Original Research

EMOTIONAL EATING AND ITS ASSOCIATION WITH DEPRESSION IN WOMEN: A CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Depression is a leading mental health disorder affecting over 280 million people globally, with women disproportionately affected. Emotional eating, defined as eating in response to emotions rather than hunger, is often more prevalent among women and may be associated with depression and emotion regulation difficulties.

Method: This cross-sectional study was done among 60 women aged 18–45 years diagnosed with depression as per ICD-11 criteria at Rama Medical College, Kanpur. Sociodemographic data, Beck Depression Inventory (BDI) scores, Difficulties in Emotion Regulation Scale (DERS), and Salzburg Emotional Eating Scale (SEES) scores were collected.

Result: Most participants were aged 26–45 years (73.4%), married (70.0%), and homemakers (63.3%). Mean age was 31.6 ± 7.8 years and illness duration 10.3 ± 5.1 months. Emotional eating in response to negative emotions showed a significant positive correlation with depression severity ($r = 0.52$, $p = 0.004$). Participants with severe depression had the highest SEES-negative scores (4.4 ± 0.6) compared to moderate (3.7 ± 0.8) and mild (3.1 ± 0.7) ($p < 0.001$). DERS scores were also significantly correlated with SEES scores.

Conclusion: Emotional eating, particularly in response to negative emotions, increases with the severity of depression and is significantly associated with emotion dysregulation in women.

Keywords: Emotional Eating, Depression, Women, Emotion Regulation, Sees, Ders, Beck Depression Inventory.

INTRODUCTION

Depression is one of the most prevalent mental health disorders worldwide, characterized by persistent low mood, loss of interest in activities, and various emotional, cognitive, and physical symptoms that significantly impair daily functioning. According to the World Health Organization (WHO), depression affects more than 280 million people globally, with women being nearly twice as likely as men to experience depressive episodes. This gender disparity has been attributed to a complex interplay of biological, psychological, and sociocultural factors, including hormonal fluctuations, caregiving burdens, and exposure to psychosocial stressors.

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One behavioral consequence of depression that has garnered increasing attention is emotional eating a phenomenon where individuals consume food in response to emotional states rather than physiological hunger. Emotional eating is often triggered by negative emotions such as sadness, anxiety, loneliness, or stress, and may serve as a maladaptive coping mechanism to regulate affect. Although emotional eating is observed across both genders, it is significantly more common among women, possibly due to differences in emotion regulation strategies, societal expectations around body image, and greater susceptibility to internalizing disorders.[2]

The link between depression and emotional eating is bidirectional and multifaceted. On one hand, depressive symptoms such as anhedonia, low self-worth, and poor impulse control may increase vulnerability to emotional eating. On the other hand, emotional eating can contribute to weight gain and body dissatisfaction, which in turn may exacerbate depressive symptoms, thereby creating a vicious cycle. Furthermore, poor emotion

regulation has been proposed as a key underlying mechanism mediating the relationship between depression and maladaptive eating behaviors.[3]

Despite the growing recognition of emotional eating as a public health concern, especially in women, there remains a paucity of research exploring its association with clinically diagnosed depression in Indian populations. Cultural norms, dietary habits, and gender roles unique to the Indian context may influence the manifestation and consequences of emotional eating, yet these factors have not been thoroughly examined.[4]

As per Bemanian et al. study in Norway found that 54% of participants reported emotional eating, with a notably higher prevalence among women.[5] According to study done by Herle et al. in srilanka shows emotional overeating was significantly associated with depressive symptoms in women, with a correlation coefficient of r = 0.12.[6] According to Camilleri et al., Women with depressive symptoms showed a stronger association between emotional eating and the consumption of energy-dense snacks, such as chocolate and pastries, with odds ratios showing increased consumption (e.g., OR: 1.81 for cakes).[7]

Emotional eating is particularly prevalent among overweight and obese women, who may use food as a coping mechanism for stress and emotional distress(Zare et al., 2024).With this backdrop, the present study was done to assess emotional eating behaviors in women diagnosed with depression and to explore the relationship between emotional eating, depression severity, and emotion regulation difficulties. By identifying patterns and associations specific to this population, the study aims to contribute to a more nuanced understanding of the psychological and behavioral dimensions of depression in women.[8]

METHOD

This cross-sectional observational study was conducted in the Department of Psychiatry at Rama Medical College, Hospital and Research Centre, Kanpur, with the aim of assessing emotional eating in women diagnosed with depression. The study included a total of 60 women, selected using purposive sampling from both inpatient and outpatient services. Participants were between 18 and 45 years of age and were diagnosed with depression based on the International Classification of Diseases, 11th Revision (ICD-11). Only those who provided written informed consent were included. Women with comorbid severe psychiatric or neurological disorders, intellectual disability, or serious medical conditions were excluded from the study.[9]

Data collection involved the use of several validated tools. A sociodemographic and clinical data sheet was used to gather background information. The Beck Depression Inventory (BDI), a 21-item self-report scale, was employed to assess the severity of depressive symptoms.[10] Emotional regulation was evaluated using the Difficulties in Emotion Regulation Scale (DERS), a 36-item self-report questionnaire that examines Multiple dimensions of emotion dysregulation.[11] The Salzburg Emotional Eating Scale (SEES) was used to assess emotional eating behaviors in response to different emotional states, including positive, negative, and neutral emotions.[12]

Participants were informed about the purpose of the study, and written consent was obtained prior to participation. The assessment tools were administered in a single session, either by the investigator or through self-administration, depending on the participant's preference and literacy level. Ethical approval was obtained from the Institutional Ethics Committee, and confidentiality was maintained throughout the study.[13]

Data were analyzed using IBM SPSS version 28.0.1.0. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize sociodemographic and clinical characteristics. Correlational analyses and group comparisons were conducted to explore the relationship between emotional eating and depression severity. A p-value of less than 0.05 was considered statistically significant.[14]

RESULT

Table 1. Sociodemographic Profile of Participants (N = 60)

Variable	Category	Frequency n (%)
Age group (years)	18–25	16 (26.7%)
	26–35	22 (36.7%)
	36–45	22 (36.7%)
Marital Status	Married	42 (70.0%)
	Unmarried	18 (30.0%)
Education Level	≤10th standard	20 (33.3%)
	11th–12th standard	18 (30.0%)
	Graduate and above	22 (36.7%)

	Employed	22 (36.7%)
Residence	Urban	36 (60.0%)
	Rural	24 (40.0%)
Employment Status	Homemaker	38 (63.3%)

Table 1 shows the sociodemographic characteristics of the 60 women included in the study. The majority of participants were in the age groups of 26–35 years and 36–45 years, each constituting 22 (36.7%) of the sample, while 16 (26.7%) were in the 18–25 years age group. Most participants were married (42; 70.0%), and a smaller proportion were unmarried (18; 30.0%). In terms of education, 22 (36.7%) were graduates or above, 18 (30.0%) had completed 11th–12th standard, and 20 (33.3%) had education up to the 10th standard. A significant number were homemakers (38; 63.3%), while 22 (36.7%) were employed. Regarding residence, 36 (60.0%) were from urban areas and 24 (40.0%) were from rural backgrounds.

Table 2. Clinical Characteristics of Participants

Variable	Mean ± SD / n (%)
Age (years)	31.6 ± 7.8
Duration of Illness (months)	10.3 ± 5.1
Severity of Depression (BDI)	
- Mild	14 (23.3%)
- Moderate	28 (46.7%)
- Severe	18 (30.0%)
Family History of Depression	Yes: 17 (28.3%)
	No: 43 (71.7%)

Table 2 shows the clinical characteristics of the participants. The mean age was 31.6 ± 7.8 years, and the average duration of depressive illness was 10.3 ± 5.1 months. According to the Beck Depression Inventory (BDI), the severity of depression was classified as mild in 14 (23.3%) participants, moderate in 28 (46.7%), and severe in 18 (30.0%). Additionally, 17 (28.3%) participants reported a family history of depression, while the remaining 43 (71.7%) did not.

Table 3. Correlation between Depression Severity and Emotional Eating Scores

BDI Score	**SEES-Negative**	**SEES-Positive**	**SEES-Neutral**
r	0.52	0.24	0.19
P value	0.004	0.06	0.14

Pearson's correlation used.

Table 3 shows the correlation between depression severity and emotional eating. A significant positive correlation was found between BDI scores and emotional eating in response to negative emotions ($r = 0.52$, $p<0.01$), showing that higher depression severity is associated with greater emotional eating during negative emotional states. However, the correlations between BDI scores and emotional eating in response to positive ($r = 0.24$, $p=0.06$) and neutral emotions ($r = 0.19$, $p=0.14$) were not statistically significant.

Table 4. Association of Emotional Eating (Negative Emotions) with Depression Severity Levels

Depression Severity	**SEES Negative Score Mean ± SD**	***p*-value**
Mild (n = 14)	3.1 ± 0.7	
Moderate (n = 28)	3.7 ± 0.8	
Severe (n = 18)	4.4 ± 0.6	<0.001*

One-way ANOVA used.

Table 4 shows the relationship between depression severity levels and emotional eating in response to negative emotions. Participants with severe depression had the highest mean SEES-negative emotion score (4.4 ± 0.6), followed by those with moderate (3.7 ± 0.8) and mild depression (3.1 ± 0.7). This difference was statistically significant ($p<0.001$), showing that emotional eating in response to negative emotions increased with the severity of

depression.

Table 5. Correlation between Emotional Dysregulation (DERS) and Emotional Eating Scores

SEES Dimension	Correlation with DERS	*p*-value
Negative Emotions	r = 0.49	<0.01*
Positive Emotions	r = 0.31	0.015*
Neutral Emotions	r = 0.27	0.037*

Table 5 shows the correlation between emotional dysregulation and emotional eating across different emotional contexts. A significant positive correlation was found between DERS scores and emotional eating in response to negative emotions (r = 0.49, $p<0.01$), positive emotions (r = 0.31, $p=0.015$), and neutral emotions (r = 0.27, $p=0.037$). These findings show that higher emotional dysregulation is associated with increased emotional eating regardless of the emotional valence.

DISCUSSION

In the present study investigating emotional eating and its association with depression in women, the participants were distributed across three age groups: 18–25 years (n = 16, 26.7%), 26–35 years (n = 22, 36.7%), and 36–45 years (n = 22, 36.7%), with a mean age of 31.6 ± 7.8 years. These findings show a nearly even distribution of emotional eating and depression prevalence across early and middle adulthood, with slightly higher representation in the 26–45 age group. This age-wise distribution is similar to existing study that shows the dynamic nature of emotional eating and its relationship with depression across different life stages.

A study by Elrefaay & Elyzal (2024)[15] reported a positive correlation between adverse childhood experiences and depression in women aged 17 to 77 years. This supports the hypothesis that early life experiences may shape psychological coping mechanisms, including emotional eating, later in life. Furthermore, Choi et al. (2024)[16] found that women aged 45–69 years with unhealthy dietary patterns had a 1.85-fold higher risk of depressive symptoms compared to those following healthier diets, showing that emotional eating may mediate the link between poor dietary habits and mental health in older women.

Conversely, Sander et al. (2021)[17] observed that younger females (12–25 years) exhibited stronger associations between anxiety/depression and eating disorder symptomatology, showing heightened vulnerability during adolescence and early adulthood. Wright et al. (2024)[18]. compared peri- and postmenopausal women aged ≥43 years with those aged 18–42 years and found better health-related quality of life in the older group, despite moderate depressive symptoms in both. These findings show that emotional eating and depression may be present consistently across the adult lifespan, although the manifestations and severity may vary by age.

In our study, the majority of participants were married (n = 42, 70.0%), while 18 (30.0%) were unmarried. Though marital status-specific trends in emotional eating and depression were not directly analyzed, comparisons with similar study provide valuable insights. According to Lee et al. (2020)[19], divorced, widowed, or separated women with very low food security exhibited a 48.7% prevalence of perceived depression, while married women in the same condition had a slightly lower prevalence of 42.0%. Bedaso et al. (2022)[20] noted that non-partnered pregnant women had a significantly higher likelihood of depressive disorders (AOR = 2.75; 95% CI: 2.04, 3.70), showing the protective role of spousal support against depressive symptoms that may influence emotional eating patterns.

The current study also assessed education level and its correlation with emotional eating and depression. Participants were distributed across education levels as follows: ≤10th standard (n = 20, 33.3%), 11th–12th standard (n = 18, 30.0%), and graduate and above (n = 22, 36.7%). Although no statistical association was tested in our dataset, literature provides mixed evidence. Yönder Ertem & Karakaş (2021)[21] found a significant negative correlation between emotional eating and coping skills among Turkish nursing students, showing that better coping strategies acquired through education may reduce emotional eating tendencies. On the other hand, Martin et al. (2024)[22] reported that educated women were not necessarily protected from depressive symptoms, particularly if they had experienced early life adversity. Thus, higher education may contribute to better coping but does not eliminate the risk of depression or emotional eating.

Employment status-wise distribution in our study showed 38 (63.3%) homemakers and 22 (36.7%) employed women. Al-Musharaf (2020)[23], in a study during the COVID-19 pandemic, observed emotional eating levels of 47.2% low, 40.4% moderate, and 12.4% high among young Saudi women, with 42.8% reporting depression. Notably, employment changes during the pandemic significantly impacted mental health. Mcdowell et al. (2021)[24] reported that job loss was associated with higher levels of depression (g = -0.200), anxiety (g = -0.212), and stress (g = -0.348),

showing that employment stability may be a crucial factor in mitigating emotional eating triggered by psychological distress.

Further, Honjo et al. (2020)[25] showed that middle-aged Japanese women who were self-employed or in non-regular employment had better self-rated health compared to regular employees, possibly due to reduced work-family conflict. This introduces another dimension to the role of employment type in influencing psychological well-being and emotional regulation strategies such as eating habits. Taken together, these findings show that homemakers and employed women may both be vulnerable to emotional eating and depression, but the contributing factors and severity may differ depending on occupational roles and related stressors.

Our study confirms that emotional eating and depression are prevalent among women across various age groups, marital statuses, educational levels, and employment statuses. Age-related findings from our study and supporting study show that emotional eating and depression manifest throughout adulthood, with different psychosocial stressors influencing each age group. Marital status appears to offer some protection, though unmarried and divorced women may face greater vulnerability. Educational attainment may be protective through improved coping strategies but is not universally so, and employment status plays a multifaceted role in influencing mental well-being. The complex interplay between these demographic variables necessitates further research to develop targeted interventions for emotional eating and depression in women across different life stages and socio-economic backgrounds.

CONCLUSION

This study shows a significant association between emotional eating and depression severity in women. Emotional eating in response to negative emotions was strongly correlated with higher levels of depression and increased emotional dysregulation. Women with severe depression exhibited the highest levels of emotional eating, showing that emotional distress may drive maladaptive eating behaviors. Additionally, emotional dysregulation was found to be significantly linked to emotional eating across all emotional states—negative, positive, and neutral. These findings underscore the importance of assessing and addressing emotional regulation in the management of depression and related eating behaviors.

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