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REDUCING ANXIETY AND DEPRESSION AMONG HIV POSITIVE PATIENTS

Sunita Gupta
Guru Nanak Dev University, Amritsar, India

The present study was designed to investigate the effect of cognitive-behavioural technique on anxiety and depression scores in HIV positive patients. One hundred (50 male and 50 female) HIV positive patients in age group of 21-40 years served as the subjects. Four Systems Anxiety Questionnaire (Koskal & Power, 1990) and IPAT Depression Inventory (Krug & Laughlin, 1976) were used as dependent measures. A multivariate analysis involving gender (male and female) and treatment (counselling and no counselling) as independent variables and anxiety (assessed in terms of its four components, i.e., somatic, feeling, cognitive, behavioral) and depression as dependent variables were used in the present study. The design was replicated 25 times. The counselling was found to significantly reduce anxiety and depression in the patients thereby improving their mental health. The results also indicated that the main effect of gender and the interaction between gender and counselling treatment were significant only for total anxiety and its feeling component.

Key words: HIV/AIDS patients, anxiety, depression, gender differences

AIDS was first recognised in Los Angeles and New York in 1981 among homosexual males. The disease was characterized by profound immune suppression associated with opportunistic infections and neurological manifestations and came to be known as Acquired Immune Deficiency Syndrome. The causative factor was found to be a virus nomenclature as HIV (Human Immune Deficiency Virus) in 1986 by International Committee on Taxonomy of Virus; it damages the immune system of the body. Since the immune system protects the body from illness, people with HIV infection are susceptible to all sorts of other health problems including life-threatening infections.

Correspondence concerning this article should be addressed to Dr. Sunita Gupta, Department of Psychology, Guru Nanak Dev University, Amritsar, India. Email: drsunitagupta1@yahoo.com

As the people infected with HIV remain infectious lifelong, the infection produces a strong impact on the mental health status resulting in mood and anxiety disorders, depression and even psychotic manifestations. The possible causes of anxiety and depression in HIV/AIDS patients could be HIV confirmatory test and fear of social stigma (Taylor, 2006). According to Lader and Mathews (1970), anxiety in HIV patients is a feeling of nervousness, fear or dread of unknown and is manifested by many physical and mental symptoms which include palpitations, shortness of breath, sweating, dizziness and ineffable feeling of death whereas depression in HIV/AIDS is associated with a feeling of sadness and hopelessness due to loss of ability in usual activities, lack of energy, sleep disorders, isolation and irritable behaviour.

Roemer, Molina, and Borkovec

(1997) report that anxiety symptoms in HIV positive patients include trouble falling asleep, impaired concentration, fatigue, psychomotor agitation and physical symptoms, such as dizziness, chest pain, shortness of breath and panic attacks. Similar findings have been reported by Leiphart (1998) and Kelly (2003). Suicide ideation due to psychological distress is commonly reported by people with HIV (Goggin, Sewell, Ferrando, Evans, Fishman, & Rabkin, 2000).

Although Highly Active Antiretroviral Therapy (HAART) has been found to be responsible for increased survival time, improvement in physical health to some extent, decreased progression rates to AIDS and protection of the central nervous system (Collaborative Group on AIDS Incubation & HIV Survival, 2000; Parades, Mocroft, & Kirk, 2000; Porter, Babiker, Darbyshire, & Pezzotti, 2003), HIV disease remains a life threatening illness with no cure.

Since the role of medication is not effective in reducing psychological distress, a number of other treatments, such as cognitive-behavioural counselling (Naugle, Resnick, Gray, & Acierno, 2002), problem solving approach (Hedge, 2002) and behavioural medicine (Schneiderman,1997), have been found to be highly effective in reducing anxiety and depression in HIV patients and helping them to live full and productive lives.

According to National Aids Control Organization (NACO, 2001), HIV/AIDS behavioural change counselling is a confidential dialogue between a psychologist and a person and aims to provide psychosocial support, prevent HIV infection by changing life style behaviour of patients, and enable the patient to cope with stress and make decisions. Moreover, counselling helps the patients and their families to lead a life in the direction of alleviating psychological pain, depression and other mental disorders (Penn, 1985).

Goffman (1986) reports that counselling helps in removal of social stigma attached to the person with AIDS, whereas Gonzales, Steinglass, and Reiss (1987) report that a pragmatic and problem focused counselling encourages the patient and his/her family to focus on the tasks of everyday life so as to put illness to its place.

Only a few studies have tried to study the effectiveness of counselling in reducing anxiety and depression in HIV/AIDS patients. Linda, Livonia and Beverly (1995) provided personal construct counselling to AIDS patients with the goal of reducing their anxiety levels. The anxiety of the counselled patients was significantly less than uncounselled ones, especially their anxiety about bodily mutilation and guilt. John and Alana (1996) and Thomas and Geri (1996) found that counselling helps HIV patients to improve their quality of life and reduce their anxiety and depression symptoms.

Debra (1997) used counselling with HIV positive female patients and found it to be effective in reducing the feelings of anger, blame, guilt, anxiety and depression. Similar findings have been reported by Grammon (1998) and Valente (1999).

Jenny and David (2002), Mathews (2003), and Glenn and Andrew (2004) used psychological intervention models of cognitive behaviour therapy, psychotherapy and other group and

family approaches on HIV patients and reported a decrease in their level of anxiety, depression and suicidal thoughts.

The review of literature clearly suggests that not even a single study has been carried out so far in Indian context that has tried to investigate the effectiveness of counselling on psychological measure of anxiety and depression in HIV positive patients. Moreover, Koskal and Power (1990) have suggested that the conceptualization of anxiety in terms of its different components enables a researcher or therapist to assess a patient's anxiety profile in a more detailed manner and treatment efficacy may subsequently be improved. Keeping in view Koskal and Power's (1990) suggestion, anxiety was assessed in terms of its different components so as to understand the concept of anxiety better. The present study was thus designed to apply cognitive behavioural counselling on HIV positive patients so as to bring out behaviour change in them and study its effects on anxiety along with its four components, namely, feeling, cognitive, behavioural and somatic as well as depression. In addition, an attempt was also made to investigate the independent and interactive effects, if any, of gender and counselling treatment on dependent measures of anxiety along with its four components and depression. It was hypothesized that anxiety and depression scores of HIV positive patients would reduce after counselling.

Method

Sample

The sample consisted of one hundred indoor patients (50 males and 50 females) who voluntarily attended Counselling and Testing Centre, Microbiology Department, Government Medical College, Amritsar and were diagnosed as HIV positive patients. All the participants were literate with education ranging from matriculation (10^{th} grade) to graduation and well versed with English language. The age range of the participants was 21-40 years (M = 32, SD = 6.0). The participants were then assigned to two treatment conditions randomly (counselling group and non-counselling group) with 25 males and 25 females in each group.

Instruments

1. Four Systems Anxiety Questionnaire (FSAQ; Koskal & Power, 1990)

FSAQ was used to assess anxiety on its four components namely somatic, cognitive, behavioural and feeling. The FSAQ consists of 60 items concerning difficulties that most people experience from time to time. The respondents were asked to indicate whether they have or have not experienced, in accordance with the content of the item, by ticking 'yes' or 'no' option given against each of them. The test provides measures for four subscales comprising 15-items each. Each item has been assigned a scale value. The patients' scores were computed by adding the scale values of the items with which they agreed. The scores ranged from 0 to 83.3 for feeling and cognitive, 0 to 82.5 for behavioural and somatic and 0 to 331.6 for total anxiety.

Example items included:

1. I often have a headache (Somatic)
2. I rarely feel joyful (Feeling)
3. I rarely worry about unimportant ones (Cognitive)
4. I usually avoid getting involved in social activity (Behavioural)

Reliability in terms of Cronbach's alpha coefficient as reported by the author in the manual was .82 for the feeling component, .81 for the cognitive component, .68 for the behavioural and the somatic component and .92 for the questionnaire as a whole. The concurrent validity coefficients of FSAQ in terms of its correlation with State Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970) as reported by the author in the manual were .75, .76, .47, .62 for feeling, cognitive, somatic and behavioural components, respectively, and .80 for the questionnaire as a whole. This questionnaire has been already used in Indian setting by Gupta and Gupta (1997) who reported Cronbach's alpha coefficients to be .87, .89, .90, .91and .88, respectively, for composite anxiety and its four components, namely, feeling, cognitive, somatic and behavioural. The validity coefficients in terms of its correlation with STAI (Spielberger et al., 1970) were reported to be .86, .81, .73 and .80 for feeling, cognitive, somatic and behavioural components, respectively, and .85 for the questionnaire as whole.

The reliability and validity of FSAQ computed for the current sample are reported in 'Results' section.

2. IPAT Depression Inventory (Krug & Laughlin, 1976)

IPAT was used to assess depression level of the subjects. The test consists of 40 statements about how people feel or think at one time or the other. There are no right or wrong answers. The subject has to pick the one that is really true for him or her and answers have to be marked in a, b, c order form. The scores on the inventory range from 0 to 80.

Example items included:

1. I hardly ever feel sad and gloomy.
2. I feel too depressed and useless to talk to people.

Cronbach's alpha coefficient for the scale reported in manual was .93 and the validity of the scale in terms of its correlation with Clinical Analysis Questionnaire (CAQ; Delhees & Cattell, 1975) was .88. This inventory has already been used in Indian setting by Shams (1995) who reported Cronbach's alpha coefficient and validity in terms of its correlation with BDI (Beck et al., 1961) to be .91 and .86, respectively.

The reliability and validity coefficients of the inventory for the current sample are reported in 'Results' section.

Design

A multivariate analysis, involving 2 levels of gender (males and females) and two treatment conditions (counselling and no counselling) was used to investigate independent and interactive effects on six dependent variables (four components of anxiety, namely, somatic, cognitive, feeling and behavioural and their composite score on depression). The design was replicated

25 times (the no. of subjects in each cell was 25).

Procedure

The data were collected by the researcher herself with the permission of administrative staff of counselling and treatment centre that was granted generously. Both the questionnaires were administered individually to the participants after briefing them about the purpose of the study and explaining the contents of questionnaire. The participants were assured that information provided by them would be used for research purposes only. A gap of 5 minutes was given between the tests. It took almost fifteen to twenty minutes to get each questionnaire filled by each participant.

The participants in counselling group were given counselling sessions daily for one month. Cognitive-behavioural counselling was provided by the researcher herself who was first trained as a HIV counsellor and then as trainer to HIV counsellors by Ministry of Health and Family Welfare, Government of India in 2004 (at present, one of the researcher's students is working as HIV counsellor in the Counselling and Treatment centre from where the sample was selected). Counselling sessions involved allowing the patients to identify and express their feelings, assisting them to develop action plans for issues of concern, encouraging behaviour change as appropriate, providing up-to-date information on HIV/AIDS prevention, treatment and care, helping draw support from their social network, family and friends, assisting them to adjust to grief and loss, helping them to maintain control over their lives and discover a meaning for their life as well as assess the need for follow up and care. The counselling process thus addressed the physical, social, psychological and spiritual needs of the patients.

The pre-treatment testing for both psychological measures was done one day before the commencement of the counselling sessions, while the post-treatment testing was done one day after the counselling session (which lasted for one month) was over. The participants in the non-counselling group were simply tested with both psychological measures and retesting was done after one month; no counselling was provided to this group. The participants of both the groups were regularly taking the medicines prescribed by the physicians.

Results

The reliability and validity coefficients of both the psychological measures for the current sample were determined. Cronbach's alpha coefficients computed for total FSAQ and its four subscales, namely, feeling, cognitive, behavioural and somatic were .89, .90, .88, .85 and .91, respectively ($p < .001$). The concurrent validity coefficients of FSAQ in terms of its correlation with trait scale of State–Trait Anxiety Inventory (Spielberger et al., 1970) for feeling, cognitive, behavioural, somatic subscales and composite anxiety were .84, .87, .85, .86 and .85, respectively ($p < .001$). Cronbach's alpha coefficient and validity of IPAT Depression inventory for the current sample in terms of its correlation with Beck Depression In-

ventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) were .86 and .81, respectively ($p < .001$). The differences between post-counselling and pre-counselling scores for all the six dependent measures, namely, composite anxiety along with its four components and depression for all the groups were used for data analysis. The means and standard deviations for the difference scores on all the dependent variables for all the groups are shown in Table 1.

Before the score differences were treated by MANOVA, these were tested for assumption of homogeneity of variance by Cochran test. The test indicated that the assumption was valid in all the groups.

The data were then subjected to two-way analysis of variance; the abridged results for all the dependent variables are reported in Table 2.

The results reported in Table 2 clearly reveal that the main effect of gender was statistically significant for feelings component of anxiety F (1, 96) = 5.9, $p < .05$ and composite anxiety F (1, 96) = 8.41, $p < .01$); HIV positive females were found to have greater scores than their male counterparts.

Table 1

Means and Standard Deviation of Scores (Pre-Post) on all the Dependent Variables for Gender X Counselling Groups (N=100)

Dependent Variables	Men (n = 50)		Women (n = 50)	
	Non-Counselling group (n=25) M (SD)	Counselling group (n=25) M (SD)	Non-counselling group (n=25) M (SD)	Counselling group (n=25) M (SD)
Anxiety Component				
(a) Feelings	1.59 (3.46)	46.94 (11.95)	0.37 (1.49)	37.56 (11.36)
(b) Cognition	0.65 (2.24)	43.36 (21.61)	00 (00)	36.61 (15.89)
(c) Behavioural	00 (0)	41.04 (11.38)	00 (0)	36.74 (11.82)`
(d) Somatic	2.02 (3.75)	20.51 (12.40)	2.45 (4.41)	19.46 (20.55)
Composite Anxiety				
	1.16 (1.81)	38.54 (5.81)	0.47 (0.96)	33.00 (5.64)
Depression				
	0.84 (0.90)	29.00 (7.80)	0.24 (2.18)	31.20 (5.48)

Table 2

F Ratios for Difference Scores on all the Dependent Variables in Gender X Counselling Groups

Dependent Variables	Gender Variable A	Counselling Variable B	Interaction AxB
Anxiety components			
(a) Feelings	5.9***	652.5*	9.9**
(b) Cognition	1.29	224.3*	1.89
(c) Behavioural	1.82	561.8*	1.82
(d) Somatic	0.09	81.1**	0.016
Composite Anxiety	8.41**	191.7*	13.87**
Depression	2.76	947.7*	0.33

df =(1, 96). **p* < .001. ***p* < .01. ****p* < .05.

The results also clearly demonstrated that gender did not produce its significant effects on depression F (1, 96) = 2.76, p = ns.; men and women suffering from HIV infection did not differ significantly on depression (Table 2).

The results reported in Table 2 also indicate that counselling produced a significant effect on composite anxiety, F (1, 96) = 191.7, $p < .001$ and its four components, namely, feelings, F (1,96) = 652.5, $p < .001$, cognition, F (1,96) = 224.3, $p < .001$, behavioural, F (1,96) = 561.8, $p < .001$ and somatic, F (1,96) = 81.1, $p < .01$ and depression, F (1,96) = 947.7, $p < .001$ in both male and female HIV positive patients; post-counselling scores were less than pre-counselling scores. The scores on both anxiety (and its components) and depression were found to be less in counselling group than non-counselling group. The results, therefore, unambiguously demonstrate that the regular effective counselling daily for one month leads to significant reduction in the scores on anxiety and its components as well as depression.

It is also evident from the results reported in Table 2 that gender and counselling treatment interact with each other to produce a combined effect on composite anxiety, F (1, 96) = 13.87, $p < .01$ and its feeling component F (1, 96) = 9.9, $p < .01$. The objective regarding the interaction was purely exploratory. The significance of differences between the means involved in this interaction was evaluated by Duncan's Multiple Range Test. The test indicated that HIV positive male patients has less scores on feeling component of anxiety after counselling than female patients, q (2, 96) = 3.70, $p < .01$. It can be inferred, therefore, that although counselling reduces anxiety in female patients significantly but still they had larger scores on anxiety and its feeling component than males. The female pa-

tients, who received counselling, scored less on composite anxiety as well as its feeling component than those who did not receive counselling sessions, q (2, 96) = 3.70, $p < .01$. Similarly, the counselled male patients had lesser scores on composite anxiety and its feeling component than non counselled male group q (4, 96) = 4.50, $p < .01$. Such interactions for other three anxiety components (somatic, behavioural and cognitive) and depression were statistically non-significant thereby indicating that male and female patients responded equally to the counselling treatment and scored comparably on these dependent measures.

The results thus clearly demonstrate that counselling reduces anxiety and depression in HIV positive patients thereby producing its relaxing and calming effects.

Discussion

The present study was carried out to investigate the effectiveness of behavioural-cognitive counselling in reducing anxiety and depression among HIV positive male and female patients. In addition, an attempt was made to investigate the independent and interactive effects of gender and counselling treatment on anxiety and depression in HIV patients.

The reliability and validity of FSAQ (Koskal & Power, 1990) and IPAT Depression Inventory (Krug & Laughlin, 1976) were determined for the present sample. Cronbach's alpha coefficients clearly indicated that both the tools were reliable and internally consistent measures to assess anxiety and depression in HIV patients. The validity coefficients for both the tools were determined by correlating FSAQ with STAI and IPAT Depression Inventory with BDI; both the tools were found to be highly valid for the present sample.

The results in regard to the main effect of gender clearly indicated that HIV positive females had greater scores on composite anxiety and its feeling component than male counterparts. The findings are, therefore, consistent with those reported by Larson and Pleck (1999) and Barroso, Carlson, and Meynell (2003).

The results are also in line with the findings reported by La France and Banaji (1992) and Sprecher and Sedikides (1993) who found that women feel more and thus are more sensitive and emotional than men which makes them more anxious. Rabin, Ward, Leventhal, and Schmitz (2001) report that females are more sensitive toward feelings than males because they have more complicated representations of emotions. Moreover, they pay more attention to emotional events than men because emotions occur within the context of relationships, which are more central to women's self concept.

Richards and Gross (2000) suggested an alternative explanation for gender differences in feeling; men are more likely than women to suppress feeling which interferes with the memory for emotional events. Pennebaker and Roberts (1992) also report that men and women base their emotional feelings on different sources of information; men infer their emotions from internal physiology, whereas women infer their emotions from environment. Thus men express feelings

inwardly, while women express feelings outwardly. The authors also report that the biological differences between men and women make physiological information more available to men.

The results also indicated that HIV positive men and women had comparable scores on depression. The results thus agree with Nolen-Hoeksema and Keita (2003) and Grant et al. (2002), who reported that gender differences do not appear in developing countries and homogenous populations. Khan, Gardner, Prescott, and Kendler (2002), also reported that men and women are equally depressed. According to Kessler (2000) women are not more depressed than men because they are habituated to experiencing more stressful events.

The results, therefore, are not consistent with the findings reported by Barroso and Powell-Cope (2000), Morrison, Petito, TenHave, Gettes, Chiappini, and Weber (2002) and Sandelowski, Lambe, and Barosso (2004) who reported greater depression in female HIV positive patients than male patients.

The absence of gender differences in depression among HIV positive patients can also be attributed to the fatalness of disease. As HIV infection is highly chronic and life threatening disease which is associated with many physiological and psychological reactions including anxiety, depression and relationship difficulties, both male and female HIV/AIDS patients receive negative responses from others and less social support due to stigma attached to the disease (Fife & Wright, 2000; Turner-Cobb et al., 2002) leading to equivalent levels of depression. The fear of disclosure of the chronic disease further adds to depression in both men and women.

The most important objective of the present study was to study the effects of counselling on anxiety and depression in HIV positive patients. The results clearly suggested that counselling significantly reduced anxiety (composite and its four components) and depression in HIV positive patients as an effect of regular effective counselling daily for one month. The results are, therefore, in line with the previous findings (Debra, 1997; Glenn & Andrew, 2004; Grammon, 1998; Jenny & David, 2002; John & Alana, 1996; Linda et al., 1995; Mathews, 2003; Thomas & Geri, 1996; Valente, 1999)

Schneiderman (1999) reports that cognitive behavioural interventions decrease distress because they buffer the psychological and immunological consequences of learning about positive serostatus, improve surveillance of opportunistic infections, improve psychological adjustment to retard the progress of HIV virus thus contributing to better health.

Carey, Bratten, Maisto, Gleason, Forsyth, and Durant (2000) report that the relaxing effects of counselling are due to the presence of motivational component which increases motivational level of the patients so as to change their risk-related behaviour. The motivation training induces a state of readiness to change by helping the AIDS patients develop behaviour-change goals and their current behaviour and develop a sense of self efficacy that they can change.

Moreover, counselling has been found to improve immune functioning

of the patients thereby producing marked physiological changes such as decrease in blood pressure and pulse (Kelly, 2003; Gupta & Sharma, 2007), decrease in EMG scores and increase in alpha EEG scores (Gupta & Sharma, 2007) which in turn results in good physical and mental health of HIV positive patients. Counselling thus changes the physiology of patients thereby producing relaxing effects.

The objective regarding interactive effects of gender and counselling treatment was purely exploratory. The results in this connection clearly indicated that counselling reduced anxiety and depression scores in both HIV positive men and women. It was also evident from the results that although counselling reduced anxiety and depression in female patients significantly, but still they had larger scores on composite anxiety and its feeling component than males. Taylor (2006) also reports that as HIV positive women suffer from critical gynaecological infections too, mere counselling seems to produce less effect on them as compared to male patients. It is, therefore, suggested that counselling needs to be combined with some other therapeutic procedure to relieve the female patients from anxiety and depression to a greater extent.

However, it can be concluded that appropriate counselling reduces anxiety and depression in HIV positive patients thereby producing its calming and soothing effects.

The findings of the current study have highlighted the need to explore the effects/impact of different types of counselling interventions on HIV positive patients.

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