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# Comparison of Depressive Presentations Across Gender First Comprehensive Study in the Eastern Zone of India

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**ABSTRACT**

This unique study highlights the differences in depressive symptomatology across gender in the Eastern Zone of India and is the first of its kind. There is paucity of knowledge in this domain which many a times leads to delayed diagnosis and setback in initiation of treatment for the patient. This humble endeavour is to identify the gap and explore the possibilities to bridge the same. A depressed mood that lasts for at least two weeks in most circumstances is known as depression. It is frequently accompanied by low energy, low self-esteem, a loss of interest in typically enjoyable activities, guilt-ridden thoughts, thoughts of self-harm, disturbed sleep, decreased appetite and numerous somatic complaints that have no apparent cause. Major depressive disorder (MDD) or unipolar depression is the term used to describe patients who exclusively experience depressed episodes. Cross sectional, observational, institutional based study using four study tools spanning 18 months. 50 adult patients of each gender who were newly diagnosed case of MDD and drug naïve, fulfilling the inclusion and exclusion criteria were randomly selected using a predetermined random number generated from computer. Data has been presented as percentages, mean and standard deviation after statistical analysis. Tests were two tailed and $p<0.05$ was considered significant. Hypothesis test summary was obtained regarding individual items of BDI and SDQ. Decision trees were drawn by CRT (Classification and Regression Trees) model for items of BDI and SDQ. Significant gender differences in depressive symptomatology among adult patients identified.

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**Key Words**
Depression symptomatology, gender variations, indian context

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## INTRODUCTION

Present day's clinical practice every clinician will face several patients of depression. Depression has been considered as "the common cold of Mental Health" by Harvard Mental Health Letter, 2006.

**History and epidemiology:** Hippocrates, a Greek physician, first used the terms "mania" and "melancholia" to refer to mental disturbances in the fourth century B.C. Later, black bile was identified by Roman physician Celsus as the source of melancholy. Global epidemiological research continuously lists MDD as one of the most prevalent psychiatric conditions. According to estimates, the lifetime frequency in western nations is between 12 and 16% Alonso *et al*.[1], Hasin *et al*.[2] and Kessler *et al*.[3] whereas in Asia it is comparatively lower, ranging between 3-6% Chong *et al*.[4] Gu *et al*.[5] and Orui *et al*.[6].

**Rationale of study:** The prevalence of major depressive disorder (MDD) is known to be 1.5-3 times higher in women than in men Kessler[7], Picco *et al*.[8], Seedat *et al*.[9], Weissman and Olfson[10], most likely brought on by variations in societal pressures, childbirth, obstetrical problems, hormonal variances and perinatal depression. A meta-analysis by Lim *et al*.[11], found that between 1994 and 2014, the cumulative point prevalence of depression was 12.9%, the prevalence within a year was 7.2% and the lifetime prevalence was 10.8%.

Research on the variations in depressed symptomatology between genders is scarce, particularly in India. The goal of this study is to close the knowledge gap in this uncharted field of research and assist patients through early intervention. The findings of this research will assist in directing attention away from mood and on to the clinical presentation and symptoms of depression in the adult population who visit psychiatry and non-psychiatry departments complaining of somatic, anxiety and biological function abnormalities symptoms.

**Indian scenario:** According to a press release issued by the Indian government, the WHO's 2017 report "Depression and Other Common Mental Disorders Global Health Estimates" estimates that the prevalence of depressive disorders in India is 4.5% of the country's total population[12]. The symptom profile has not been thoroughly examined in many studies, although often reported symptoms include somatic complaints, decreased appetite, poor sleep, hostility, aggression, and pessimism, as well as depression and anhedonia.
Why focus on gender?

A review article by Afifi[13], explains how the gender approach to health involves differentiating between biological and social elements, which offers direction for determining the right responses from the public policy and mental health care system. Even in situations where there may not be a significant socioeconomic gradient, gender inequalities are evident. Women's societal role as caretakers means that others in society are impacted by their mental health.

According to WHO[14], in women, depression disorders account for around 41.9% of the impairment resulting from neuropsychiatric illnesses, whereas in men it accounts for 29.3%.

**Gender prevalence:** Meta-analysis by Abate[15], comprising 19639 patients and a male to female ratio of 1.14:1 revealed that the likelihood of depression in men is 63% lower than that in women (Odds ratio = 0.63,95% Confidence Interval = 0.59, 0.68).

A study by Sherchand *et al*.[16], According to research from Nepal, working women are more likely than males to experience depression, with sedentary lifestyles being the main contributing cause. Findings of Arenliu *et al*.[17] demonstrated that the mean depression for the whole sample was M = 7.87, SD = 3.88 with females reporting a significantly higher mean depression (M = 8.14; SD = 3.88) compared to males (M = 7.56, SD = 3.86), at t (1247) = 2.604, $p<0.009$, Cohen's d = 0.15, which indicates a small effect size. A study by Junior *et al*.[18] showed that the likelihood of depression was considerably higher in women and younger students, with a higher endorsement of cognitive-somatic items compared to affective items on the scale. Suicidal thoughts, "loss of interest in sex", and "guilty feeling" were the three symptoms that most likely reflected the degree of depression.

Study by Seo *et al*.[19], In Korea, it was discovered that women with symptoms such as disordered eating patterns, low body image satisfaction, low self-esteem, and high levels of stress had a mean K-BDI depression score that was considerably greater than that of men. Result from the study by Masten *et al*.[20] was the Spanish version of the Center for Epidemiological Studies Depression Scale (CES-D), which was used to measure depression in two groups of adolescents who took part in the study, revealed no gender differences in depression scores. According to Picco *et al*.[8] MDD was more prevalent among men and women who were divorced/separated and widowed, as compared to those who were single. Among men, MDD was more prevalent among Indian and other ethnicities as compared to Chinese.

On the other hand Vredenburg *et al*.[21] stated that A cluster of fundamental symptoms of depression, such as dysphoric mood, pessimism, sleep difficulty, weight loss, etc., was found in individuals of both genders. On the other hand, men were more likely to report feeling unsatisfied and unable to function well at work, having trouble making decisions, worrying about their general physical condition and having

suicidal thoughts and intentions. Chronicity of depression appears to affect women more seriously than men as manifested by an earlier age of onset, greater family history of affective disorders, greater symptom reporting for social adjustment and poor quality of life as stated by Kornstein *et al*.[22].

**Female preponderance:** Piccinelli and Wilkinson[23], in their review article elaborated risk factors rendering females more vulnerable to depression like childhood and adult family environment and adverse experiences, prior depression and anxiety disorders, genetic factors, hormonal imbalances- gonadal, adrenal, thyroid and neurotransmitter system dysfunctions, social support, coping style, social roles and cultural norms. Hhave elaborated cognitive vulnerability transactional stress theory which states that increase in depression can lead transactionally to more self-generated dependent negative life events and thus reiterating the causal chain. Madden *et al*.[24], elucidates some risk factors for female depression like the role of stereotypes, stigmatization of women, social role theory and the role of power.

**Symptoms across gender:** The study by Bennett *et al*.[25], found that depressed girls had more guilt, body image dissatisfaction, self-blame, self-disappointment, feelings of failure, concentration problems, difficulty working, sad/depressed mood, sleep problems, fatigue and health worries. In contrast, depressed boys had higher clinician ratings of anhedonia, depressed morning mood and morning fatigue. Similar findings were corroborated by Khesht-Masjedi *et al*.[26]. A study by Chaplin *et al*.[27] found that total anxiety symptoms, worry and over-sensitivity symptoms were stronger predictors of later depressive symptoms in girls during early adolescence.

Angst *et al*.[28] found clear gender differences in causal attribution and in coping. Men coped by increasing their sports activity and consumption of alcohol whereas women through emotional release and religion. Women felt the effects of depression in their quality of sleep and general health, whereas men felt it more in their ability to work. Carter *et al*.[29] claimed that depressed females reported significantly more appetite increase, weight gain and carbohydrate craving and in general, expressed their depression in a more emotional manner.

## MATERIAL AND METHODS

**Aim and objective:**

- Presence of gender specific differences relating to presenting symptoms of depression among adults
- Whether there are any unique symptom clusters that are specific for a particular gender

**Study design:** Institution based, quantitative, cross-sectional, and observational

- **Setting:** OPD and IPD, Department of Psychiatry
- **Place:** K.P.C Medical College and Hospital, Kolkata, India
- **Duration:** 18 months (1st January, 2018-30th June, 2019)
- **study population:** Patients presenting with depressive symptoms
- **sample size:** Randomly selected 100 patients

**Inclusion criteria:**

- Newly diagnosed cases of depression fulfilling DSM-5 criteria and not taking any anti-depressant for last 6 months
- Aged between 18-60 years
- Conversant in either Hindi/English/Bengali to the level of primary education.
- Willing to participate in the study with informed consent

**Exclusion criteria:**

- Gender specific depression such as pre-menstrual, post-natal, peri-menopausal depression
- Cases of depression with:
- Past history of manic episode
- psychotic features
- co-morbid psychiatric illness
- Cases of depression due to substance use, medication or organicity
- Inadequate information

**Study tools:**

- The Beck Depression Inventory (BDI) Jackson-Koku[30]
- Symptoms of Depression Questionnaire (SDQ) Pedrelli *et al*.[31], Salerno *et al*.[32]
- Mini International Neuropsychiatric Interview (M.I.N.I) Pettersson *et al*.[33]

**Study technique:**

- 100 male and 100 female patients meeting required criteria were given study serial numbers. 50 patients from each gender were randomly selected by a predetermined random number generated from computer
- Selection of subjects was according to diagnostic criteria of DSM 5 as drug naïve new cases of MDD
- Informed consent was taken from both the patient and the caregiver/guardian when present before the commencement of the study

- Data was collected from each patient in form of questionnaires of BDI, SDQ and MINI
- Study was commenced after ethical approval by institutional Ethical Review Board

## RESULTS

Data was pooled, after statistical analysis it was presented as percentages, means and standard deviation. Tests were 2 tailed, p<0.05 was considered statistically significant (95% confidence interval). Hypothesis test summary was obtained regarding individual items of BDI and SDQ. Decision trees were drawn by CRT (Classification and Regression Trees) model for items of BDI and SDQ.

## DISCUSSION

This cross sectional, hospital based research was conducted in a tertiary care hospital, West Bengal, India. 50 adults of each Gender newly diagnosed drug naïve cases of MDD were randomly selected for the study.

**Comparing age and gender demographics (table 1):**

- Total number of male patients (N = 50) and female patients (N = 50)
- Female patients were older (mean=37.82+13.668 years) compared to males (mean=34.90+12.385 years).
- The observed difference was not statistically significant (p=0.266, N.S. using t-test)
- The overall sample also showed females aged 40-45 years and males aged 45-50 years were less prone to depression

**Comparing age and demography (Table 2)**:

- Showing total rural patients are 51 (N = 51) and urban patients are 49 (N = 49)
- Patients came from rural area were older (mean = 37.47+13.034 years) than patients of urban area (mean = 35.20+13.118 years). Though the observed value was not statistically significant (p = 0.388, using t-test)

**Comparing gender and demography (table 3):**

- Female patients ware more from rural area (51.0%) whereas male patients ware more from urban area (51.0%). The observed value was not statistically significant

**Descriptive analysis of total BDI items among Gender (Table 4):**

- Female patients report higher sum total of BDI items (mean = 34.2000+7.60505) than that of male patients (mean = 32.6800+8.60100). The result is statistically not significant (p >0.05).Though this finding is corroborated by the findings of Beck *et al*.[34] Oliver and Simmons[35], Ambrosini *et al*.[36]

**Correlation of bdi items with gender (table 5):**

- BDI-13 has highest correlation with male patients (mean = 2.40+0.571) and BDI-14 has lowest correlation with male patients (mean = 0.24+0.555)

**Hypothesis test for BDI items among gender (table 6):**

- The null hypothesis was the medians of BDI items are the same across male and female gender. But this study found BDI item 4 which indicates about satisfaction level of patient had p<0.050 and BDI item 14 which indicates about bodily appearance of patient had p-value 0.000, both rejected the null hypothesis and were statistically significant
- So, the first objective of the study fulfilled. It clearly denotes that there were gender specific differences relating to the presenting symptoms of depression (BDI-4 and BDI-14) among the adult patients
- This outcome is supported by the previous studies Angst[37] and Dobler, Mikola[38], Carter *et al*.[29] Vredenburg *et al*.[21], Wilhelm *et al*.[39]

**Correlation of sdq items with both gender (table 7):**

- Descriptive analysis of SDQ items among Gender. SDQ-1 has highest correlation with male patients (mean = 5.08+0.634)
- Hypothesis test for SDQ items among Gender (Table 8)
- The null hypothesis was the medians of SDQ items are the same across male and female gender. But this study found six SDQ items had statistically significant p-value. These were SDQ-2(p = 0.045) which denotes response of mood of patient, SDQ-3 (p = 0.031) which denotes affect of patient, SDQ-20 (p = 0.026) which denotes energy level of patient, SDQ-27 (p = 0.011) which denotes panic attacks, SDQ-32 (p = 0.016) which denotes palpitations and SDQ-34 (p = 0.016) which denotes gastrointestinal symptoms
- So, again the first objective of the study fulfilled. It clearly denoted that there were gender specific differences relating to the presenting symptoms of depression (SDQ-2, SDQ-3, SDQ-20, SDQ-27, SDQ-32 and SDQ-34) among the adult patients

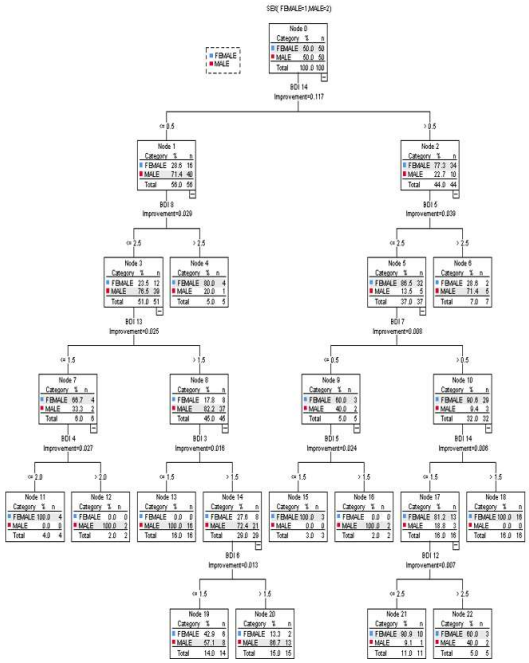

Fig. 1: Classification and Regression Tree - response to BDI

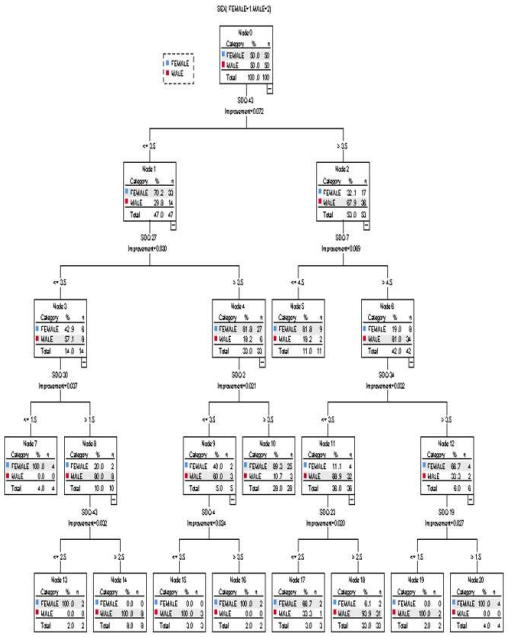

Fig. 2: Classification and Regression Trees - response to SDQ

**Classification and regression tree (CRT) in male and female patients over bdi items (Fig 1):** Interpreting the tree diagram involved travelling down along the tree's paths from the root node to the leaf node (a node with no further child nodes). Starting from the root node (node 0), in the overall sample of 100 patients, male and female were equal that is 50%. Moving down from the root node, the first child node in the tree was BDI-14 item. If BDI-14 item scored more than 0.5 (node 2) then female patients (77.3%) contribute more than

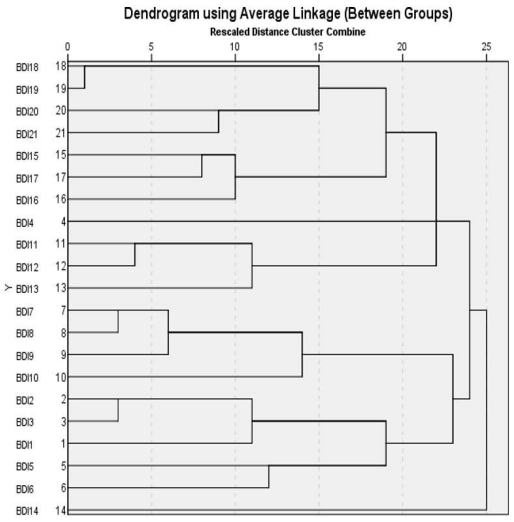


Fig. 3: Dendrogram showing clustering of all BDI items in both sexes

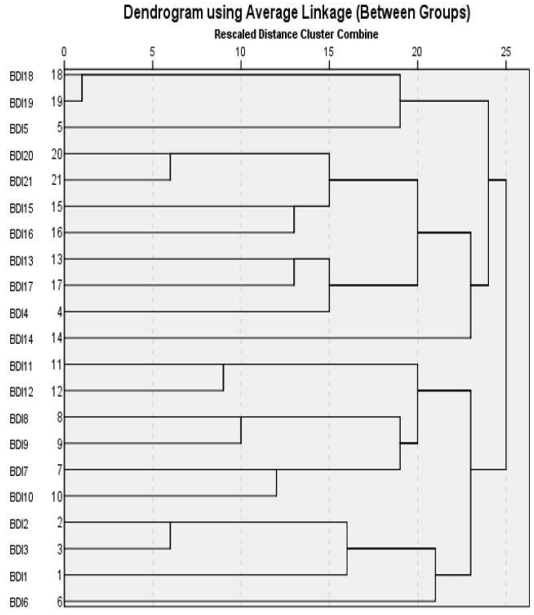


Fig. 4: Dendrogram showing clustering of all BDI items in female patients

male patients (22.7%). On the other hand if BDI-14 item scored <0.5 (node 1) then male patients (71.4%) overcome females(28.6%). Again node 1 was divided into child nodes on the basis of BDI-8 item and node 2 was divided into child nodes on the basis of BDI-5 item and so on.

As the CRT growing method attempted to maximize within-node homogeneity, a terminal node in which all cases had the same value for the dependent variable (Gender) was a homogenous node that required no further splitting because it was 'pure'. So, from the CRT it is evident that females were much more concerned about their physical (bodily) appearance (BDI-14) and are prone to self- criticism (BDI-8) than that of males. On the other hand males felt much guilty (BDI-5) than females.

**Classification and Regression Tree (CRT) in male and female patients over SDQ items (Fig. 2):** Starting from the root node (node 0), in the overall sample of 100 patients, male and female were equal that is 50%. Moving down from the root node, the first child node in the tree was SDQ-43 item. If SDQ-43 item scored more than 3.5 (node 2) then male patients (67.9%) contribute more than female patients (32.1%).On the other hand if SDQ-43 item scored <3.5 (node 1) then

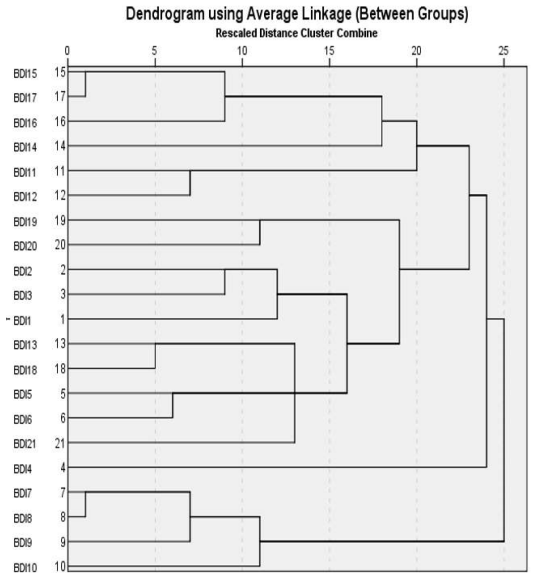


Fig. 5. Dendrogram showing clustering of all BDI items in male patients.

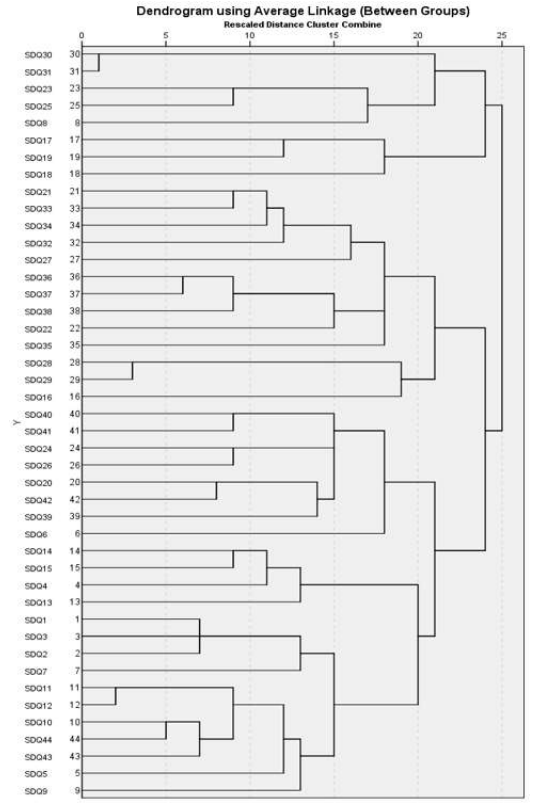


Fig. 6: Dendrogram showing clustering of all SDQ items in both sexes.

female patients (70.2%) overcome males (29.8%). Again node 1 was divided into child nodes on the basis of SDQ-27 item and node 2 was divided into child nodes on the basis of SDQ-7 item and so on. So, from the CRT it was very much evident that males reported more guilty feeling (SDQ-43) and lack of interest (SDQ-7) than females and on the other hand females complained more panic attacks (SDQ- 27) than males.

**Clustering of BDI items in respect of gender:** The agglomerative hierarchical clustering algorithms build a cluster hierarchy that is commonly displayed as a

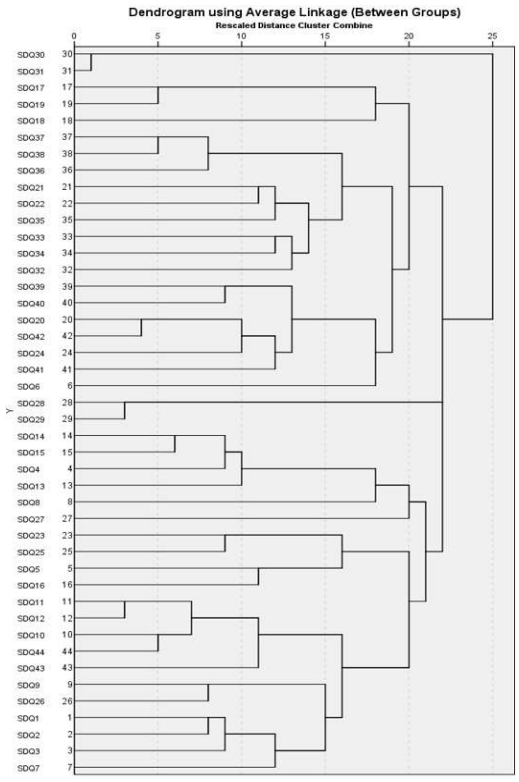


Fig. 7: Dendrogram showing clustering of all SDQ items in female patients

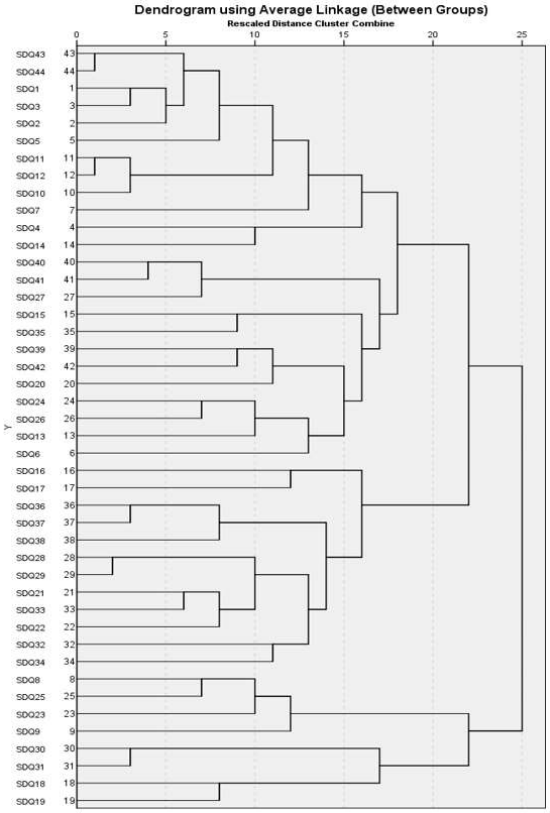


Fig. 8. Dendrogram showing clustering of all SDQ items in male patients

Table 1: Age and Gender Demographics

| | Gender | N | Mean | Std. Deviation | Std. error mean |
|---|---|---|---|---|---|
| AGE | FEMALE | 50 | 37.82 | 13.668 | 1.933 |
| | MALE | 50 | 34.90 | 12.385 | 1.752 |

Table 2: Comparing Age and Demography

| | Demography | N | Mean | Std. deviation | Std. error mean |
|---|---|---|---|---|---|
| AGE | RURAL | 51 | 37.47 | 13.034 | 1.825 |
| | URBAN | 49 | 35.20 | 13.118 | 1.874 |

Table 3: Comparing Demography and Gender

| Demography | | | Female | Male | Total |
|---|---|---|---|---|---|
| | Rural | Count | 26 | 25 | 51 |
| | | % within DEMOGRAPHY | 51.0% | 49.0% | 100.0% |
| | Urban | Count | 24 | 25 | 49 |
| | | % within DEMOGRAPHY | 49.0% | 51.0% | 100.0% |
| Total | | Count | 50 | 50 | 100 |
| | | % within DEMOGRAPHY | 50.0% | 50.0% | 100.0% |

Table 4: Descriptive analysis of total BDI items among Gender

| | Gender | N | Mean | Std. Deviation | Std.error mean |
|---|---|---|---|---|---|
| BDI TOTA L | female | 50 | 34.2000 | 7.60505 | 1.07552 |
| | male | 50 | 32.6800 | 8.60100 | 1.21636 |

Table 5: Correlation of BDI items with both Gender

| | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| BDI 1 | FEMALE | 50 | 1.86 | 0.808 | 0.114 |
| | MALE | 50 | 1.68 | 0.683 | 0.097 |
| BDI 2 | FEMALE | 50 | 1.90 | 0.995 | 0.141 |
| | MALE | 50 | 1.76 | 0.894 | 0.126 |
| BDI 3 | FEMALE | 50 | 1.76 | 0.870 | 0.123 |
| | MALE | 50 | 1.80 | 0.904 | 0.128 |
| BDI 4 | FEMALE | 50 | 1.70 | 0.814 | 0.115 |
| | MALE | 50 | 2.14 | 0.808 | 0.114 |
| BDI 5 | FEMALE | 50 | 1.02 | 0.915 | 0.129 |
| | MALE | 50 | 1.04 | 1.068 | 0.151 |
| BDI 6 | FEMALE | 50 | 1.84 | 1.201 | 0.170 |
| | MALE | 50 | 1.76 | 1.255 | 0.177 |
| BDI 7 | FEMALE | 50 | 1.18 | 0.748 | 0.106 |
| | MALE | 50 | 1.00 | 0.808 | 0.114 |
| BDI 8 | FEMALE | 50 | 1.20 | 1.107 | 0.156 |
| | MALE | 50 | 0.84 | 0.912 | 0.129 |
| BDI 9 | FEMALE | 50 | 1.14 | 0.904 | 0.128 |
| | MALE | 50 | 1.18 | 0.896 | 0.127 |
| BDI 10 | FEMALE | 50 | 1.86 | 0.783 | 0.111 |
| | MALE | 50 | 1.74 | 0.899 | 0.127 |
| BDI 11 | FEMALE | 50 | 2.00 | 0.700 | 0.099 |
| | MALE | 50 | 2.20 | 0.670 | 0.095 |
| BDI 12 | FEMALE | 50 | 2.28 | 0.671 | 0.095 |
| | MALE | 50 | 2.36 | 0.693 | 0.098 |
| BDI 13 | FEMALE | 50 | 2.06 | 0.843 | 0.119 |
| | MALE | 50 | 2.40 | 0.571 | 0.081 |
| BDI 14 | FEMALE | 50 | 1.30 | 1.147 | 0.162 |
| | MALE | 50 | 0.24 | 0.555 | 0.079 |
| BDI 15 | FEMALE | 50 | 2.10 | 0.678 | 0.096 |
| | MALE | 50 | 2.02 | 0.795 | 0.112 |
| BDI 16 | FEMALE | 50 | 2.06 | 0.843 | 0.119 |
| | MALE | 50 | 2.18 | 0.825 | 0.117 |
| BDI 17 | FEMALE | 50 | 2.20 | 0.833 | 0.118 |
| | MALE | 50 | 2.18 | 0.774 | 0.110 |
| BDI 18 | FEMALE | 50 | 1.66 | 0.939 | 0.133 |
| | MALE | 50 | 1.52 | 1.054 | 0.149 |
| BDI 19 | FEMALE | 50 | 0.96 | 0.989 | 0.140 |
| | MALE | 50 | 0.66 | 0.772 | 0.109 |
| BDI 20 | FEMALE | 50 | 0.88 | 1.100 | 0.156 |
| | MALE | 50 | 0.58 | 0.835 | 0.118 |
| BDI 21 | FEMALE | 50 | 1.24 | 1.135 | 0.161 |
| | MALE | 50 | 1.40 | 1.278 | 0.181 |

tree diagram called a dendrogram. They begin with each object in a separate cluster. At each step, the two clusters that are most similar are joined into a single new cluster. A dendrogram is a diagram that shows the hierarchical relationship between objects. It is most commonly created as an output from hierarchical clustering. The horizontal axis of the dendrogram (Fig. 3-8) represents the distance or dissimilarity between clusters. The vertical axis represents the objects and clusters. Each joining (fusion) of two clusters is represented on the graph by the splitting of a horizontal line into two horizontal lines. The horizontal position of the split, shown by the short vertical bar, gives the distance (dissimilarity) between the two clusters. In the dendrogram (Fig. 3) overall clustering of all BDI items in both Genderes showed definite clustering of BDI-18, BDI-19, BDI-20, BDI-21, BDI-15, BDI-17, BDI-16 items and BDI-14 and BDI-4 were outliers. In the dendrogram (Fig. 4) overall clustering of all BDI items in females showed definite clustering of BDI-20, BDI-21, BDI-15, BDI-16, BDI-13, BDI-17 and BDI-4 items.

On the other hand in the dendrogram (Figure 5) overall clustering of all BDI items in males showed definite clustering of BDI-5, BDI-2, BDI-3, BDI-1, BDI-13 BDI-21 and BDI-6. So, from the above discussion it was

Table 6. Hypothesis testing of all BDI items

Hypothesis Test Summary

| Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|
| The medians of BDI 1 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.126 | Retain the null hypothesis |
| The medians of BDI 2 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.186 | Retain the null hypothesis |
| The medians of BDI 3 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.815 | Retain the null hypothesis |
| The medians of BDI 4 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.050 | Reject the null hypothesis |
| The medians of BDI 5 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.815 | Retain the null hypothesis |
| The medians of BDI 6 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.841 | Retain the null hypothesis |
| The medians of BDI 7 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.610 | Retain the null hypothesis |
| The medians of BDI 8 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.072 | Retain the null hypothesis |
| The medians of BDI 9 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 1.000 | Retain the null hypothesis |
| The medians of BDI 10 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.820 | Retain the null hypothesis |
| The medians of BDI 11 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.378 | Retain the null hypothesis |
| The medians of BDI 12 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.546 | Retain the null hypothesis |
| The medians of BDI 13 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.412 | Retain the null hypothesis |
| The medians of BDI 14 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.000 | Reject the null hypothesis |
| The medians of BDI 15 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 1.000 | Retain the null hypothesis |
| The medians of BDI 16 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.838 | Retain the null hypothesis |
| The medians of BDI 17 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.540 | Retain the null hypothesis |
| The medians of BDI 18 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.547 | Retain the null hypothesis |
| The medians of BDI 19 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.173 | Retain the null hypothesis |
| The medians of BDI 20 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.547 | Retain the null hypothesis |
| The medians of BDI 21 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.412 | Retain the null hypothesis |

Asymptotic Significances are displayed. The Significance level is .05.

Table 7: Correlation of SDQ items with both Gender.

| | GENDER | N | Mean | Std. Deviation | Std Error Mean |
|---|---|---|---|---|---|
| SDQ 1 | FEMALE | 50 | 5.06 | 0.586 | 0.083 |
| | MALE | 50 | 5.08 | 0.634 | 0.090 |
| SDQ 2 | FEMALE | 50 | 4.36 | 0.964 | 0.136 |
| | MALE | 50 | 4.68 | 0.844 | 0.119 |
| SDQ 3 | FEMALE | 50 | 4.52 | 0.789 | 0.112 |
| | MALE | 50 | 4.90 | 0.763 | 0.108 |
| SDQ 4 | FEMALE | 50 | 4.60 | 0.990 | 0.140 |
| | MALE | 50 | 4.50 | 0.863 | 0.122 |
| SDQ 5 | FEMALE | 50 | 3.92 | 0.853 | 0.121 |
| | MALE | 50 | 4.04 | 0.807 | 0.114 |
| SDQ 6 | FEMALE | 50 | 3.34 | 0.848 | 0.120 |
| | MALE | 50 | 3.60 | 0.904 | 0.128 |
| SDQ 7 | FEMALE | 50 | 4.64 | 0.776 | 0.110 |
| | MALE | 50 | 4.88 | 0.521 | 0.074 |
| SDQ 8 | FEMALE | 50 | 3.84 | 1.095 | 0.155 |
| | MALE | 50 | 4.24 | 0.797 | 0.113 |
| SDQ 9 | FEMALE | 50 | 3.98 | 1.000 | 0.141 |
| | MALE | 50 | 4.24 | 0.847 | 0.120 |
| SDQ 10 | FEMALE | 50 | 3.78 | 1.016 | 0.144 |
| | MALE | 50 | 4.04 | 1.029 | 0.146 |
| SDQ 11 | FEMALE | 50 | 2.84 | 1.113 | 0.157 |
| | MALE | 50 | 3.16 | 1.113 | 0.157 |
| SDQ 12 | FEMALE | 50 | 2.28 | 1.107 | 0.157 |
| | MALE | 50 | 2.62 | 1.159 | 0.164 |
| SDQ 13 | FEMALE | 50 | 4.66 | 0.798 | 0.113 |
| | MALE | 50 | 4.66 | 0.895 | 0.127 |
| SDQ 14 | FEMALE | 50 | 4.30 | 0.863 | 0.122 |
| | MALE | 50 | 4.40 | 0.833 | 0.118 |
| SDQ 15 | FEMALE | 50 | 4.58 | 0.906 | 0.128 |
| | MALE | 50 | 4.82 | 0.691 | 0.098 |
| SDQ 16 | FEMALE | 50 | 3.20 | 0.948 | 0.134 |
| | MALE | 50 | 3.32 | 0.768 | 0.109 |
| SDQ 17 | FEMALE | 50 | 2.28 | 0.701 | 0.099 |
| | MALE | 50 | 2.44 | 0.644 | 0.091 |
| SDQ 18 | FEMALE | 50 | 1.80 | 0.404 | 0.057 |
| | MALE | 50 | 1.82 | 0.438 | 0.062 |
| SDQ 19 | FEMALE | 50 | 1.94 | 0.652 | 0.092 |
| | MALE | 50 | 1.84 | 0.618 | 0.087 |
| SDQ 20 | FEMALE | 50 | 4.26 | 0.723 | 0.102 |
| | MALE | 50 | 4.48 | 0.886 | 0.125 |
| SDQ 21 | FEMALE | 50 | 3.14 | 1.010 | 0.143 |
| | MALE | 50 | 2.70 | 0.814 | 0.115 |
| SDQ 22 | FEMALE | 50 | 3.44 | 0.907 | 0.128 |
| | MALE | 50 | 3.64 | 0.898 | 0.127 |
| SDQ 23 | FEMALE | 50 | 3.72 | 0.927 | 0.131 |
| | MALE | 50 | 3.78 | 0.840 | 0.119 |
| SDQ 24 | FEMALE | 50 | 4.64 | 0.942 | 0.133 |
| | MALE | 50 | 4.82 | 0.691 | 0.098 |
| SDQ 25 | FEMALE | 50 | 3.96 | 0.669 | 0.095 |
| | MALE | 50 | 3.88 | 0.746 | 0.106 |
| SDQ 26 | FEMALE | 50 | 4.94 | 0.818 | 0.116 |
| | MALE | 50 | 5.00 | 0.606 | 0.086 |
| SDQ 27 | FEMALE | 50 | 4.02 | 0.654 | 0.093 |
| | MALE | 50 | 3.54 | 0.706 | 0.100 |
| SDQ 28 | FEMALE | 50 | 3.92 | 1.027 | 0.145 |
| | MALE | 50 | 3.62 | 1.008 | 0.143 |
| SDQ 29 | FEMALE | 50 | 3.42 | 1.326 | 0.188 |
| | MALE | 50 | 3.14 | 1.195 | 0.169 |
| SDQ 30 | FEMALE | 50 | 1.88 | 0.961 | 0.136 |
| | MALE | 50 | 1.80 | 0.404 | 0.057 |
| SDQ 31 | FEMALE | 50 | 1.92 | 1.007 | 0.142 |
| | MALE | 50 | 1.84 | 0.510 | 0.072 |
| SDQ 32 | FEMALE | 50 | 3.60 | 0.728 | 0.103 |
| | MALE | 50 | 3.32 | 0.551 | 0.078 |
| SDQ 33 | FEMALE | 50 | 3.84 | 0.889 | 0.126 |
| | MALE | 50 | 3.36 | 0.921 | 0.130 |
| SDQ 34 | FEMALE | 50 | 3.02 | 0.892 | 0.126 |
| | MALE | 50 | 2.50 | 0.763 | 0.108 |
| SDQ 35 | FEMALE | 50 | 3.62 | 0.753 | 0.106 |
| | MALE | 50 | 3.70 | 0.544 | 0.077 |
| SDQ 36 | FEMALE | 50 | 3.58 | 0.950 | 0.134 |
| | MALE | 50 | 3.72 | 1.089 | 0.154 |
| SDQ 37 | FEMALE | 50 | 2.98 | 0.845 | 0.119 |
| | MALE | 50 | 3.04 | 0.903 | 0.128 |
| SDQ 38 | FEMALE | 50 | 3.28 | 0.730 | 0.103 |
| | MALE | 50 | 3.06 | 0.767 | 0.108 |
| SDQ 39 | FEMALE | 50 | 4.04 | 0.856 | 0.121 |
| | MALE | 50 | 4.20 | 0.728 | 0.103 |
| SDQ 40 | FEMALE | 50 | 4.06 | 1.531 | 0.216 |
| | MALE | 50 | 4.06 | 1.646 | 0.233 |
| SDQ 41 | FEMALE | 50 | 3.96 | 0.755 | 0.107 |
| | MALE | 50 | 4.16 | 0.710 | 0.100 |
| SDQ 42 | FEMALE | 50 | 4.04 | 1.106 | 0.156 |
| | MALE | 50 | 4.22 | 0.887 | 0.125 |
| SDQ 43 | FEMALE | 50 | 3.36 | 0.898 | 0.127 |
| | MALE | 50 | 3.92 | 0.778 | 0.110 |
| SDQ 44 | FEMALE | 50 | 3.78 | 1.112 | 0.157 |
| | MALE | 50 | 4.16 | 0.817 | 0.116 |

Table 8: Hypothesis testing of all SDQ items

Hypothesis Test Summary

| Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|
| The medians of SDQ 1 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 1.000 | Retain the null hypothesis |
| The medians of SDQ 2 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.045 | Reject the null hypothesis |
| The medians of SDQ 3 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.031 | Reject the null hypothesis |
| The medians of SDQ 4 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.356 | Retain the null hypothesis |
| The medians of SDQ 5 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.820 | Retain the null hypothesis |
| The medians of SDQ 6 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.433 | Retain the null hypothesis |
| The medians of SDQ 7 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.485 | Retain the null hypothesis |
| The medians of SDQ 8 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.527 | Retain the null hypothesis |
| The medians of SDQ 9 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.395 | Retain the null hypothesis |
| The medians of SDQ 10 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.623 | Retain the null hypothesis |
| The medians of SDQ 11 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.127 | Retain the null hypothesis |
| The medians of SDQ 12 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.494 | Retain the null hypothesis |
| The medians of SDQ 13 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 1.000 | Retain the null hypothesis |
| The medians of SDQ 14 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.547 | Retain the null hypothesis |
| The medians of SDQ 15 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.739 | Retain the null hypothesis |
| The medians of SDQ 16 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.407 | Retain the null hypothesis |
| The medians of SDQ 17 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.222 | Retain the null hypothesis |
| The medians of SDQ 18 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 1.000 | Retain the null hypothesis |
| The medians of SDQ 19 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.575 | Retain the null hypothesis |
| The medians of SDQ 20 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.026 | Reject the null hypothesis |
| The medians of SDQ 21 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.072 | Retain the null hypothesis |
| The medians of SDQ 22 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.548 | Retain the null hypothesis |
| The medians of SDQ 23 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.803 | Retain the null hypothesis |
| The medians of SDQ 24 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.552 | Retain the null hypothesis |
| The medians of SDQ 25 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.795 | Retain the null hypothesis |
| The medians of SDQ 26 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.469 | Retain the null hypothesis |
| The medians of SDQ 27 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.011 | Reject the null hypothesis |
| The medians of SDQ 28 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.803 | Retain the null hypothesis |
| The medians of SDQ 29 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.109 | Retain the null hypothesis |
| The medians of SDQ 30 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.475 | Retain the null hypothesis |
| The medians of SDQ 31 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.207 | Retain the null hypothesis |
| The medians of SDQ 32 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.016 | Reject the null hypothesis |
| The medians of SDQ 33 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.287 | Retain the null hypothesis |
| The medians of SDQ 34 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.016 | Reject the null hypothesis |
| The medians of SDQ 35 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.433 | Retain the null hypothesis |
| The medians of SDQ 36 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.317 | Retain the null hypothesis |
| The medians of SDQ 37 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.815 | Retain the null hypothesis |
| The medians of SDQ 38 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.827 | Retain the null hypothesis |
| The medians of SDQ 39 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 1.000 | Retain the null hypothesis |
| The medians of SDQ 40 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.839 | Retain the null hypothesis |
| The medians of SDQ 41 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.111 | Retain the null hypothesis |
| The medians of SDQ 42 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.688 | Retain the null hypothesis |
| The medians of SDQ 43 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.413 | Retain the null hypothesis |
| The medians of SDQ 44 are the same across categories of gender (FEMALE=1, MALE=2) | Independent-Samples Median Test | 0.482 | Retain the null hypothesis |

Asymptotic Significances are displayed. The Significance level is .05

clear that females while presenting depressive symptoms most often focused on some closely related symptoms together which were physical problems (BDI-20), interest in sex (BDI-21), working ability (BDI-15), sleep disorder (BDI-16), decision making capacity (BDI- 13), easy fatigability (BDI-17) and satisfaction level (BDI-4). On the other hand it was clear that males while presenting depressive symptoms most often focused on some closely related symptoms together which were guilt feeling (BDI-5), hopelessness (BDI-2), worthlessness (BDI-3), sad feeling (BDI-1), decision making capacity (BDI-13), interest in Gender (BDI-21) and punishment feeling (BDI-6).

**Clustering of sdq items in respect of gender:** In the dendrogram (Fig. 6) overall clustering of all SDQ items in both Genderes showed definite clustering of SDQ-40, SDQ-41, SDQ-24, SDQ-26, SDQ-20, SDQ-42 and SDQ-39 items. In the dendrogram (Fig. 7) overall clustering of all SDQ items in females showed definite clustering of SDQ-21, SDQ-22, SDQ-35, SDQ-33, SDQ-34 and SDQ-32 items. In the dendrogram (Fig. 8) overall clustering of all SDQ items in males showed definite clustering of SDQ-39, SDQ-42, SDQ-20, SDQ-24, SDQ-26, SDQ- 13 and SDQ-6 items.

So, from the above discussion it was clear that females while presenting depressive symptoms most often focused on some closely related symptoms together, which were feeling heaviness (SDQ-21), slowing down (SDQ-22), sustain attention (SDQ-35), pain sensation (SDQ-33), gastrointestinal symptoms (SDQ-34) and palpitations (SDQ-32). On the other hand it was clear that males while presenting depressive symptoms most often focused on some closely related symptoms together which were decision making capacity (SDQ-39), household activity (SDQ-42), energy level (SDQ-20), irritability (SDQ-24), anxiety (SDQ-26), sleep disorder (SDQ-13) and reactivity to negative things (SDQ-6).

## CONCLUSION

The research concludes with the result that mean age of onset of depression and its prevalence was higher in females who are residing in rural areas,

whereas male preponderance was seen in urban areas. The study demonstrated that there were gender specific differences relating to the presenting symptoms of depression among the adult patients, for instance both genders expressed different opinion regarding satisfaction level, bodily appearance, mood, affect, energy level, panic attacks, palpitation and gastrointestinal symptoms.

The study also revealed that depressed female patients were more concerned about physical (bodily) appearance, self-criticism and panic attacks, whereas depressed male patients mainly reported guilty feeling and lack of interest. The research established that there were unique symptom clusters that were specific for a particular gender. Females while presenting depressive symptoms most often focused on some closely related group of symptoms which were physical problems, interest in sex, working ability, sleep disorder, decision making capacity, easy fatigability, satisfaction level, feeling of heaviness, slowing down, sustaining attention, pain sensation, gastrointestinal symptoms and palpitations. This represented female type of depression.

Males while presenting depressive symptoms most often focused on some closely related symptom cluster which were guilt feeling, hopelessness, worthlessness, sad feeling and decision making capacity, interest in sex, feeling of being punished, household activity, energy level, irritability, anxiety, sleep disorder and reactivity to negative things.

**Clinical relevance:** There is a concern about the tendency of many patients who are actually suffering from depression not attending psychiatry department with their complaint rather they seek help from departments of other medical disciplines stating different symptoms other than mood symptoms. This study result will help not only psychiatrists but also the doctors of other disciplines to understand the different presenting symptoms of depression across genders and thus help to provide proper guidance to the patients. This in effect will reduce disease related and financial burden of the population.

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