ORIGINAL ARTICLE Received 24 September. 2017 Accepted 12 December. 2017

Vol. 7, Issue 1, 1-8, 2018

Academic Journal of Psychological Studies

ISSN: 2333-0821

ajps.worldofresearches.com

A Study of Inferential Feedback as an Outcome Measure in Treatment Resistant Depression

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A B S T R A C T

20% of patients with depression do not respond satisfactorily to medications. Studying clinical variables can help identify predictors of outcome in these patients. To study inferential feedback provided by caregivers and perceived by patients with depression. To compare the inferential feedback provided by caregivers and perceived by cases with that of controls. 30 patients with treatment resistant depression attending the Psychiatry OPD were selected as cases and were matched with 30 non-resistant controls. They were assessed using semi- structured questionnaire for socio demographic data, Hamilton depression rating scale, DSM IV TR criteria and Adaptive inferential feedback questionnaire. Cases perceived and received lower adaptive inferential feedback as compared to controls. And it was negatively associated with HDRS scores. People with treatment resistant depression perceived as well as received more maladaptive inferential feedback from their caregivers. And Adaptive inferential feedback was negatively associated with the severity of depression.

Keywords: Resilience, Intimacy, Marital Compatibility.

INTRODUCTION

Treatment-resistant depression (TRD) or Treatment-refractory depression is a term used in clinical psychiatry to describe cases of major depressive disorder that do not respond to adequate courses of least two antidepressants(Wijeratne & Sachdev, 2008).

Studies evaluating predictors of outcome of depression have found that a positive family history of affective illness, extremes of age at onset of depression, and severity and chronicity of illness are linked to treatment resistance(Burnam, Rogers, Hays, & Camp, 2004; El Bayoumi & Ismail, 2015; Hedlund & Vieweg, 1979; Klein et al., 1999; Mulsant & Pollock, 1998; Thase, 2000; Wells, Burnam, Rogers, Hays, & Camp, 1992).

Apart from these illness related factors, increasing perceived social support may be important to prevent the development of depression, especially for individuals who are vulnerable to depression. The positive effect of perceiving the availability or rendering of social support has been established in the social support literature(Beedie & Kennedy, 2002; McCall, Reboussin, & Rapp, 2001). Adaptive inferential feedback is a subtype of social support that was identified in the Expanded Hopelessness Theory, an extension of the Hopelessness Theory of

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DOI: In prossing
To cite this article: Limbachiya, R. J., Nayak, A. (2018). A Study of Inferential Feedback as an Outcome Measure in Treatment Resistant Depression. *Academic Journal of Psychological Studies,* 7 (1), 1-8.

Depression, to include the contribution of social support(Abramson, Metalsky, & Alloy, 1989; Panzarella & Alloy, 1995). Inferential feedback is the feedback which is not immediate but is derived by evidence and logical reasoning. Notably, it is specifically defined as particular types of statements by significant others that are contrary to depress genic inferences. It is the offering of adaptive inferences for negative events by persons in the support network(Panzarella & Alloy, 1995). Adaptive inferential feedback has been found to prospectively decrease depress genic inferential styles and depressive symptoms and to be associated with fewer depressive disorders(Panzarella & Alloy, 1995). The Adaptive inferential feedback questionnaire was developed as a measure of the inferential feedback a person receives following a stressful event(Abramson et al., 1989). The AIFQ asks the respondent (cases and controls) to name one individual who is part of their support network (caregiver) and to describe a recent stressful event. Respondents are then asked to rate the degree to which each person indicated that the cause of the negative event will always be causing problems or will lead to problems in other areas in their life, that the cause indicates that they are flawed in some way, or that the occurrence of the stressor is likely to lead to future negative consequences(Abramson et al., 1989; Panzarella & Alloy, 1995).

However there are hardly any Indian studies to identify the adaptive inferential feedback in treatment resistant patients. Hence we planned this study, to evaluate the inferential feedback provided by caregivers and perceived by patients with resistant depression with those of non-resistant depression.

METHODOLOGY

This was a comparative study done at a tertiary care hospital after Institutional Ethics Committee approval. 30 patients with treatment resistant depression attending the Psychiatric OPD fulfilling the inclusion criteria were selected as cases. They were administered semi-structured questionnaires to obtain socio – demographic details. Severity of the disease was assessed using the Hamilton depression rating scale (HDRS). They were compared with 30 patients with non-resistant depression selected as controls. The cases and controls completed a modified version of the AIFQ (AIFQ4) to assess the amount of adaptive inferential feedback they perceived receiving from the caregivers. The caregivers completed the AIFQ5 which asks about the number of times and the type of adaptive inferential feedback they offered to their patients (cases and controls).

Inclusion Criteria

CASES:

1] Age group: 18 to 50 yrs.

2] Fulfilling the DSM IV TR criteria for depression

3] Treated by 2 antidepressants for 6 weeks each

4] Scoring > 17 on HDRS scale at the end of 12 weeks

CONTROLS:

1] Age group: 18 to 50 yrs.

2] Fulfilling the DSM IV TR criteria for depression

3] Treated by antidepressant for 6 weeks

4] Scoring < 17 on HDRS scale at the end of 6 weeks

5] Matched for age, gender and socio-economic status

EXCLUSION CRITERIA

1] Age group: > 50 yrs. and < 18 yrs.

2] Non-compliant individuals

MATERIALS

1) Semi-Structured Questionnaire for Interview: It was designed to obtain socio-demographic details.

2) Hamilton Depression Rating Scale (HDRS Or HRSD)(Hamilton, 1960): It is a multiple choice questionnaire to rate the severity of a patient's depression. The responses to each question are selected by interviewing the patient and by observing the his/her symptoms. Each question has between 3-5 possible responses which increase in severity. Although the HAM-D form lists 21 items, the scoring is based on the first 17(Hamilton, 1967). Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine are scored from 0-2.

3) Diagnostic And Statistical Manual Of Mental Disorders- Iv–TR Criteria(Hamilton, 1967): It is published by the American Psychiatric Association and provides a common language and standard criteria for the classification of mental disorders.

4) Adaptive Inferential Feedback Questionnaire(Abramson et al., 1989; Panzarella & Alloy, 1995): Responses range on a scale from five to zero. (5=completely unlikely to frequently cause problems, 4=very unlikely to frequently cause problems, 3=somewhat unlikely to frequently cause problems, 2=somewhat likely to frequently cause problems, 1=very likely to frequently cause problems, 0=completely likely to frequently cause problems). A total inferential feedback score is calculated by summing the average scores given by the person on each domain. Higher total scores indicate that the individual perceives receiving adaptive inferential feedback, while lower total scores indicates the receipt of maladaptive feedback. For the purposes of this study, the cases and controls completed a modified version of the AIFQ (AIFQ4). This assessed the amount of adaptive inferential feedback they perceived receiving from the caregiver. The caregiver completed a modified version of the AIFQ (AIFQ5) that inquired about the type of support they offered their partner. The AIFQ has demonstrated reliability for use within a college-aged sample. A retest reliability coefficient.48 has been demonstrated for a twelve-week period of time. Adequate internal consistency also has been documented (alpha coefficient = .66).

The data was analysed using Mann Whitney test, Fisher's Exact Test and correlation was analysed using Spearman's coefficient of correlation.

RESULTS

Table 1. Total AIFQ 4 score

Parameter	Cases (n = 30)	Controls (n = 30)
Mean	6.800	12.467
Std. deviation	3.253	3.288
Std. error	0.5938	0.6003
Lower 95% CI	5.585	11.239
Upper 95% CI	8.014	13.694

The two-tailed P value is < 0.0001, considered extremely significant - Mann-Whitney Test

As shown in table 1, the mean AIFQ 4 (perceived feedback by the patient) in cases was 6.800 and controls was 12.467. The difference in scores was statistically significant.

Table 2. Total AIFQ 5 score

Parameter	Cases (n = 30)	Controls (n = 30)
Mean	6.833	12.900
Std deviation	3.064	2.952
Std error	0.5593	0.5389
Lower 95% CI	5.690	11.798
Upper 95% CI	7.977	14.002

P value is < 0.0001, considered extremely significant - Mann Whitney test

As seen in table 2, the mean AIFQ 5 score (feedback offered by the caregivers as perceived by them) in cases was 6.833 and controls was 12.900. The difference in the scores was statistically significant.

On asking the question "As a result of talking with the caregiver, you felt better, worse or the same about the stressful experience you indicated?" to the patients, the answers were as follows.

Table 3. PT'S feeling (%)

Pt's feeling	Cases	Controls
Worse/same	20 (66.67)	11 (36.67)
Better	10 (33.33)	19 (63.33)
Total	30	30

Fisher's Exact Test - The two-sided P value is 0.0379, considered significant.
Odds ratio= 3.455

On asking the question "As a result of talking with the caregiver, you felt better, worse or the same about the stressful experience you indicated?" to the patients, the answers were as in table 3.

Of the 30 cases, 10% reported feeling worse after feedback from relative, 56.67% reported feeling same whereas 33.33% reported feeling better. Of the 30 controls, 10% reported feeling worse, 26.67% reported feeling same whereas 63.33% reported feeling better. The difference between cases and controls feeling same/ worse and better was statistically significant.

On asking the patient in AIFQ 4 - “What did the caregiver indicate to you regarding the stressor in your life?” the following answers were received.

Table 4. AIFQ (Fisher's Exact Test)

Questions	Cases (%)	Controls (%)	P Value
1. cause of the stressor is likely to lead to problems in other areas of your life	26 (86.67)	14 (46.67)	0.0022
2. cause of the stressor is likely to frequently cause problems later	25 (83.33)	10 (33.33)	0.0002
3. occurrence of the stressor is likely to lead to other negative things happening to you	27 (90)	8 (26.67)	< 0.0001
4. occurrence of the stressor is likely to mean that you are flawed in some way	20 (66.67)	7 (23.33)	0.0016

On asking the caregiver in AIFQ 5 - “What did you indicate to the patient regarding the stressor in their life?” the following answers were received.

Table 5. Fisher's Exact Test

Questions	Cases (%)	Controls (%)	P Value
1. cause of their stress or feelings of distress is likely to lead to problems in other areas of their life	27 (90)	12 (40)	< 0.0001
2. cause of their stress or feelings of distress is likely to frequently cause problems later	27 (90)	10 (33.33)	< 0.0001
3. cause of their stress or feelings of distress is likely to lead to other negative things happening to them	27 (90)	9 (30)	< 0.0001
4. cause of their stress or feelings of distress is likely to mean that they am flawed in some way	19 (63.33)	3 (10)	< 0.0001

On asking the patient in AIFQ 4 - "What did the caregiver indicate to you?" (Table 4)

And the caregiver in AIFQ 5 - "What did you indicate to the patient?" (Table 5) there was a significant difference found in the individual responses of AIFQ 4 and 5 between cases and controls as shown in tables 4 and 5. Thus, the difference in the caregiver's feedback as well as the perception of patients regarding the feedback was statistically significant between cases and controls.

Table 6. Association HDRS and AIFQ 4

ASSOCIATION BETWEEN	SPEARMAN R VALUE	P VALUE
HDRS AND AIFQ 4 TOTAL SCORE	-0.5314	< 0.0001
HDRS AND AIFQ 4 Q.1	- 0.4949	< 0.0001
HDRS AND AIFQ 4 Q.2	-0.3676	0.0039
HDRS AND AIFQ 4 Q.3	-0.5613	< 0.0001
HDRS AND AIFQ 4 Q.4	-0.4702	0.0002

As shown in table 6, there was a negative correlation found between HDRS scores and AIFQ 4 (perceived feedback by patients) total as well individual scores. A significant negative association was found between HDRS score and patient feeling that their caregiver said that current stressor is unlikely to lead to problems and also unlikely to cause problems in other areas of their life. A significant negative association was found between HDRS score and pt feeling that their caregiver said that current stressor is unlikely to lead to negative things and is unlikely to mean that they are flawed in some way.

Table 7. Association HDRS and AIFQ 5

ASSOCIATION BETWEEN	SPEARMAN R VALUE	P VALUE
HDRS AND AIFQ 5 TOTAL SCORE	-0.5924	< 0.0001
HDRS AND AIFQ 5 Q.1	-0.5311	< 0.0001
HDRS AND AIFQ 5 Q.2	-0.5062	< 0.0001
HDRS AND AIFQ 5 Q.3	-0.5804	< 0.0001
HDRS AND AIFQ 5 Q.4	-0.4321	0.0006

As shown there was a negative correlation found between HDRS scores and AIFQ 5 (feedback offered by caregivers) total as well individual scores. A significant negative association was found between HDRS score and caregiver indicating that current stressor is unlikely to lead to problems and is also unlikely to cause problems in other areas of their life. Also similar negative association was seen between HDRS score and caregivers indicating that current stressor is unlikely to lead to negative things in other areas of their patient's life and is unlikely to mean that their patient is flawed in some way.

CONCLUSION

Inadequate social support not only makes a person vulnerable for the development of depression but also increases the risk for recurrence and prolonged duration of depressive episodes. For example, as per a study by Ezquiaga, Garcıa, Pallares, and Bravo (1999), individuals who were currently or previously depressed reported lower levels of social support, less frequent contact with others, and greater feelings of hopelessness.[13,14] In addition, in another study by Cutrona (1986), positive feedback from a supportive other was associated with a decrease in depressive mood after a negative life event.[15] This was seen in our study where there was a negative correlation found between HDRS scores and AIFQ 4 and 5 total as well individual scores. Also there was a significant difference in the total and individual scores of AIFQ 4 and 5 between cases and controls. Individuals who attribute the cause of important negative events to stable, global factors and infer that the negative event implies negative future and negative meaning about the self, are said to have a "depress genic inferential style", as per Abramson et al. (1998). This was also seen in our study where a significant negative association was found between HDRS score and patients' feeling that their caregivers said that current stressor is unlikely to lead to or cause problems in other areas of their lives. Also a significant negative association was seen between HDRS score and patients' feeling that their caregivers said that current stressor is unlikely to lead to negative things in other areas of their lives and is unlikely to mean that they are flawed in some way. Similarly, a significant difference was seen between individual and total scores of treatment resistant cases and non-treatment resistant controls in the AIFQ 4 and 5 questions related to the above statements. This showed that the cases received more maladaptive feedback and had higher HDRS scores as compared to controls who had lower HDRS scores and more adaptive inferential feedback. Also it meant that cases perceived more maladaptive feedback whereas controls perceived more adaptive feedback. This depress genic inferential style is considered the diathesis in the diathesis-stress component of the Hopelessness Theory of Depression Model and a distal cause of depression. Thus, our findings were corroborated with another study wherein it was found that individuals with a depress genic inferential style were more vulnerable to developing hopelessness depression because they were more likely to make negative inferences regarding cause, consequence and meaning about the self when faced with a stressful situation(Abramson et al., 1998; Abramson et al., 1989; Panzarella & Alloy, 1995). Similar results have been obtained in other studies which have reported that a depress genic inferential style is predictive of more severe depressive moods following a negative event than a non-depress genic inferential style(Abramson et al., 1989). Similarly, Stiensmeier-Pelster (1989) reported that individuals who attributed negative events to internal causes became more depressed following the negative event.[18] According to a study, receiving adaptive inferential feedback was associated with less stress or fewer negative life events(DeFronzo, Panzarella, & Butler, 2001). Subjects identified as having a depress genic inferential style did report receiving less adaptive inferential feedback than subjects with a nondepresso genic inferential style. In the same study, the more adaptive inferential feedback individuals received, the less likely they were to make maladaptive inferences in response to an actual negative life event. In addition, an interaction between adaptive inferential feedback, inferential style and stress significantly predicted hopelessness, self-reported depressive symptoms, number of depressive episodes and number of Hopelessness Depression episodes(DeFronzo et al., 2001). In our study, a significant negative correlation was seen between HDRS scores and AIFQ 4 and 5 total and individual scores implying that lower AIFQ scores (which indicated maladaptation) were associated with high HDRS scores i.e severe depression. Also the treatment resistant cases were offered adaptive inferential feedback statements lesser number of times as compared to controls. Also more number of controls (63.33%) felt better after the feedback as compared to cases who ended up feeling worse or same

(66.67%). These findings are in sync with Alloy, Just, and Panzarella (1997) who proposed three possible points of impact for the effect of social support and adaptive inferential feedback on the onset and maintenance of depression(Alloy et al., 1997; Panzarella & Alloy, 1995). First, social support may decrease the possibility of developing hopelessness by decreasing the number and severity of negative life events. Second, adaptive inferential feedback may decrease vulnerability to hopelessness symptoms by obstructing the development and maintenance of depress genic inferential styles. Challenging depress genic inferences and negative cognitions with adaptive inferential feedback may lead to changes in inferential style over time. Third, adaptive inferential feedback may decrease the likelihood of making maladaptive inferences regarding a particular stressor, regardless of the presence of a depress genic inferential style or general tendency to make negative inferences(Alloy et al., 1997; Panzarella & Alloy, 1995).

Thus, we can conclude that people with treatment resistant depression perceived as well as received more maladaptive inferential feedback from their caregivers. And Adaptive inferential feedback was negatively associated with the severity of depression. This implies that caregivers should be targeted for interventions like training them in adaptive inferential feedback so as to improve their feedback prospectively to decrease depress genic inferential styles and depressive symptoms in their patients.

This study however had few limitations. As it was conducted at a tertiary hospital, it may not have been representative of the general population. And as this was not a longitudinal study, it is difficult to actually evaluate the inferential feedback occurring as the course of illness progresses.

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