

Original Article

Prevalence of Anxiety and Depression in Patients of Functional Dyspepsia and their Association with Demographic Features

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Abstract

Objectives: To determine the prevalence of anxiety and depression in patients of functional dyspepsia presenting to Jinnah Hospital, Lahore. In addition to that we will find the association of functional dyspepsia with demographic features in our studied population.

Methods: This descriptive cross-sectional study was carried out at department of Medicine, Jinnah Hospital Lahore from 18-11-2017 to 17-05-2018. Demographic information and duration of disease etc. was obtained. Hospital Anxiety and Depression Scale (HADS) score was calculated for each patient. Single-blind was applied to reduce bias. Data was entered in SPSS version 20. Effect modifiers and confounders were controlled through stratification. Chi Square test was applied by taking $p \leq 0.05$.

Results: Among total of 260 patients, male were 53.8% (n=140). The minimum age was 30 years and maximum age was 80 years with mean and standard deviation of 54.50 ± 15.19 years. The minimum duration was 3 months and maximum were 24 months with mean and standard deviation of 12.92 ± 6.15 months. 30.8% (n=80) patients belong to lower class, 35% (n=91) patients belong to middle class and 34.2% (n=89) patients belong to high class. There were 87/260 (33.5%) illiterate patients, 93/260 (35.8%) patients having matric while 80/260 (30.8%) patients were graduate. Anxiety was present in 134/260 (51.5%) patients while depression in 125/260 (48.1%) patients. Presence of anxiety had no significant association with demographic features with p-values of each as >0.05 .

Conclusion: Anxiety and depression were prevalent among patients suffering functional dyspepsia. Age, gender, socioeconomic status, educational status, and duration of functional dyspepsia has no association with the occurrence of anxiety and depression in in the studied population.

Key words: Anxiety, Depression, Hospital Anxiety and Depression Scale, Functional Dyspepsia.

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Introduction

Dyspepsia¹ is a usual symptom with a vast differential diagnosis and a diverse pathophysiology. On an average, 25% of the population suffer every year,² however majority people do not seek medical attention.³ About twenty five percent of dyspepsia sufferers have an organic etiology at base.⁴ However, up to 75% have

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functional dyspepsia who have no underlying secondary cause on diagnostic assessment. Functional dyspepsia⁵ is one of the most prevailing gastrointestinal ailments with prevalence up to 40%^{6,7} and annual incidence of 1% to 6%.⁸ The most classic dyspeptic complaints comprise early satiation, postprandial fullness, epigastric pain, and bloating in upper abdo-

men, often associated with some more issues like nausea, epigastric burning or belching.⁹ Psychological distractions such as anxiety, and depression along with lifestyle characteristics have been seen to be accomplished with the emergence of this mysterious disease.¹⁰⁻¹² Rome III criteria^{13,14} defines the functional dyspepsia as the presence of one or more of these clinical features: early satiation, postprandial fullness, epigastric burning or pain, and no evidence of anatomical disease to describe the symptoms. These criteria should be present since last 3 months with complaints starting at least 6 months before diagnosis. A diagnosis of functional dyspepsia can only be fixed by the exclusion of other etiofactors of dyspepsia.¹⁵ A history, physical evaluation, and laboratory testing are the first steps in the assessment of a patient with new onset of dyspepsia.¹⁶ Functional dyspepsia is prevalent in our society; however, research protocols are scarce on our people. Therefore, the focus of the present study was to determine the prevalence of anxiety and depression in patients of functional dyspepsia presenting to Jinnah Hospital, Lahore. In addition to that we will find the association of functional dyspepsia with demographic features in our studied population.

Methods

This descriptive cross-sectional study¹⁷ was carried out at department of Medicine, Jinnah Hospital Lahore (JHL) from 18-11-2017 to 17-05-2018. Keeping margin of error of 6% and confidence interval of 95%, a sample size of 260 patients was required taking expected population of functional dyspepsia with depression as 42.3%.¹⁸ Data was collected after approval from Medical Ethics Committee of Allama Iqbal Medical College, JHL. Non-probability consecutive sampling technique was used. After taking the informed consent, patients of functional dyspepsia as per operational definition having age range between 30 to 80 years. Patients with organic lesions in the stomach and duodenum revealed by endoscopic examinations, patients with history of any abdominal/gastrointestinal surgery, history of smoking or alcoholism, patients with alarming symptoms (weight loss, dysphagia, or maelena), pregnant or breastfeeding women and patients ongoing psychological treatment were excluded from this study. Rome III Criteria^{13,14} was used to define functional dyspepsia.^{13,14} Anxiety¹⁹ was defined as a score greater than 7 according to Hospital Anxiety and Depression Scale. Depression¹⁹ was defined as a score greater than 7 according to Hospital Anxiety and Depression Scale. Demographic information e.g. age, sex, address, educational status, socioeconomic status, duration of disease etc. was obtained. Hospital Anxiety and Depression Scale (HADS) score was calculated for

each patient. Single-blind was utilized to minimize the bias. The outcomes were recorded in predesigned questionnaire. Data was entered in SPSS version 20. Mean and standard deviation was calculated for quantitative variables (age of patients, and duration of disease were the continuous variables, for which means, and standard deviations were computed, whereas sex of patients, socioeconomic status, educational status, presence of anxiety and presence of depression were noted. Frequencies and percentages were determined for those. Effect modifiers and confounders (age, sex, duration of disease, socioeconomic and educational status) were controlled through stratification. Chi Square test was applied by taking $p \leq 0.05$.

Results

A total of 260 patients were included in this study having minimum age of 30 years and maximum age was 80 years with mean age of 54.50 ± 15.19 years. The minimum duration was 3 months and maximum were 24 months with mean of 12.92 ± 6.15 months (Table 1). Male patients were predominant (53.8%) while female patients were 120/260 (46.2%). Socioeconomic status revealed that 80/260 (30.8%) patients belong to lower class, 91/260 (35%) patients belong to middle class and 89/260 (34.2%) patients belong to high class.

Table 1: Descriptive Statistics of the Patients who Presented with Functional Dyspepsia (n = 260)

	Min.	Max.	Mean	Std. Deviation
Age (years)	30	80	54.50	15.19
Duration (months)	3	24	12.92	6.15

There were 87/260 (33.5%) illiterate patients, 93/260 (35.8%) patients having matric while 80/260 (30.8%) patients were graduate or above. Anxiety was present in 134/260 (51.5%) patients while it was absent in 126/260 (48.5%) patients. Depression was present in 125/260 (48.1%) patients while it was absent in 135/260 (51.9%) patients (Table 2). By using chi-square test it was notified that there was insignificant difference among age group and presence of anxiety having p-value = 0.707. Similarly, age group and presence of depression also have insignificant difference (p-value = 0.808). Similarly an insignificant difference was shown for association of gender with presence of anxiety (p-value 0.479) and depression (p-value 0.939). There was insignificant association between using socioeconomic status and presence of anxiety having (p-value = 0.835) and depression (p-value = 0.876). There was no significant statistical relationship between educational status with presence of anxiety (p-value = 0.204) and depression (p-value

= 0.230). The duration of ailment had no statistically valuable connection with the presence of anxiety (p-value = 0.092) as well as the presence of depression (p-value = 0.143) (Table 3&4).

Table 2: Frequency Distribution of Various Qualitative Variables of Functional Dyspepsia Patients (n=260)

Qualitative variables	Frequency	Percent
1. Gender		
Male	140	53.8
Female	120	46.2
2. Socioeconomic status		
Lower class	80	30.8
Middle class	91	35
High Class	89	34.2
3. Educational status		
Illiterate	87	33.5
Matric	93	35.8
Graduate	80	30.8
4. Presence of anxiety		
Present	134	51.5
Absent	126	48.5
5. Presence of depression		
Present	125	48.1
Absent	135	51.9

Table 3: Association of different Demographic Parameters with Anxiety among Functional Dyspepsia Patients (n = 260) *

Factors	Anxiety		Total N=260	p-value
	Present (n=134)	Absent (n=126)		
Gender:				
Male	75(55.9%)	65(51.6%)	140(53.8%)	0.479
Female	59(44.1%)	61(48.4%)	120(46.2%)	
Age				
< 55 years	68(50.7%)	61(48.4%)	129(49.6%)	0.707
≥ 55 years	66(49.3%)	65(51.6%)	131(50.4%)	
Socioeconomic status:				
Lower class	39(29.1%)	41(32.6%)	80(30.8%)	0.835
Middle class	48(35.8%)	43(34.1%)	91(35.0%)	
High class	47(35.1%)	42(33.3%)	89(34.2%)	
Educational status:				
Illiterate	45(33.6%)	42(33.3%)	87(33.5%)	0.204
Matric	42(31.3%)	51(40.5%)	93(35.7%)	
Graduate	47(35.1%)	33(26.2%)	80(30.8%)	
Duration of Illness:				
<12 months	51(38.1%)	61(48.4%)	112(43.1%)	0.092
≥12 months	83(61.9%)	65(51.6%)	148(56.9%)	

*Chi-square test was utilized

Anxiety and depression were prevalent among patients suffering functional dyspepsia. Age, gender, socioeconomic status, educational status, and duration of

functional dyspepsia has no association with the occurrence of anxiety and depression in the studied population.

Table 4: Association of different Demographic Parameters with Depression among Functional Dyspepsia Patients (n = 260) *

Factors	Depression		Total N=260	p-value
	Present (n=125)	Absent (n=135)		
Gender:				
Male	67(53.6%)	73(54.1%)	140(53.8%)	0.939
Female	58(46.4%)	62(45.9%)	120(46.2%)	
Age				
<55 years	63(50.4%)	66(48.8%)	129(49.6%)	0.808
≥55 years	62(49.6%)	69(51.2%)	131(50.4%)	
Socioeconomic status:				
Lower class	40(32.0%)	40(29.6%)	80(30.8%)	0.876
Middle class	44(35.2%)	47(34.8%)	91(35.0%)	
High class	41(32.8%)	48(35.6%)	89(34.2%)	
Educational status:				
Illiterate	42(33.6%)	45(33.4%)	87(33.5%)	0.230
Matric	39(31.2%)	54(40.0%)	93(35.7%)	
Graduate	44(35.2%)	36(26.6%)	80(30.8%)	
Duration of Illness:				
<12 months	48(38.4%)	64(47.4%)	112(43.1%)	0.143
≥12 months	77(61.6%)	71(52.6%)	148(56.9%)	

*Chi-square test was utilized

Discussion

The objective of the present research was to determine prevalence of anxiety and depression in patients of functional dyspepsia presenting to Jinnah Hospital, Lahore. In this regard the present descriptive cross-sectional study was carried out at the department of Medicine, Jinnah Hospital Lahore. So, two hundred and sixty patients of functional dyspepsia were included by fulfilling the inclusion and exclusion criteria by using nonprobability consecutive sampling. From 260 patients, it was observed that the minimum age was found 30 years and maximum age was 80 years with mean and standard deviation of the age was 54.50 ± 15.19 years. The minimum duration was 3 months and maximum was 24 months with mean and standard deviation 12.92±6.15 months. Male patients were 53.8% while female patients were 46.2%. 30.8% patients belong to lower class, 35% patients belong to middle class and 34.2% patients belong to high class. There were 33.5% illiterate patients, 35.8% patients having matric, while 30.8% patients were graduate. Anxiety was present in 51.5% patients while it was absent in 48.5% patients. Depression was present in 48.1% patients while it was absent in 51.9% patients. In a vast research work,¹⁸ similar results to our work were found. 50.4% functional dyspeptic candidates had anxiety, whereas depression was detected in

42.3% patients. At the same time, healthy control members were found to be having depression and anxiety about 6.67% and 13.34% respectively. In another large study comprising 465 patients who filled questionnaire, 204 cases underwent upper gastrointestinal endoscopy. The prevalence rate of the age-adjusted dyspepsia was 31.9%, and it would reduce to 15.7% if concomitant acid regurgitation or heart burn are excluded. The dyspeptic patients had significantly higher chance for the presence of smoking habit, usage of NSAIDs, history to ingest antacids for symptom relief, and past history to a physician for the disease ($p < 0.05$) than cases without dyspepsia.²⁰ Majority of the patients who underwent endoscopic examination were found to be suffering functional dyspepsia (64.5%). The age accustomed prevalence of functional dyspepsia was 29.2% (95% CI: 21.8-36.4). In multiple regression series on dyspepsia patients, functional dyspepsia was found to be associated with older age. Other than old age, no predictor was significantly linked with functional dyspepsia.²¹ In our study, the results were in concordance to available literature, where there was no significant linkage between age group and presence of anxiety having p -value = 0.707. Similarly, age group and presence of depression have no statistically important link (p -value=0.808). Significant association was not found between gender and presence of anxiety with p -value 0.479. In the same way, gender had no significant relation with the presence of depression (p -value 0.939). In a Korean study by Sung Eun Kim et al.²³ 53.5% (917 out of 1714) of dyspeptic patients were female. The prevalence of functional dyspepsia was 10.3%. However, our study majority dyspeptic patients were male (53.9%). In another large study comprising 839 cases,²² mean age was 49.5 + 15.7 years. Majority were female (55.7%). Anxiety was 28.5% prevalent among patients with functional dyspepsia. Ommara Jamil and colleagues²⁴ studied depression associated with functional dyspepsia. All hundred patients had depression except one. In our research work, there was no significant association between using socioeconomic status and presence of anxiety having p -value = 0.835. There was no significant association between using socioeconomic status and presence of depression having p -value=0.876. There was no significant statistical relationship between educational status and presence of anxiety, having p -value=0.204. Similarly, no significant statistical link was found between educational status and presence of depression (p -value = 0.230). The duration of ailment had no statistically valuable connection with the presence of anxiety (p -value = 0.092) as well as the presence of depression (p -value = 0.143). So, in short explanation, our study showed that depression and anxiety are widely

present in conjunction with functional dyspepsia as well as the demographic characteristics of the patients have no effect on the presence of the depression and anxiety in functional dyspeptic patients in our society.

Conclusion

Anxiety and depression were prevalent among patients suffering functional dyspepsia. Age, gender, socioeconomic status, educational status, and duration of functional dyspepsia has no association with the occurrence of anxiety and depression in in the studied population.

Conflict of Interest

None

Funding Source

None

References

1. Paul M, Brian L, Christopher A, Robert E, Colin E, Nimish V et al. ACG and CAG Clinical Guideline: Management of Dyspepsia. *American J Gastroenterol.* 2017; 112 (7): 988-1013.
2. Lee SW, Lien HC, Lee TY, Yang SS, Yeh HZ, and Chang CCS. Etiologies of Dyspepsia among a Chinese Population: One Hospital-Based Study. *Open J Gastroenterol.* 2014; 4(4): 249-54.
3. Harmon RC, Peura DA. Evaluation and management of dyspepsia. *Therap Adv Gastroenterol.* 2010; 3(2): 87-98.
4. Oustamanolakis P and Track J. Dyspepsia Organic Versus Functional. *J clinic gastroenterol.* 2012; 46(3): 175-90.
5. Madisch A, Andresen V, Enck P, Labenz J, Frieling T, Schemann M. The Diagnosis and Treatment of Functional Dyspepsia. *Dtsch Arztebl Int.* 2018; 115(13): 222-32.
6. Yazdanpanah K, Nasrin Moghimi N, Yousefinejad V, Ghaderi E, Azizi A, and Nazem SF. Dyspepsia prevalence in general population aged over 20 in the west part of Iran. *J Pak Med Assoc.* 2012; 62 (7): 672-76.
7. Eusebi LH, Ratnakumaran R, Bazzoli F, and Alexander C. Ford AC. Prevalence of Dyspepsia in Individuals with Gastroesophageal Reflux-Type Symptoms in the Community: A Systematic Review and Meta-analysis. *Clin Gastroenterol Hepatol.* 2018; 16(1):39-48.
8. Ghoshal UC, Singh R, Chang FY, Hou X, Wong BC, Kachintorn U. Epidemiology of uninvestigated and functional dyspepsia in Asia: facts and fiction. *J Neurogastroenterol Motil.* 2011;17(3):235-44.
9. Kimberly N, Harer KN, Hasler WL. Functional Dyspepsia: A Review of the Symptoms, Evaluation, and Treatment Options. *Gastroenterol Hepatol.* 2020; 16 (2): 66-72.
10. Alam L, Naqvi M, Saeed F. Relation of Functional Dyspepsia with Anxiety and Depression and its impact on the quality of life of patients. *Pak Armed Forces Med J* 2019; 69(2): 230-35.

11. Tshabalala SJ, Tomita A, Ramlall S. Depression, anxiety and stress symptoms in patients presenting with dyspepsia at a regional hospital in KwaZulu-Natal province. *S Afr J Psychiatr.* 2019; doi: 10. 4102/sajpsychiatry.v25i0.1382.
12. Adibi P, Keshteli AH, Daghighzadeh H, Roohafza H, Pournaghshband N, Afshar H. Association of anxiety, depression, and psychological distress in people with and without functional dyspepsia. *Adv Biomed Res.* 2016; doi:10.4103/2277-9175.190936.
13. Biswas K, Hazra R, Chakraborty S, Bose R, and Garain S. Diagnosis of Functional Dyspepsia on the basis of Rome III clinical diagnostic criteria in a tertiary care hospital: A cross-sectional observational study. *Asian J Med Sci.* 2018; 9(1): 55-60.
14. Ford AC, Bercik P, Morgan DG, Bolino C, Pintos-Sanchez MI, and Moayyedi P. The Rome III Criteria for the Diagnosis of Functional Dyspepsia in Secondary Care Are Not Superior to Previous Definitions. *Gastroenterol.* 2014; 146(4):14-15.
15. Talley NJ. Functional Dyspepsia: Advances in Diagnosis and Therapy. *Gut and Liver.* 2017;11(3):349-57.
16. Bazaldua OV and Schneider D. Evaluation and Management of Dyspepsia. *Am Fam Physician.* 1999; 60(6):1773-84.
17. Setia MS. Methodology Series Module 3: Cross-sectional Studies. *Indian J Dermatol.* 2016;61(3):261-4.
18. Kugler TE. Anxiety And Depressive Disorders In Functional Dyspepsia: Cause Or Consequence? *Eksp Klin Gastroenterol.* 2015;(9):29-35
19. Djukanovic I, Carlsson J, Årestedt K. Is the Hospital Anxiety and Depression Scale (HADS) a valid measure in a general population 65-80 years old? A psycho-metric evaluation study. *Health Qual Life Outcomes.* 2017;15(1):193.
20. Talley NJ, Zinsmeister AR, Schleck CD, Melton LJ 3rd. Smoking, alcohol, and analgesics in dyspepsia and among dyspepsia subgroups: lack of an association in a community. *Gut.* 1994;35(5):619-24.
21. Shaib Y., El-Serag HB. The prevalence and risk factors of functional dyspepsia in a multiethnic population in the United States. *Am J Gastroenterol.* 2004; 99(11):2210-16.
22. Mahadeva S., Goh KL. Anxiety, depression and quality of life differences between functional and organic dyspepsia. *J Gastroenterol and Hepatol.* 2011; 26(3):49-52.
23. Kim SE, Kim N, Lee JY, et al. Prevalence and Risk Factors of Functional Dyspepsia in Health Check-up Population: A Nationwide Multicenter Prospective Study. *J Neurogastroenterol Motil.* 2018;24(4):603-13.
24. Jamil O, Sarwar S, Hussain Z, Fiaz RO, and Chaudary RD. Association Between Functional Dyspepsia and Severity of Depression. *J Coll Physicians Surg Pak.* 2016; 26(6):513-6.