

FAMILY MEALTIME AND ITS CORRELATION WITH DEPRESSIVE DISORDER

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ABSTRACT

OBJECTIVE

Our cross-sectional study aimed to assess the frequency of depressive disorder in medical students of Karachi and investigate its correlation with family mealtime frequency. This study will help to contribute in raising an awareness about the significance of family connectedness and its relation with depressive disorder.

DESIGN OF STUDY

This study analysed 376 males and females. A self-administered proforma formulated from the literature review was used to assess family dynamics; depressive disorder was assessed by PHQ-9.

PLACE AND DURATION OF STUDY

The study took place in Karachi from September 2019 to April 2020.

SUBJECT AND METHOD

Proforma was circulated online using the snowball sampling technique. Students who were non-consenting, married, hostel residents, already diagnosed with depressive disorder, taking any psychotropic drugs, or witnessed any emotional trauma within the last one month were excluded. The data were evaluated using IBM SPSS Statistics v26.0.

RESULTS

Overall, 93.9% of students showed depressive disorder of various severities. A significant inverse correlation was found between family meal time frequency and depressive disorder with a p-value of 0.025 as per chi-square test.

CONCLUSION

Findings suggest that family mealtimes may have a positive influence on mental health disorders and can serve as a milieu for intrafamilial bonding, thus lowering depressive scores and enhancing mental health.

KEYWORDS

Family Mealtime, Depressive disorder, Medical Students, Depression, PHQ-9

INTRODUCTION

Family mealtime is when all members of a family unite to take their meal and spend quality time together. It provides them with an opportunity to interact with each other and has healthy conversations, thus serving a milieu for intrafamilial bonding. A decrease in mental health disorders have been reported with the increasing frequency of family meals.¹ Family meals as an essential routine practice confer a safe environment for an adolescent's healthy and lively psychosocial growth.^{2,3} Various studies have been conducted that have proved the presence of both parents mandatory for their children's mental and emotional development. Parental death poses a significant risk for depressive disorder in adult life.⁴ Students having frequent family meals reported a high level of parental monitoring and lower depressive scores, and were less likely to resort to thoughts about suicide, make a suicide attempt, binge drink, smoke, use marijuana or have unsafe sex.^{5,6} Families who participate in their leisure and routine activities together such as mealtime have better personal well-being and lesser eating disorders.^{7,8} However, owing to the busy personal lives of people in present times, the opportunity to have family mealtimes has significantly reduced, which may have a deteriorating influence on the emotional well-being of an individual. People are actively engaging themselves in social gatherings using mealtime as a platform to form new friendships to counter the stress and loneliness, hence emphasizing the safe environment a family provides.^{9,10}

Depressive Disorder is a mood disorder characterized by loss of interest and pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep and/or appetite, and poor concentration. It is an important contributor to the global burden of disease affecting a large proportion of people globally with a prevalence of 3.2%.¹¹

Depression usually follows as a consequence of dealing with unfortunate circumstances in one's life for example losing or struggling with a job, grieving a loved one and dealing with any other traumatic event etc.¹² Worldwide, more than one-fourth of medical students are estimated to be stressed, which serves as an important risk factor for depressive disorder ultimately resulting in a higher prevalence among medical students as compared to the general population. Depressive disorder in medical students of Pakistan was found to be significantly higher, accounting for about 57.6%.¹³



The field of medicine is considered being more stressful and back-breaking because the students have burdensome academic responsibilities, along with stressors like: remarkably competent associates, failure in retention of maximum knowledge, difficulty in deciding the speciality and/or pursuing the one they aimed for, adapting to the transformation of being a student to becoming a physician, to name a few. These challenges place a negative influence not only on their academic performance but their physical health and psychosocial well-being as well.¹⁴ Medical undergraduates who are already suffering from depressive symptoms feel emotionally desolate and distant from their parents, which gives rise to consequences that are detrimental to their already declining mental health and adversely affect their studies.

This study aims to identify the correlation of depressive disorder with family mealtime, and its associated factors among the medical students of Karachi. This study will help to contribute in raising awareness about the significance of family connectedness and its relation with depressive disorder.

SUBJECTS AND METHODS

A cross-sectional study was conducted at Jinnah Sindh Medical University, Karachi from September 2019 to December 2020. A snowball sampling technique was employed for data collection. Ethical approval was obtained from the institutional review board -JSMU/IRB/2019/228. Consent and confidentiality were ensured for all participants.

Proforma was circulated online among medical students of Karachi. The proforma had a consent form before the questionnaire which participants had to agree to get to the questionnaire. This study collected data from 376 medical students as per sample size (calculated by the WHO sample size calculator) studying in various medical schools in Karachi. Students from all five academic years were included. Students who were non-consenting, married, hostel residents, already diagnosed with depressive disorder, taking any psychotropic drugs or witnessed any emotional trauma within the last one month were excluded.

A semi-structured proforma was prepared and distributed to acquire information about the demographics of the participants (age, gender, year of study, ethnicity) which was followed by questions regarding their family dynamics and the associated factors. It consisted of questions related to various demonstrable risk factors like substance use and their frequency along with the family history of depressive disorder. Regarding family dynamics, information about the family structure, family mealtime and its frequency, occupation and availability of parents during the meals was assessed. Identification details about participants were hidden and data was only accessible to the primary researchers to ensure confidentiality.

Patient's health questionnaire 9 (PHQ-9) was used to evaluate depression. It is a self-administered diagnostic tool for mental disorders consisting of nine questions each scored from 0-3. Scoring for the severity of depression is as follows, 0: no depression, 1-4: minimal, 5-9: mild, 10-14: moderate, 15-19: moderately severe, 20-27: severe.

Data were analysed using IBM SPSS Statistics Version 26.0. Descriptive frequencies of demographic data (age, gender, year of study), depressive disorder and family meals were assessed. Correlations between meal time frequency and severity of depression among different categories are analysed. Chi-square tests were applied to these correlations to find significance, if any.

RESULTS

A total of 376 participants with a mean age of 21.29 ± 1.414 (Table 1) participated in the study. Almost half of the participants were 4th-year students, 49.5%, with Urdu speaking making up about 66.2% of total participants.

Overall, 93.9% of the students showed depression of different severities (PHQ-9 scores more than 4). These students are categorised in different severities of depressive disorders as per their scores shown in table 2. Chi-square test analysis was done. A significant relationship was found between family meal time frequency and depression severity with a p-value of 0.025 (Table 2). Analysis between PHQ-9 scores and meal time frequency was also found significant with a p-value of 0.009 (Table 4). The mean PHQ-9 score was 8.76 with a standard deviation of 6.69 suggesting mild-moderate severity of the depressive disorder is most prevalent (Table 4). This finding is consistent with table-4 showing mild depression as the most common finding (29.5%).

Family meal time frequency and severity of depression are analysed in the categories of gender, ethnicity, availability of parents and family structure. A significant relationship between the two variables is found among females and Urdu-speaking ethnicity with a p-value of 0.013 and 0.034 respectively (Table 3) as per the chi-square test. Participants who had both their parents alive and the ones living with their mothers also showed a decrease in the severity of depressive disorder with frequent family meals (significant p-value of 0.030 and 0.002 respectively). Nuclear family structure also imparts a significant decrease in the severity of depression with frequent family meals (p-value 0.026).



Table 1
Characteristics of study participants with their demographic values

| Characteristics | Demographics |
|------------------|----------------------------------|
| Family Meal Time | |
| 1. No Meal | 1. 33 (8.8%) |
| 2. Once Daily | 2. 162 (43.1%) |
| 3. Twice Daily | 3. 112 (29.8%) |
| 4. Thrice Daily | 4. 29 (7.7%) |
| 5. Once Weekly | 5. 25 (6.6%) |
| 6. Once Monthly | 6. 15 (4.0%) |
| Gender | |
| 1. Male | 1. 61 (16.2%) |
| 2. Female | 2. 315 (83.8%) |
| Age | 21.29±1.414 (17-25) ¹ |
| Study Year | |
| 1. 1st Year | 1. 41 (10.9%) |
| 2. 2nd Year | 2. 53 (14.1%) |
| 3. 3rd Year | 3. 66 (17.6%) |
| 4. 4th Year | 4. 186 (49.5%) |
| 5. 5th Year | 5. 30 (8%) |
| Ethnicity | |
| 1. Urdu Speaking | 1. 249 (66.2%) |
| 2. Pathan | 2. 19 (5.0%) |
| 3. Punjabi | 3. 49 (13.0%) |
| 4. Sindhi | 4. 34 (9.0%) |
| 5. Others | 5. 24 (6.3%) ¹ |

Note: ¹Mean age with Standard deviation and range of ages

Table 2
Association between depressive disorder severity with family meal time frequency²

| How many times do you take meals with your family? | Depressive Disorder with Severity | | | | | |
|--|-----------------------------------|---------------------------------------|------------------------------------|--|---|--------------------------------------|
| | No Depression n (%) [*] | Minimal Depression n (%) [*] | Mild Depression n (%) [*] | Moderate Depression n (%) [*] | Moderately Severe Depression n (%) [*] | Severe Depression n (%) [*] |
| No Meal | 2 (0.5) | 6 (1.6) | 10 (2.6) | 4 (1.0) | 6 (1.6) | 5 (1.3) |
| Once Daily | 10 (2.6) | 39 (10.4) | 46 (12.2) | 41 (10.9) | 12 (3.2) | 14 (3.7) |
| Twice Daily | 8 (2.1) | 37 (9.8) | 33 (8.8) | 19 (5.0) | 8 (2.1) | 7 (1.9) |
| Thrice Daily | 2 (0.5) | 10 (2.6) | 7 (1.9) | 3(0.8) | 3 (0.8) | 4 (1.0) |
| Once Weekly | 1 (0.3) | 3 (0.8) | 10 (2.6) | 4(1.0) | 5 (1.3) | 2 (0.5) |
| Once Monthly | 0 (0.0) | 2 (0.2) | 5 (1.3) | 2 (0.5) | 0 (0.0) | 6 (1.6) |
| Total | 23 (6.1) | 97 (25.8) | 111 (29.5) | 73 (19.4) | 34 (9.0) | 38 (10.1) |

Note: ²Analysis done via chi-square test showing significant p-value of 0.025.
^{*}n(%)= number of participants and their percentage in each category

Table 3
Analysis between meal time frequency and depression severity among different categories

| Variable | n (%) | p-value ³ |
|---|-------------|----------------------|
| Gender | | |
| 1. Male | 61(16.2) | 0.944 |
| 2. Female | 315(83.8) | 0.013 ⁴ |
| Ethnicity | | |
| 1. Urdu Speaking | 249 (66.2) | 0.0344 |
| 2. Pathan | 19 (5.0) | 0.651 |
| 3. Punjabi | 49 (13.0) | 0.22 ⁴ |
| 4. Sindhi | 34 (9.0) | 0.448 |
| 5. Others | 24 (6.3) | 0.776 |
| Family Structure | | |
| 1. Nuclear Family | 286 (76.1) | 0.0264 |
| 2. Joint Family | 90 (23.9) | 0.823 |
| Family Both Parents Alive | | |
| 1. Yes | 343 (91.2) | 0.030 ⁴ |
| 2. No | 33 (8.8) | 0.185 |
| Living with which Parent for last one month | | |
| 1. Both | 298 (79.2) | 0.213 |
| 2. Mother | 43 (11.4) | 0.002 ⁴ |
| 3. Father | 10 (2.7) | 0.290 |
| 4. None | 25 (6.6) | 0.903 |
| 5. Total ³ | 376 (100.0) | 0.025 ⁴ |

Note: ³Total number of participants with percentages
⁴p-value as per chi-square analysis (significant when more than 0.05)

Table 4
Analysis between meal time frequency and PHQ-9 scores

| Meal Time | Total PHQ-9 Score | | | |
|--------------------|--------------------|-------|----------------|--------------------|
| | n (%) [†] | Mean | Std. Deviation | p-value |
| No Meal | 33 (8.8) | 10.06 | 7.071 | 0.009 ⁷ |
| Once Daily | 162 (43.1) | 8.78 | 6.364 | |
| Twice Daily | 112 (29.8) | 7.47 | 6.230 | |
| Thrice Daily | 29 (7.7) | 8.38 | 7.346 | |
| Once Weekly | 25 (6.6) | 10.08 | 6.633 | |
| Once Monthly | 15 (4.0) | 13.87 | 8.814 | |
| Total [‡] | 376(100.0) | 8.76 | 6.686 | |

Note: ⁵n is the number of participants in each category and % is their percentage among total participants rounded upto one decimal place.
⁶Total number of participants in the study
⁷Significant p-value ≤ 0.05 as per chi square test



DISCUSSION

The predominance of symptoms related to depression among medical students is fairly factual, as reported in various cultural settings according to a study conducted in Bahrain.¹⁵ Another study conducted at King Faisal University, Saudi Arabia, highlighted various stressors among Saudi medical students, including academic pressure, peer pressure and financial instability along with daily life struggle subjecting them to develop a depressive disorder.¹⁶ Previous studies have established that depressive disorder is a common psychiatric disorder which is found among medical students of Karachi enrolled in MBBS program.¹³ It was also seen that frequent and interactive family meal time causes a decrease in depressive symptoms in children and the elderly.^{1,17} However, there is no current study proving this effect of frequent family mealtime on young adults, medical students in particular. Our study aims to find this association between frequent family mealtime and the severity of depressive disorder, if any.

In this cross-sectional study, it was seen that increasing frequency of family mealtimes resulted in a lower prevalence of depressive disorders. People who were taking meals thrice daily with their family showed a minimal prevalence of depressive symptoms, while people who weren't taking any meals with their family reported the highest frequencies of mild, moderately severe, and severe depressive disorder. These results coincide with previous research done in this regard that reported a protective effect of family mealtime on depressive disorder. A study done on elderly Koreans reported fewer depressive symptoms among those who take their meals with family, compared to the ones who ate alone.¹ It is necessary to note the decrease in family mealtime frequency, which can be due to various factors, comprising but not limited to poor time management and technological distractions such as televisions and mobile phones.¹⁸

It is essential to mention the strengths of this research, since this is the first study that has been conducted on the adults of this age group, as previous studies frequently constituted adolescents and older populations. The depressive disorder has been assessed by using well-validated scores among a sufficiently large sample, which increased the generalisability of the findings.

Another point that was put into consideration while conducting this research was to determine the availability of the parents during mealtimes to assess if it negatively impacted the frequency of mealtimes. Results found are significant when participants have both parents alive in comparison with a single parent. This coincides with previous studies proving the loss of a parent is a risk factor for depressive disorder. A cohort study done in Sweden has shown that parental death from natural causes acts as a long-

term risk factor for development of depressive disorder in adult life. However, parental death specifically unnatural death such as homicide, suicide or accident as a major risk factor for early development of depressive disorder in offspring.¹⁹

When results were compared for a specific parent, those living with their mothers alone showed a significantly low prevalence of depressive symptoms in comparison with participants living with both parents, fathers or none of the parents. Previous studies have also shown that mother-child connectedness decreases the prevalence of depressive disorder and suicidal ideation in children. A study done in Malaysia that probed the parent-child relationship and its association with depressive disorder declared the mother-child relationship as the best tool to predict the risk of depressive disorder.²⁰ Another study done on parent-child connectedness identified it as an important risk factor for depressive disorder.²¹ This protective effect of living with mothers is in line with emotional attachment to mothers being preferred by western culture.²²

A study done in Abbottabad, Pakistan proved that the joint family system is more satisfactory than nuclear families. However, the level of satisfaction in that study was assessed based on a single question. This can be a major cause of different findings.²³

Due to its cross-sectional design, it is not possible to determine whether the cause of the infrequent mealtime routine was the parents' unavailability or the participant's preexisting depressive moods or substance usage. We initially collected ethnically diverse data, but the results showed a high number of Urdu-speaking participants since Karachi is densely populated by Urdu-speaking ethnicity. Extensive studies can be done in areas with the majority of the population belonging to other ethnicities. An insignificant association of the two variables among males may be due to the lesser number of male participants as female predominance is established in medical students in Pakistan.²⁴ Further studies can be conducted in this regard with equal and sufficient numbers of male and female participants.

CONCLUSION

The prevalence of the depressive disorder in medical students of Karachi is alarmingly high. Most of the students were suffering from some degree of depressive disorder, and female students being more prone. This needs immediate intervention, since this profession demands the utmost productivity and diligence. Family mealtime affects a decrease in depressive disorder frequency. This positive effect of family mealtime can be used as a non-pharmacological intervention to decrease the frequency of depressive disorders.



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UNDERTAKING FORM

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