DOI: https://doi.org/10.54393/pbmj.v5i6.521

PAKISTAN BIOMEDICAL JOURNAL

https://www.pakistanbmj.com/journal/index.php/pbmj/index

Volume 5, Issue 6 (June 2022)

Original Article

Frequency of Depression Among Chronic Hepatitis C Patients Visiting Haji Abdul Qayyum Hospital Sahiwal

Hira Iftikhar[1], Zahra Iftikhar[2], Noman Qutab[3], Rana Aamir Diwan[1], Tayyaba Ayub[4*], Tallat Anwar Faridi[4]

[1]Department of Community Medicine, Sahiwal Medical College, Sahiwal, Pakistan
[2]Brentwood Resource Centre, Brentwood, England
[3]Basic Health Unit (BHU), Dadra Bala, Punjab, Pakistan
[4]University Institute of Public Health,The University of Lahore, Lahore, Pakistan

ARTICLE INFO

Key Words:
Cirrhosis, Hepatitis C, Depression

How to Cite:
Iftikhar, H. ., Iftikhar, Z., Qutab, N. ., Aamir Diwan, R. ., Ayub, T. ., & Anwar Faridi, T. . (2022). Frequency of Depression Among Chronic Hepatitis C Patients Visiting Haji Abdul Qayyum Hospital Sahiwal: Frequency of Depression Among Chronic Hepatitis C Patients. Pakistan BioMedical Journal, 5(6). https://doi.org/10.54393/pbmj.v5i6.521

***Corresponding Author:**
Tayyaba Ayub
University Institute of Public Health, The University of Lahore, Lahore, Pakistan
tayyabaayub123@gmail.com

Received Date: 4th Jun, 2022
Acceptance Date: 20th June, 2022
Published Date: 30th June, 2022

ABSTRACT

Hepatitis C is prominently a hepatic disease whose infection ranges in severity from a mild illness to serious lifelong complications. Multiple organ systems in the body may get affected. Depression is an important complication in almost 70% of HCV patients. **Objectives:** To find out the frequency of depression in chronic hepatitis C infected population of District Sahiwal. **Methods:** Descriptive cross-sectional study was performed at Gastroenterology Clinic, Haji Abdul Qayyum Hospital, Sahiwal during nine months from September 2020 to June 2021.Total 350 patients were selected by non - probability purposive sampling on the basis of preset inclusion and exclusion criteria. Beck's Depression Inventory Scale was utilized to assess the patients for depression and correlate it with level of education and occupation. **Results:** Out of 350 patients of CHC, 56.6% were male and 43.4% were female. 4.3% patients were suffering from borderline depression; 42.3% were suffering from moderate depression; 46.3% were suffering from severe depression and 2.3 % were suffering from extreme depression. Association of depression with household income (p = 0.044) and duration of disease (p = 0.00) were significant while association of depression with level of education (p = 0.655) and occupation (p = 0.219) were not significant. **Conclusion:** Level of depression in patients of CHC is dangerously high. Level of depression in patients of CHC is strongly dependent on household income and duration of disease and independent of level of education and occupation.

INTRODUCTION

Hepatitis C is a worldwide disease and it's estimated that almost 185 million people have been infected with this disease. Out of 185 million people, 2.9% are diagnosed in Africa, 1.3% in Americas, in Asia 64 %, and in Australia 75% [1]. In Pakistan, the prevalence of Chronic Hepatitis C (CHC) is 6 % [2]. It has been observed that every year almost 3 to 4 million cases of CHC appear because of the non-availability of CHC vaccination and these numbers are continuously rising. Modes of transmission are through exposure to various body fluids including serum, semen and saliva. This may happen through intravenous drug abuse, unsafe injection practices, un-safe health care practices, transfusion of unscreened blood and blood products, dialysis, unprotected sexual encounters, post-transplant transmission (in 16% of the cases), perinatal or vertical transmission. Very high burden of chronic HCV infection has been observed to be reported in intravenous drug abusers, men who have sexual encounters with men, and individuals in jails or prisons. Many cases of acute HCV infection have also been reported. Usually these cases are being reported among HIV-infected individuals due to the similarity of risk factors and mode of transmission in both

DOI: https://doi.org/10.54393/pbmj.v5i6.521

of these viruses. Hepatitis C virus can also get transmitted vertically. Although the rate of vertical transmission is quite low (0.2% to 0.4%) [2], but this matter still needs attention. The symptoms which occur initially after inoculation with Hepatitis C virus include general systemic symptoms. Then 0.0 – 0.6% of the patients, suicidal ideation in 3.5 - 10% of the patients, and suicidal attempt is present in 0.0 – 0.2% of the patients [7]. Psychiatric disturbances cause 44% of the patients to leave the medication of CHC [8]. Depression is a leading cause of disability worldwide. Major depression is a serious side effect of interferon-α (IFN-α), which is used in the treatment therapy of CHC [9]. In a study by Sarwar S et al., the prevalence of depression in CHC was 56% in 2017 [10]. Rahman AS et al., showed that the prevalence of depression in CHC was 87% in 2017 [11]. In a study by Bhutto et al., in Karachi, the frequency of depression in CHC was 72.3% [12]. Another study in Karachi showed 59% rate of depression in patients of CHC [13]. Adrees et al., performed a study in Faisalabad, in which the prevalence was 48% [14]. In multiple international studies, the rate of developing depression in CHC was quite high but these rates were comparatively lower than the rates in Pakistan. Abbas et al., performed a study in Egypt in which the frequency of depression in CHC was 29% [15]. In a study by Egmond et al., performed in Brazil, frequency of major depression was 37.9% and other types of depressive disorders were found in 46.3% of the participants [16]. A developing country like Pakistan which has scarce health sector resources, has limited data related to this topic. This study had been directed to estimate the frequency and level of depression in CHC patients of Sahiwal. This study was a great source of knowledge in identifying the frequency of depression in CHC patients which is essential in preventing the mental health problems of the patients in Sahiwal. It was also helpful in creating general awareness regarding the associated risk factors in depression. Study results are also beneficial for clinician's counselors and health professionals in developing strategies and interventions that could be given to patients along with the treatment of this chronic disease. This local estimate may be utilized to assess and compare the prevalence the disease directs itself to hepatic manifestations. In later stages of life, it progresses to liver cirrhosis within 20-30 years after infection [3]. 1 – 4 % of individuals develop hepatocellular carcinoma every year [4]. There is an intricate correlation among mental health disorders and CHC. Rates of psychiatric problems are significantly higher in CHC as compared to rates of psychiatric problems in general population [5]. Depression is present in 30 - 70% of the patients of CHC [6], irritability in 17 - 67% of the patients [6], schizophrenia in 3.9% of the patients [6], bipolar disorder in 2.6% of the patients [7] , anxiety in 11 – 45% of the patients [7], fatigue in 39 - 80% of the patients, sleep disturbance in 18 - 45% of the patients, mania in 0.0 – 3.2% of the patients, psychosis in on district level or provincial level or more extensively on national level. This can help the policy makers to constitute mental health strategies to match the international standards of health care.

METHODS

Total 350 patients were selected by non- probability Purposive sampling. Sample comprised of male and female patients having age between 15 – 70yrs who, were positive for anti – HCV antibodies by ELISA or positive for HCV RNA by PCR for HCV. Patients of all genotypes were included. Patients having previous history of or undergoing any treatment for previous psychiatric / psychological / psychotic / epileptic / neural disease were excluded from the study. Patients with history of death of any family member in past six months, patients of any disabling or disfiguring disease, ladies during pregnancy or puerperium, lactating mothers, patients taking oral hormonal therapies, patients of endocrine disorders, immuno-compromised patients, organ transplant patients and patients having Hepatitis C for less than 6 months' duration were also excluded from the study. Beck's Depression Inventory Scale (BDI) was used to measure depression. This scale has 21 items with minimum and maximum scores as 0, 1, 2, 3. Depression was labeled if score was greater than 17. Patients scoring between 17 and 20 on the scale had borderline depression. Patients scoring between 21 and 30 on the scale had moderate depression. Patients scoring between 31 and 40 on the scale had severe depression. Patients scoring more than 40 on the scale had extreme depression. CHC (chronic hepatitis C) was labeled based on the detection of HCV RNA by PCR or anti-HCV antibodies by ELISA for more than six months' duration. Data were collected after approval from Institutional Review Board IRB (Letter no 1) Ethical Review Board of University of Lahore. Questionnaires were filled by interview method. Data were analyzed by utilizing SPSS version 21.0. For categorical data i.e., BDI score for depression and age, crosstab was utilized. Post – stratification Chi square test was used for association of socio demographical factors. p-value of less than or equal to 0.05 ($p \leq 0.05$) was considered as significant.

RESULTS

Out of 350, 17 participants were not suffering from depression, 15 participants were suffering from borderline depression, 148 participants were suffering from moderate

DOI: https://doi.org/10.54393/pbmj.v5i6.521

depression, 162 participants were suffering from severe depression and 8 participants were suffering from extreme depression, Figure 1.

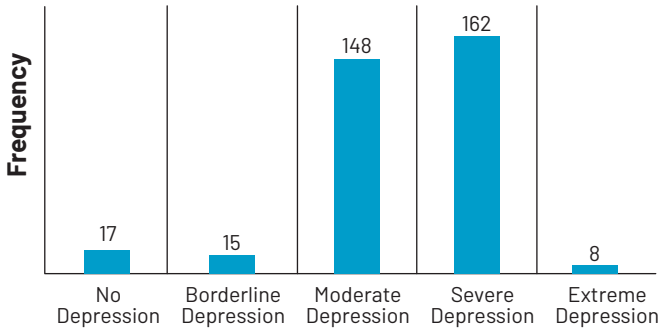

Figure 1: Frequency of Depression (n=350)

There was statistically significant association between disease duration and depression because probability of error was p = 0.01 (p < 0.05) with degree of freedom (df) = 8. Out of 2.3% participants who were having extreme depression, 25% patients had CHC for < 5 years, 12.5% patients had CHC for 5 to 10 years and 62.5% patients had CHC for > 10 years. (Table 1)

Duration of Disease	Level of depression					Total	df	P
	No Depression	Borderline Depression	Moderate Depression	Severe Depression	Extreme Depression			
less than 5 years	16 (94.1%)	14 (93.3%)	3 (2.0%)	4 (2.5%)	2 (25.0%)	39 (11.1%)	8	0.01
5 – 10 years	1 (5.9%)	0 (0.0%)	56 (37.8%)	63 (38.9%)	1 (12.5%)	121 (34.6%)		
more than 10 years	0 (0.0%)	1 (6.7%)	89 (60.1%)	95 (58.6%)	5 (62.5%)	190 (54.3%)		
Total	0 (0.0%)	1 (6.7%)	89 (60.1%)	95 (58.6%)	5 (62.5%)	190 (54.3%)		

Table 1: Crosstab for Duration of disease (n=350)

The association between household income and depression was statistically significant because probability of error was (p) = 0.044 (p < 0.05) with degree of freedom (df) = 12. Out of 2.3% participants who were having extreme depression, 50% patients were having household income less than 20,000 Rs. and 50% patients were having household income between 20,000 Rs. and 40,000 Rs. (Table 2). The association between occupation and depression wasn't statistically significant because probability value (p) = 0.219 (p > 0.05) with degree of freedom (df) = 8. Out of 46.3% participants who were having severe depression, 2.5% patients were unemployed, 55.6% patients were skilled workers and 42% patients were professionals. Out of 2.3% participants who were having extreme depression, 50% patients were skilled workers and 50% patients were professionals. The association between level of education and depression was not statistically significant because probability value (p) = 0.655 (p > 0.05) with degree of freedom (df) = 16. Out of 46.3% participants who were having severe depression, 13.6% patients were uneducated, 33.3% patients had completed matriculation level, 42% patients had completed intermediate level and 11.1% patients had completed bachelors' level. Out of 2.3% participants who were having extreme depression, 12.5% patients were uneducated, 37.5% patients had completed matriculation level and 50% patients had completed intermediate level.

House hold Income	Level of depression					Total n=350	df	P
	No Depression	Borderline Depression	Moderate Depression	Severe Depression	Extreme Depression			
less than 20,000	8 (47.1%)	8 (53.3%)	76 (51.4%)	58 (35.8%)	4 (50.0%)	154 (44.0%)	12	0.044
20- 40 thousand	8 (47.1%)	7 (46.7%)	60 (40.5%)	86 (53.1%)	4 (50.0%)	165 (47.1%)		
40-60 thousand	1 (5.9%)	0 (0.0%)	9 (6.1%)	13 (8.0%)	0 (0.0%)	23 (6.6%)		
More than 60 thousand	0 (0.0%)	0 (0.0%)	3 (2.0%)	5 (3.1%)	0 (0.0%)	8 (2.3%)		
Total	17 (4.9%)	15 (4.3%)	148 (42.3%)	162 (46.3%)	8 (2.3%)	350 (100.0%)		

Table 2: Crosstab for household income (n=350)

DISCUSSION

In present study, the rate of depression in patients of CHC was alarmingly high 95.2%. This is very much higher than majority of the studies from Pakistan. In a study by Waseem T et al., the prevalence of depression in CHC was 64% [17]. In a study by Aslam MN et al. the prevalence of depression was 29% [18]. In a study by Sarwar S et al., the prevalence of depression in CHC was 56% in 2017 [10]. In a study by Fatima K et al., the prevalence of depression in CHC was 90.6% [19]. In a study by Rahman AS et al., the prevalence of depression in CHC was 87% in 2017 [11]. In a study by Bhutto et al., in Karachi, the frequency of depression in CHC was 72.3% [12]. Another study in Karachi showed 59% rate of depression in patients of CHC [13]. Adrees et al., performed a study in Faisalabad, in which the prevalence was 48% [14]. In multiple international studies, the rate of developing depression in CHC was quite high but these rates were comparatively lower than the rates in Pakistan. Abbas et al., performed a study in Egypt in which the frequency of depression in CHC was 29% [15]. In a study by Egmond et al., performed in Brazil, major depression was 37.9% and other types of depressive disorders were found in 46.3% of the participants [16]. In present study, level of depression in patients of CHC had strong statistical significance with duration of disease (p value = 0.00). Out of all depressed patients, 54.3% patients were having CHC for more than 10 years, 34.6% patients were having CHC for 5 to 10 years and 11.1% patients were having CHC for less than 5 years. Similar results were shown in the studies by Memon et al [12]. Fatima. K et al., [14] and Abbas et al., [19]. In present study, out of all depressed patients, 91% had household income < 40,000 and association of income and depression was statistically significant because p value = 0.044 (p < 0.05)

DOI: https://doi.org/10.54393/pbmj.v5i6.521

with df = 12. Similar results were shown in a study performed by Sarwar S et al., [13]. Abbas. SM et al., conducted a study in 2017 in which lower socioeconomic status, un-employment and illiteracy were important risk factors in developing depression in CHC [19]. In a study by Nagi et al., in Shalimar hospital Lahore, 53% patients of chronic liver Disease were suffering from depression [20].

CONCLUSION

Level of depression in patients of CHC is independent of level of education and occupation but strongly dependent on household income and duration of disease.

REFERENCES

[1] Martínez I, Ryan P, Valencia J, Resino S. The challenging road to hepatitis C virus eradication. Journal of Clinical Medicine. 2021 Jan;10(4):611.doi.org/10.3390/jcm10040611

[2] Qamar Z, Anwar F, Ahmad R, Haq I, Khan AM, Hussain R, et al. Prevalence of Hepatitis C virus and determination of its genotypes in subjects of Tehsil Daggar District Buner, KP, Pakistan. Clinical Epidemiology and Global Health. 2021 Oct 1; 12:100809. doi.org/10.1016/j.cegh.2021.100809

[3] Wang JH, Hung SJ. Lichen planus associated with hepatitis B, hepatitis C, and liver cirrhosis in a nationwide cohort study. J Am Acad Dermatol. 2021 Apr;84(4):1085-1086. doi: 10.1016/j.jaad.2020.07.073.

[4] Roche B, Coilly A, Duclos-Vallee JC, Samuel D. The impact of treatment of hepatitis C with DAAs on the occurrence of HCC. Liver Int. 2018 Feb;38 Suppl 1:139-145. doi: 10.1111/liv.13659.

[5] Chong LW, Hsu CC, Lee CY, Chou RH, Lin CL, Chang KH, et al. Association of viral hepatitis and bipolar disorder: a nationwide population-based study. J Transl Med. 2018 Jun 22;16(1):173. doi: 10.1186/s12967-018-1542-3.

[6] Najaf HN, Kadhim DJ, Alkofee AJ, Al-Mashhadani DA. Depression, Anxiety and Stress Among a Sample of Chronic Hepatitis C Patients in AL-Najaf Province/Iraq. International Journal of Research in Pharmaceutical Sciences. 2019;10(4): 3170-7.doi.org/10.26452/ijrps. v10i4.1616

[7] Siddique S, Aaraj S, Haider I. Frequency of Depressive Disorders in Patients of Hepatitis C. Age (years). 2018 Jan 1;21(35):45.

[8] Janda M, Mergenhagen KA. The Effect of Psychosocial Factors on Success Rates of Hepatitis C Treatment. Psychosomatics. 2017 Nov-Dec;58(6):624-632. doi: 10.1016/j.psym.2017.07.003.

[9] Hoyo-Becerra C, Liu Z, Yao J, Kaltwasser B, Gerken G, Hermann DM, Schlaak JF. Rapid Regulation of Depression-Associated Genes in a New Mouse Model Mimicking Interferon-α-Related Depression in Hepatitis C Virus Infection. Mol Neurobiol. 2015 Aug;52(1):318-29. doi: 10.1007/s12035-014-8861-z.

[10] Sarwar S, Babur W, Mahwish S, Anwar I. Prevalence of depression among Hepatitis-C patients in tertiary care hospital. Pak J Surg. 2018;34(2):140-3.

[11] Rahman AS, et al. Prevalence of depression after treatment with conventional interferon's and ribavirin therapy in patients with hepatitis C using PHQ-9. Am J Res Med Sci, 2019;5(1). doi.org/10.5455/ajrms.20181102081059

[12] Bhutto AR, Jat MI, Rafi S, Amar W. Frequency of Anxiety and Depression in Chronic Hepatitis C Patients Visiting a Tertiary Care Hospi-Tal at Gadap Town, Karachi. Journal of Postgraduate Medical Institute. 2019;33(2):125-9.

[13] Memon SA, Zuberi BF, Ashfaq MN, Kiran Z, Qadeer R, Memon AR, et al. Frequency of depression in chronic Hepatitis C naïve patients. Pak J Med Sci. 2011 Jul 1; 27:780-3.

[14] Adrees M, Athar HM, Riaz MZ, Noor A, Noor M. Frequency of Depression in patients with HCV On Interferon Alfa Therapy. Annals of Punjab Medical College(APMC). 2018;12(4).

[15] Abbas SM, Salama HM, Nour-Eldein H. Depression among adults with chronic hepatitis C on antiviral treatment in Port-Said, Egypt. Journal of Public Health. 2018 Dec;26(6):679-86. doi.org/10.1007/s10389-018-0907-7

[16] Egmond E, Mariño Z, Navines R, Oriolo G, Pla A, Bartres C, et al. Incidence of depression in patients with hepatitis C treated with direct-acting antivirals. Braz J Psychiatry. 2020 Jan-Feb;42(1):72-76. doi: 10.1590/1516-4446-2018-0336.

[17] Waseem T. Prevalence of Depression in patients of Chronic Hepatitis B & C Presenting to Mayo Hospital Lahore. Methods. 2015 Feb.

[18] Aslam MN, Qureshi UF, Nadeem M. Anxiety and Depression: Prevalence in Chronic Hepatitis C Patients. The Professional Medical Journal. 2016 Mar 10;23(03):36-38. doi.org/10.29309/TPMJ/2016.23.03.1484

[19] Fatima K, Ghani MU, Ali M, Bano K, Fatima B, Shahzad A. Frequency and severity of depression in patients with Hepatitis C. Rawal Medical Journal. 2019;44 (2):255-8.

[20] Nagi ML, Manan S, Shaheen A, Amjad M, Farooq M, Kazmi ST. Depression; frequency of depression among patients of chronic liver disease attending a

DOI: https://doi.org/10.54393/pbmj.v5i6.521

tertiary care private hospital of Lahore. Professional Medical Journal. 2018 Nov 10;25(11):1701-6. DOI: 10.29309/TPMJ/18.4824