State Anxiety and Coping Strategies Used by Patients with Hepatitis C in Relation to Interferon Therapy

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The present study was conducted to examine state anxiety and coping strategies used by hepatitis C patients in relation to Interferon therapy. Hundred patients with hepatitis C were recruited from Pakistan Institute of Medical Sciences, Islamabad (PIMS). For assessment, State-Trait Anxiety Inventory (STAI; Speilberger, 1983) and Coping Strategies Questionnaire (CSQ; Kauser & Munir, 2004) were used. *t*-test analysis concluded that the level of state anxiety was significantly higher among patients who had received interferon therapy as compared to those who had not received it. The two groups also significantly differed in the use of coping strategies. Degree of anxiety in patients varied in relation to the types of coping strategies they used. Findings have important implications for provision of psychological services for hepatitis patients.

Keywords: hepatitis C, anxiety, coping strategies, interferon therapy

Hepatitis has remained a public health problem through recent decades. HCV was discovered in 1989 and was found to be the reason for the majority of cases of non-A, non-B hepatitis and was named as hepatitis C Virus (HCV).

Consequently, the complete genomes of various HCV isolates were cloned and sequenced by the investigators (Worman, 2002). Hepatitis C Virus (HCV) is involved chiefly in transfusion-related hepatitis and Hepatitis Delta Virus (HDV), which is sometimes associated with the hepatitis B infection (Mohan, 1995).

HCV may result in acute disease, which can be severe, asymptomatic and unobserved. In minority of the cases, the acute disease may resolve completely, but unfortunately hepatitis C can disturbingly cause chronic hepatitis. In turn, chronic hepatitis C leads to mild illness, which may be asymptomatic and not progressive. The disease will not be detected in these patients unless screening of hepatitis C virus is undertaken, as majority of the time the patients get diagnosed with hepatitis C at blood screening while donating blood or otherwise (Mohan, 1995). It is estimated that HCV has globally infected about 170 million people and 3 to 4 million people are newly infected each year (World Health Organization, 2006).

Hepatitis C is considered as a manageable disease and has different treatment regimens. Its treatment is constantly improving and all the current treatments for hepatitis C include various preparations of interferon alpha (Worman, 2002). The most commonly used treatment of hepatitis C is interferon therapy (IFN-α) and Ribavirin, an antiviral drug (DeNoon, 2005; McHutchison et al., 1998). Ribavirin is an oral drug that is effective against many viruses. Ribavirin when used alone for the treatment of hepatitis C virus decreases the amount of alanine aminotransferase in blood which further improves the liver cell structure but does not bring any change in the serum hepatitis C virus levels. Therefore, despite decreasing the symptoms it does

not cure the infection. Side effects of interferon therapy include initial flu-like symptoms, fatigue, bone marrow suppression, and neuropsychiatric disorders like depression and psychosis. The side effects depend on the dosage of interferon, if the dose is reduced then it becomes very helpful and it can lead to withdrawal of therapy in 15% of patients (Glauser, 2000).

Hepatitis C has been found to have a negative impact on the psychological status in 44.2% of patients (Fabris et al., 2006). Mood, anxiety, and personality disorders are common among hepatitis C patients each occurring in 26% to 34% of patients (Yovtcheva, Rifai, Moles, & Van Der Linden, 2005). Moreover, anxiety is reported to be common among those receiving interferon and it often increases during therapy with IFN-α. Fatigue and anhedonia are also frequently occurring side effects of IFN-α (Lieb et al., 2006).

There is research evidence to suggest that level of depression and anxiety not only increases during interferon alpha therapy but also continues after the treatment has ended (Gohier et al., 2003; Hilsabeck & Malek, 2004). Anxiety is also reported in chronic hepatitis C regardless the treatment status (Grassi et al., 2002). Kraus, Schafer, Faller, Csef, and Scheurlen (2003) examined the incidence, spectrum, and extent of psychiatric symptoms in patients receiving IFN-α therapy and compared it with an untreated reference group. Before therapy, scores of patients in the treatment group were above the respective cut off values for clinically relevant symptoms of depression, anxiety, and anger. The proportions of depression, anxiety, and anger/hostility rose after receiving therapy.

Coping with chronic illness plays a very important role in the process of recovery. Henderson, Fogel, and Edwards (2003) in their research on coping with breast cancer, found positive reappraisal and seeking social support to be the most commonly used coping strategies. In another research, religious coping strategies were considered important in adjustment to chronic illness (Gordon et al., 2002). Patients with lung cancer are reported to use combination of problem and emotion focused coping strategies (Kuo & Ma, 2002). Researchers do not show consensus on the type of coping strategies and their relation to psychological adjustment and report individual differences in coping strategies used by patients (De Faye, Wilson, Chater, Viola, & Hall, 2006).

In Pakistan overall prevalence of hepatitis C is 5% (7.5 million) in general public, 3.6% among voluntary blood donors, 5.2% among pregnant women and 5.4% among health workers. Other sources suggest that in Pakistan, prevalence rate of hepatitis C is 2.4 percent (WHO, 2005, 2006). Despite an

alarming increase in the number of people infected with hepatitis C in Pakistan and its implications for the patients, less attention has been given to the psychological aspects of the disease and its treatment.

The current study examined anxiety and coping strategies used by hepatitis C patients in relation to interferon therapy. For this purpose, two groups of patients were assessed; those who had received interferon therapy and those who were waiting for interferon therapy.

Objective

To examine psychological implications of interferon therapy for hepatitis patients.

Hypothesis

Two groups of patients would differ in the level of state anxiety being experienced as well as in the type of coping strategies employed by them.

Method

Participants

Sample comprised of 100 hepatitis C patients with equal number of patients who had received interferon therapy and those who were waiting to receive it. They were all women from lower socio-economic status. Patients having any other physiological or psychological disorder or using any other mode of treatment were excluded from the study. Demographic characteristics of patients in two groups are given in Table 1.

The patients ranged in 30-59 years of age. About 70 % of the patients waiting to receive interferon therapy were living in nuclear family system and 30 % were living in joint family system whereas 68 % of the patients who had completed interferon treatment were living in nuclear family and 32% of them were living in joint family system. The duration of illness among those patients who were waiting for interferon therapy ranged from 1-6 months and for those who had received interferon therapy ranged from 6-14 months.

Instruments

For assessment, State-Trait Anxiety Inventory and Coping Strategies Questionnaire (CSQ) were used.

1. State-Trait Anxiety Inventory (STAI; Spielberger, 1983). After seeking permission from the author, this was translated in Urdu language. STAI comprises of 20 items and the respondent is required to report how he/she feels right at the point moment of assessment. Each item on the scale is rated on a 4-rating scale to assess the intensity of anxiety. It was pleasing to note that alpha for the STAI was much higher for the present study ($\alpha = 0.88$.).

2. Coping Strategies Questionnaire (CSQ; Kausar & Munir, 2004). Coping strategies questionnaire (CSQ) comprises of 62 items and is developed for Pakistani population. The respondent has to indicate on a 4-point scale ranging from "did not use at all" to "used quite a lot" indicating the degree to which a strategy is used. The questionnaire assesses four types of coping namely as active-practical coping, active-distractive coping, avoidance-focused coping and religious-focused coping. Active practical

coping strategies include practical strategies and to find out practical solutions such as "sought professional help to solve the problem". Active-distractive coping strategies include strategies like "started socializing and meeting with people", "going out with friends". Avoidance-focused coping strategies include strategies like "tried to forget what had happened", "started avoiding others". Religious focus coping strategy included items such as "prayed to God".

For the current study, alpha measures for internal consistency of CSQ subscales were 0.72 for active practical coping strategies, 0.58 for active distractive coping strategies; 0.55 for avoidance focused coping strategies and 0.73 for religious focused coping strategies.

Design

The present study used a between group design as two groups of patients were assessed for state anxiety and coping strategies they used.

Procedure

After seeking formal permission from hospital authorities, hepatitis C patients were approached. Rationale of the study was explained to the patient and their written consent was sought. Individual assessments of those willing to participate were carried out at the premises of the hospitals and it took approximately 20-30 minutes to assess each patient.

Results

Data was analyzed using descriptive and inferential statistics. To examine level of anxiety in the two groups of hepatitis C patients, prescribed criteria for low, average and high level of anxiety was used. Descriptive statistics indicated that patients who had completed interferon therapy were experiencing average and high level of anxiety as compared to those who were waiting for interferon therapy (See Figure 1).

In order to compare two groups of patients on anxiety and the type of coping strategies used by them, a series of independent sample *t*-test analysis was carried out. Data revealed that those patients who had received interferon therapy were experiencing significantly more anxiety compared to those who were waiting to receive interferon therapy.

Analyses pertaining to coping strategies, as shown in Table 2, indicate that the two groups of patients differ in the use of coping strategies. Those who were waiting to receive interferon therapy used more religious focused and active practical coping strategies as compared to those who had completed interferon therapy. On the contrary, avoidance coping strategies were used significantly more by those who had completed interferon therapy as compared to those who were waiting to receive it.

In order to ascertain relationships between state anxiety and coping strategies, two sets of analyses were performed. In the first set, patients were divided into low and high anxiety using median split method. Independent *t*-test analysis was used to compare the two groups (low and high anxiety) on coping strategies (Table 3).

t-test showed that patients in low and high anxiety groups did not differ in the use of religious coping strategies. However, two groups differed significantly in the use of active practical, active distractive and avoidance coping. Patients experiencing low anxiety used significantly more active-practical and active-

Table 1

Demographic Characteristics of Two Groups of Patients (N=100)

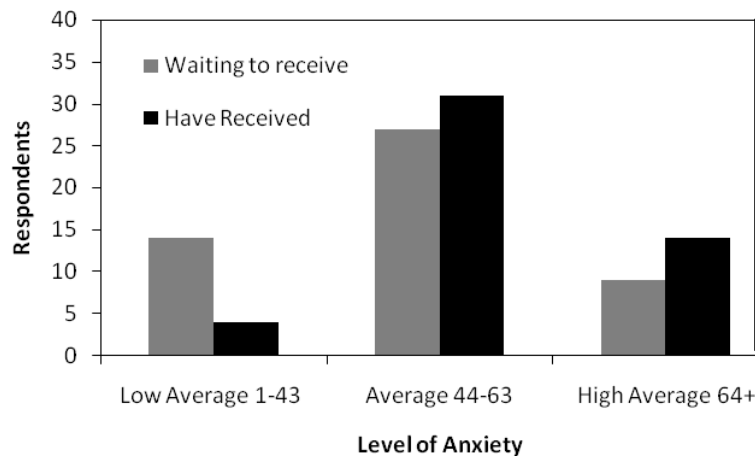| Variables	Waiting for Interferon therapy (*n* = 50)	Have completed Interferon therapy (*n* = 50)
Age in years		
M	41.24	42.02
SD	7.49	8.64
Range	30-59	30-58
Family System		
Nuclear	35 (70%)	34 (68%)
Joint	15 (30%)	16 (32%)
Monthly income in Rupees		
M	4526.00	5100.00
SD	1643.26	1832.25
Duration of illness in months		
M	2.90	9.42
SD	1.84	2.52
Range	1-6	6 -14

Figure 1. Level of anxiety of subjects who completed interferon therapy and who were waiting for interferon therapy

distractive coping strategies, whereas those experiencing high anxiety used more avoidance coping.

Multiple regression analysis was carried out to examine coping strategies as predictors of state anxiety in patients (See Table 4). Coping strategies accounted for 26% of the variance for state anxiety and were significant predictors ($F = 9.87$, $p < 0.001$). Avoidance coping emerged as a significant predictor of state anxiety, indicating that patients using avoidance coping were experiencing high level of state anxiety.

Table 2

Independent Sample t- test Comparing Two Groups of Patients on State Anxiety and Coping Strategies (N=100)

Variables	Respondents	*M*	*SD*	*t*
State anxiety	Waiting for interferon	51.60	12.02	2.17*
	Had received interferon	56.60	10.96	
Religious coping	Waiting for interferon	7.66	0.74	3.58**
	Had received interferon	7.04	0.96	
Active-practical coping	Waiting for interferon	7.10	0.70	3.56**
	Had received interferon	6.52	0.90	
Active-distractive coping	Waiting for interferon	5.96	0.66	1.53
	Had received interferon	5.72	0.88	
Avoidance focused coping	Waiting for interferon	6.84	0.58	3.30**
	Had received interferon	7.24	0.62	

df = 98. **p* < .05. ***p* < .001.

Table 3

Independent Samples t- test Comparing Low and High Anxiety Groups on Coping Strategies (N=100)

Variables	Respondents	*M*	*SD*	*t*
Religious coping	Low anxiety	7.42	0.90	0.76
	High anxiety	7.28	0.92	
Active -practical coping	Low anxiety	7.04	0.83	2.75*
	High anxiety	6.58	0.83	
Active-distractive coping	Low anxiety	6.14	0.80	4.10*
	High anxiety	5.54	0.64	
Avoidance focused coping	Low anxiety	6.72	0.57	5.82*
	High anxiety	7.36	0.52	

df = 98. **p* < .05.

Table 4

Regression Analysis Examining Coping Strategies as Predictors of State Anxiety (N=100)

Predictors	*B*	*t*	*p*
Religious coping	-0.02	0.19	0.84
Active-practical coping	-0.10	0.83	0.40
Active-distractive coping	-0.18	1.88	0.06
Avoidance-focused coping	0.41	4.51	0.001

R^2 = 0.2, ΔR^2 = 0.26, *F* = 9.87.

Discussion

The present study was conducted to examine state anxiety and coping strategies used by hepatitis C patients in relation to interferon therapy. Major findings of the present study indicated that patients who had completed interferon therapy were more anxious compared to those who were waiting for interferon therapy. It has been documented that interferon and ribiviran, despite being the best treatment do not necessarily diminish the virus in all those who complete this treatment (Astone-Twerell, Strauss, & Munoz-Plaza, 2006). Hepatitis patients have been reported to manifest psychological problems such as mood disorders and anxiety and despite having prolonged contact with medical services, depression and anxiety go undetected (Golden, O'Dwyer, & Conroy, 2005). Our findings are consistent with earlier studies (Kraus et al., 2003) suggesting an increase in depression and anxiety in patients who had received IFN-α therapy.

There is no empirical evidence suggesting complete recovery even after receiving interferon injections. Among people who suffer from HCV, about 15% are able to naturally clear the virus from the blood and the rest adjust to HCV as a continuing condition (Hazelden, 2007). Therefore complete treatment could make patients more concerned about its outcome. Another explanation for high anxiety in those who completed therapy is that the sample of the present study was from lower socio-economic class. Interferon therapy is very expensive in Pakistan and these patients had received treatment free of cost from a government hospital. They could be apprehensive about any negative outcomes of the treatment as they did not have any financial resources to repeat if required. On the other hand, those who were waiting for therapy were still hopeful and optimistic about the treatment.

Another important finding was pertaining to differential use of coping strategies by two groups of patients. Those patients who were waiting for interferon therapy used more religious focused strategies as compared to the ones who had completed the treatment. There is ample evidence suggesting that people turn to religion in adversity and they depend on praying and participation in religious activities in order to cope with terminal illnesses (Livneh, 2000). Patients who had completed the therapy reported to have no energy left to perform religious activities despite the fact that they desired so. Those patients who had not yet received interferon therapy could be hoping and praying for the success of treatment and they still had energy to perform religious activities.

Those who were waiting for interferon therapy used more active practical and active distractive coping strategies than those who had received interferon therapy. Those who had completed interferon therapy employed more avoidance coping, e.g., trying to forget what had happened. It can be argued that those who had completed interferon therapy after such a struggle could have become dreaded and apprehensive about the long term negative outcome of the treatment. This could have resulted in hopelessness and helplessness increasing the likelihood of use of avoidance coping and decrease in the use of active practical coping. Another plausible explanation for excessive use of avoidance coping and less use of problem focused coping by those who had completed therapy is their poor socio-economic status. As stated earlier, patients in the present study were recruited from the government hospitals which provide free treatment to poor patients but patients have to wait fairly long for their turn. Patients' apprehension about likely poor prognosis is understandable.

The findings of the present study have very important implications for provision of psychological support to patients having hepatitis C. Patients should be evaluated for their psychological condition during treatment and if they require psychological help, provision of psychological services should be ensured to help patients cope with their condition at different stages of treatment.

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