IJSRM
INTERNATIONAL JOURNAL OF SCIENCE AND RESEARCH METHODOLOGY
An Official Publication of Human Journals

Human Journals
Research Article
June 2018 Vol.:9, Issue:4

Studies on Relationship between Depression and Anxiety with Eating Disorder in Bank Employees of Kolkata, India

IJSRM
INTERNATIONAL JOURNAL OF SCIENCE AND RESEARCH METHODOLOGY
An Official Publication of Human Journals

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Submission: 26 May 2018
Accepted: 2 June 2018
Published: 30 June 2018

Keywords: Depression, anxiety, eating disorder, bank employees

ABSTRACT

The present study put forward that there might be a potential relationship between depressive mood and symptoms of eating disorders in professionals of banking sectors with respect to those not in the banking sector. The study area chosen was the city of Kolkata, India. Becks depression inventory-II, Becks anxiety inventory and eating disorder test (EAT-26) were used as instruments. It was observed that there was significant ($p<0.05$) difference in the level of depression in non- banking professionals than banking professionals. Significantly higher ($p<0.01$) anxiety level was observed in non-bankers also. This has been substantiated by the fact that occurrence of eating disorders was higher in non-banking professionals (*ca*. 67% of the subjects) than the banking professionals (*ca*. 47%). The study indicated that such correlation might probably be due to stable socio-economic and job satisfactory conditions of the banking professionals in this country.

INTRODUCTION

Eating disorders are complex psychiatric syndromes in which cognitive distortions related to food and body weight and disturbed eating patterns can lead to significant and potentially life-threatening medical and nutrition complications. The three types of eating disorders are anorexia nervosa (AN), bulimia nervosa (BN) and eating disorder not otherwise specified (EDNOS)[1]. Eating disorders do not occur uniformly in all cultures at all times. An obsession with slimness a core feature of EDs is concentrated in cultures in which food is abundant. In cultures of scarcity, the ideal body shape is much more likely to be round, suggesting that ideals tend toward what is difficult to achieve[2]. Indeed, studies have shown that in rich countries, higher ranked individuals on average are thinner than lower status individuals[3].

It was observed that there are significantly higher rates of suicide attempts, depression, and anxiety among males with eating disorders[4], although it was believed earlier that eating disorders are associated only to females, which lead to misdiagnosis and silence among anguished males[5]. Depression is a documented mental health crisis that unfavorably impacts upon the individual's ability to function and sufferer's daily life. Depression is a disorder of mood that involves symptoms of sadness, discouragement, and feelings of hopelessness, as well as loss of appetite, difficulty in sleep and loss of energy[6]. Due to depression, society faces considerable economic costs, because thousands of victims fail to carry out social and occupational functions[7].

On the other hand, studies have consistently shown that a significant number of patients with anorexia nervosa (AN) or bulimia nervosa (BN) experience one or more anxiety disorders[8]. In most cases, the onset of an anxiety disorder precedes the onset of an eating disorder[9,10]. Even some researchers to speculate that early-onset anxiety disorders may represent a potential genetically mediated pathway toward the development of an eating disorder[11].

Very little research has focused on the relationship between people in social or professional occupations and disordered eating in non-clinical samples. An occupation like banking is one of the most stressful jobs in the modern world, especially in large republics like India. This type of research is undoubtedly important, especially in non-clinical samples composed of subjects involved in highly stressed occupations like in banking sector. In the present study, we hypothesized that there might be a potential relationship between depressive mood and

symptoms of eating disorders in the professionals of the banking sector (henceforth described as bankers).

MATERIALS AND METHODS

Participants

The investigation was carried out on a sample of 100 persons. Out of 100 samples, 50 samples each were bankers and non-bankers both female and males. Non-bankers were selected by Government officials. The purposive sampling method was employed to select the sample. No inclusion/exclusion criteria were adopted. Ages of participants ranged from 28 to 60, with a mean age of 38.28±3.64 for bankers 42.15±5.02 for non-bankers. 68.27% of the samples were married. Both written questionnaire and direct interview method were used as the method of collecting data. Only those samples that were willing to give response were selected. Instructions were given to them properly for data collection in the family environment. The responses given by the subjects were carefully scrutinized on the spot by the investigator. Then only the persons having depression were selected as the sample and they were further asked to fill up the General Background Schedule, Beck's Depression Inventory and Eating Attitudes Test (EAT-26).

General Background Schedule

It consisted of 11 questions. There were two types of questions one type was about personal data and the other was about physical data. Demographic and physical data were collected through it. The questionnaire contained items like name, age, sex, educational background, height, weight etc. From the physical data, body mass index (BMI) of each individual was calculated.

Beck's Depression Inventory-II

It was a self-report measure of depression[12]. It contained 21 questions, each one with four answer options. The answers carried scores 0 to 3. Among 21 questions, 15 questions dealt with psychological symptoms and only 6 were concerned with somatic symptoms. It had high reliability and validity. The maximum score was 63 and minimum 0. The subject chose the statement closest to his present mental state. The number mentioned against each alternative statement given in the inventory was the score for that particular alternative. Scores for all the

21 questions were added up to obtain the total score and it was compared with the following categories of depression to find out the level of depression of the subject - score 0-13 = minimal, 14-19 = mild, 20-28 = moderate and 29-63 = severe.

Beck's Anxiety Inventory

The Beck Anxiety Inventory (BAI) is a 21-item multiple-choice self-report inventory that measures the severity of an anxiety in adults and adolescents[12]. Each of the items on the BAI is a simple description of a symptom of anxiety in one of its four expressed aspects: Subjective (e.g. unable to relax), Neurophysiologic (e.g. numbness or tingling), Autonomic (e.g. feeling hot) or panic-related (e.g. fear of losing control). Each question has the same set of four possible answer choices, which are arranged in columns and are answered by marking the appropriate one with a cross. These are: not at all (0 points), it did not bother me much (mild, 1 point), it was very unpleasant, but I could stand it (moderate, 2 points) and I could barely stand it (severe, 3 points). Scores for all the 21 items are added up to obtain the total score and it is compared with the following categories of anxiety used - score 0-9 = minimal, 10-16 = mild, 17-29 = moderate and 30-63 = severe.

Eating Attitude Test (EAT-26)

The Eating Attitude Test (EAT) is one of the most widely used self-report eating disorder instruments to date[12]. The 26-item version, which was a variant of the original 40-item questionnaire, was used in the study as it was highly reliable and valid. It consisted of 26 questions, and the responses ranged from "always" to "never". The scoring was done in the following manner – always = 3, usually = 2, often = 1, sometimes, rarely, never = 0. All the scores were summed up and it produced a possible range of 0 – 78 with the score higher than "20" indicating eating disorder. There were also 4 behavioral questions indicating the presence of extreme weight-control behaviors as well as providing an estimate of their frequency. If any of the 4 items scored 'yes', then there was the increased risk for eating disorder.

Ethical considerations

Prior to inclusion in the study, all patients were asked to sign an informed consent form containing the objectives of the study. All participants were informed of the purpose of the research project and were given guarantees of confidentiality and anonymity by the research

team. The instruments included in the research protocol were applied individually and data were collected by the researcher.

Statistical analyses

Data were entered into the Statistical Package for the Social Sciences (SPSS) version 17.0 (IBM Corporation). Descriptive and inferential analyses were conducted using one-way ANOVA followed by Tukey's posthoc test for multiple comparisons between subject categories, as required. Significance was set at 5%.

RESULTS

Evaluation of depression

The results (Fig. 1) showed that non-bankers are moderately depressed while the depression level in bankers is low. Minimal depression was high in bankers. Both bankers, as well as non-bankers, were not severely depressed. However, non-bankers are more susceptible to depression than bankers.

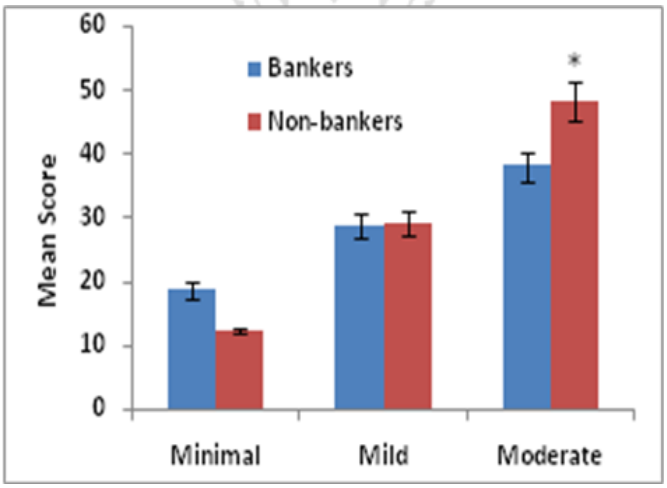

Fig 1. Comparative levels of depression between participating groups. Results are expressed as Mean score±SD (*n*=50).

Evaluation of anxiety

A result of this study (Fig. 2) showed that non-bankers are mostly affected with high anxiety levels while in bankers, there was no severe anxiety. The occurrence of mild anxiety was

same in both the groups, although the difference was non-significant. However, non-bankers were more susceptible to anxiety level than bankers.

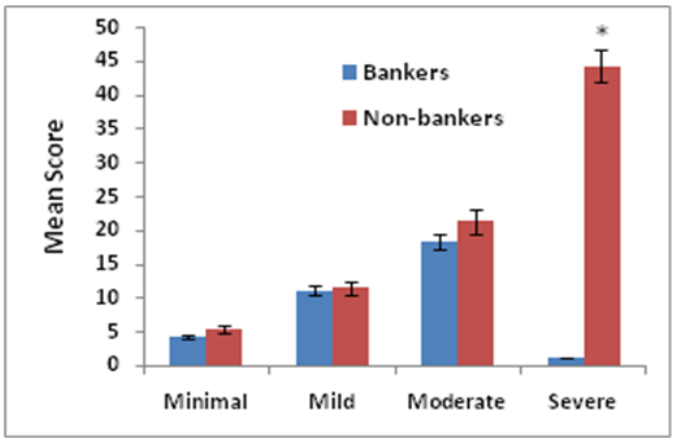

Fig 2. Comparative levels of anxiety between participating groups. Results are expressed as Mean score±SD (*n*=50).

It was also observed that, apart from rajma, the four pulses were very effective to inhibit glucose uptake by live yeast cells after microwave treatment, as depicted in Fig. 3. The most effective of them were Bengal gram, where the EC_{50} value changed from 1.47 µg/ml to 0.33 µg/ml. No major change was observed in rajma after following the treatment regimens, except a serene indication of betterment after pressure cooking.

Evaluation of eating disorders (EA)

The results (Fig. 3) showed that the percentage of having the eating disorder is greater in bankers and non- bankers. It was also observed that *ca.* 67% of non-bankers (30% Anorexia Nervosa, 10.5% Bulimia Nervosa and 26% Binge Eating Disorder) and *ca.* 47% bankers (15.5% Anorexia Nervosa, 10% Bulimia Nervosa and 21.5% Binge Eating Disorder) have eating disorder symptoms.

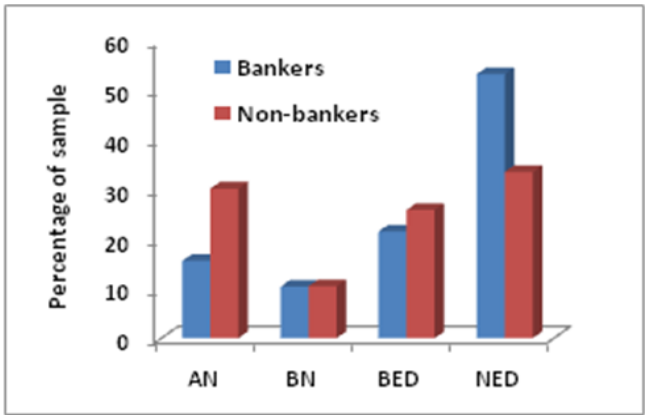

Fig 3. Comparative prevalence of eating disorders in the participating groups. Results are expressed as a percentage of subjects affected by the disorder (*n*=50). AN - Anorexia nervosa, BN - Bulimia nervosa, BED - Binge eating disorder, NED - No eating disorder.

Evaluation of Body Mass Index (BMI)

The results (Fig. 4) showed that the prevalence of underweight individuals was more in non-bankers in comparison to bankers. However, in both groups, the percentage of normal individuals were most, although the situation reversed in individuals who were overweight or obese.

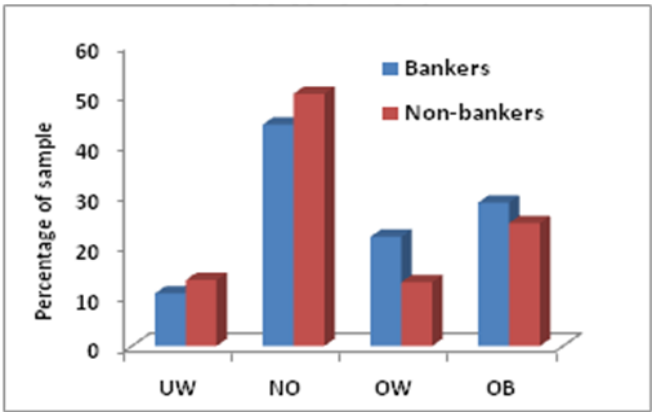

Fig 4. Comparative BMI of the participating groups. Results are expressed as percentage subjects having the BMI (*n*=50). UW - Underweight, NO - Normal, OW - Overweight, OB - Obese.

The relation between depression and EA

According to the results obtained (Fig. 5), *ca.* 55% minimally or mildly depressed bankers had no eating disorder. Most of the bankers with eating disorders were mildly depressed (*ca.*

33% of the total sample). No severe depression was observed among the bankers or non-bankers. On the other hand, 36% of the non-bankers were free from any eating disorders. Most of them having eating disorders (*ca.* 60%) were minimally or mildly depressed.

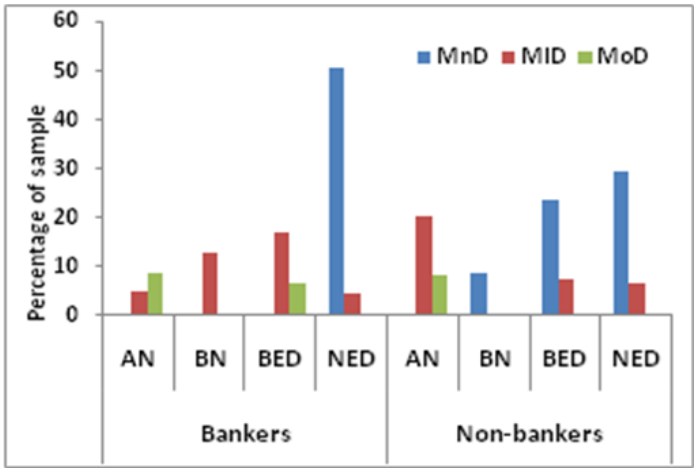

Fig 5. The relation between depression levels and eating disorders in the participating groups. Results are expressed as a percentage of subjects affected by both the disorders in each group (*n*=50). AN - Anorexia nervosa, BN - Bulimia nervosa, BED - Binge eating disorder, NED - No eating disorder, MnD - minimally depressed, MlD - mildly depressed, MoD - moderately depressed.

The relation between anxiety and EA

According to the results obtained (Fig. 6), *ca.* 53% of bankers were minimally anxious although they had no eating disorders. In case of non-bankers, it was only 31.5%. Non-bankers with eating disorders were severely anxious (*ca.* 38%). Most of the bankers were mildly or moderately anxious.

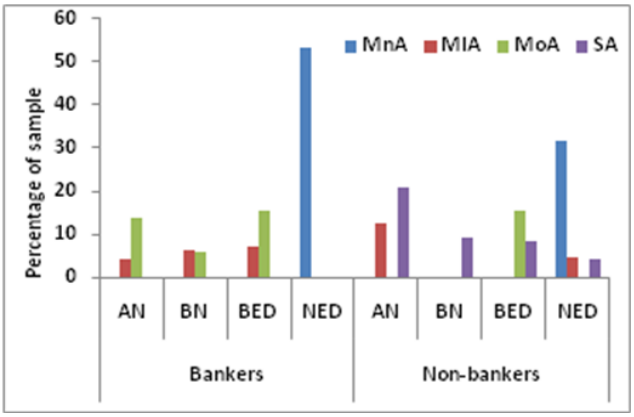

Fig 6. The relation between anxiety levels and eating disorders in the participating groups. Results are expressed as a percentage of subjects affected by both the disorders in each group (n=50). AN - Anorexia nervosa, BN - Bulimia nervosa, BED - Binge eating disorder, NED - No eating disorder, MnA - minimally anxious, MlA - mildly anxious, MoA - moderately anxious, SA - severely anxious.

The relation between BMI and EA

According to the results obtained (Fig. 7), the subjects with no eating disorders were mostly normal. Obesity or overweight was observed mainly in the non-bankers with binge eating disorders. Prevalence of underweight individuals having anorexia nervosa was also comparatively higher in the non-banker group.

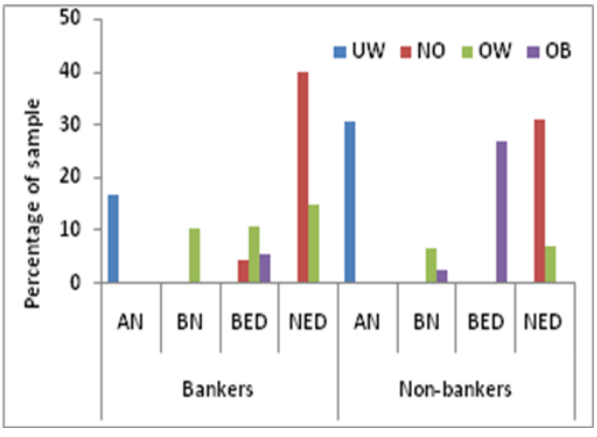

Fig 7. The relation between body mass index and eating disorders in the participating groups. Results are expressed as a percentage of subjects affected by both the disorders in each group (n=50). AN - Anorexia nervosa, BN - Bulimia nervosa, BED - Binge eating disorder, NED - No eating disorder, UW - underweight, NO - normal, OW - overweight, OB - obese.

DISCUSSION

The effect of depression on eating disorders is inadequately understood[13]. Earlier studies indicated that depressive disorder is the most common co-morbid diagnosis in people with eating disorders[14]. It might be possible that the experience of depression or anxiety causes an individual more vulnerable to the development of the eating disorder. Eating disorders have also been associated with obsessive-compulsive behavior and anxiety, as observed in numerous studies[15,16]. A higher level of depression may be associated with faulty food intake, mal-absorption of nutrients and present of an eating disorder. That is why the non-bankers who have a higher level of depression are mostly underweight. In other hand, bankers tend to be obese than non-bankers. In our study, it has also been observed that depression and anxiety were related to eating disorders in two distinct working categories of people of the society. It was however also observed that depression or anxiety affected people involved in non-banking works most, as compared to bankers. This might probably be due to stable socio-economic and job satisfactory conditions of the bankers in this country.

CONCLUSION

A potential relationship between depressive mood and symptoms of eating disorders in professionals of banking sectors in the city of Kolkata was delineated in the present study. It was observed that there was significant ($p<0.05$) difference in the level of depression as more of non-bankers were moderately depressed than bankers. Significantly higher ($p<0.01$) anxiety level was also observed in non-bankers. This has been substantiated by the fact that occurrence of eating disorders was higher in non- banking professionals (*ca.* 67% of the subjects) than the banking professionals (*ca.* 47%). The study indicated that such correlation might probably be due to stable socio-economic and job satisfactory conditions of the banking professionals in this country.

ACKNOWLEDGMENT

The authors are grateful to Sarada Ma Girls' College (under Ramakrishna Vivekananda Mission) authority for providing financial and infrastructural assistance.

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