attitude of students towards depression was found to improve following the educational intervention in the form of IEC booklet.

This is in accord with the fact that most of the students accepted the booklet and 63% found that it increased their knowledge about depression to a great extent and 37% considered that it increased to some extent. The positive feedback obtained is consistent with other studies, which have used other methods of intervention.<sup>26-29</sup>

The study has following limitations: a) the study was confined to only one medical college which limit the generalizability to all medical students. b) Intervention in form of booklet was applied to all students and had no comparative group. Therefore the causal effect of booklet on improvement of knowledge, attitude and practice cannot be stated. c) Long term effect of the booklet could not be assessed.

The study draws conclusion that intervention in the form of booklet had profound improvement in the knowledge of students regarding various aspects of depression such as risk factors, causes, symptoms and treatment. They will attached less stigma to the depression and favorable to work with mentally ill subject. The various myths like anti-depressants having a lot of side effects and being addictive were attended to. Thus IEC booklet is effective tool to bring change in their behavior for seeking help for depression if they fall sick.

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