SOCIAL NETWORKING OF DEPRESSED AND NON-DEPRESSED FEMALE COLLEGE STUDENTS

By

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ABSTRACT

The present study aimed at examining the interpersonal aspects of depression among female college students. A sample of 60 undergraduate female college students (50 pairs: 25 depressed and 25 non-depressed subjects along with their best friends) was drawn from Government Degree College for Women, Multan. Beck Depression Inventory (Beck et al., 1961) was administered to both the depressed and non-depressed subjects along with their best friends (i) to fill it out for themselves, (ii) to fill it out for as would their friends (iii) and to fill out for, as would the average person. Statistical analysis showed that the best friends of depressed subjects were significantly more depressed than the best friends of non-depressed subjects. Results also suggested that depressed subjects perceived their best friends and the average persons to be more depressed as compared to the non-depressed subjects. No significant differences were found between actual and perceived scores of best friends of both the depressed and non-depressed subjects. Also, no significant differences were found between best friend's perception and actual scores of depressed and non-depressed subjects. Keywords: Adolescence, Social Interaction, Friendship, Depression.

INTRODUCTION

Depression is often an indicative of a more generally distressed interpersonal context. Depression creates many interpersonal problems with strangers and friends as well as with family members. The study of the interpersonal aspects of depression is an analysis of social networks of depressed persons. These social networks are usually composed of depressed others. Depressed people have different interpersonal preferences than do nondepressed people; it is also possible that they react to others, specifically depressed people differently than do non-depressed people (Beach, Sandeen, & O'Leary, 1990). Depressed people are generally viewed as dissimilar and that this perceived dissimilarity contributes to negative reactions to the depressed. Non-depressed people prefer non-depressed targets and perceive them as more similar than depressed targets, and that this preference for non-depressed targets is not shared by depressed subjects. They prefer to choose depressed others as their partners, this may be because depressed person views the whole world as similar to him. He feels and perceives worse in general (Hammen, 1985).

A better-validated theory attributes depression to processes of reinforcement and social interaction. Depressed people often have especially high frequencies of unpleasant, unrewarding events in their lives; depressed people also experience these adverse events as more unpleasant than do non-depressed people (Lewinsohn & Talkington, 1979). Because of the low level of the reinforcement they have received, depressed people tend to invest less hope and less energy in their activities, including their social interaction. This, in turn, makes them less rewarding to be around. Thus others tend to avoid depressed people, and this, in turn, depends on their depression (Lewinsohn & Arconad, 1981).

A great deal of attention has recently been focused on the study of the interpersonal aspects of depression. There is, nevertheless, still no clear picture as to how and even, whether, the interpersonal world of the depressed person contributes to the etiology and maintenance of his or her depression. Learning theory has an important contribution

to this idea by looking at the depressed people objectively and making it possible to accurately communicate a description of their behavior as well as the circumstances in which it occurs. Learning theorists see depression as a function of inadequate or insufficient reinforcement or as a lack of contingency or relationship between reinforcement and particular kind of behavior (Billings, Cronkite, & Moos, 1983).

Once a person has become depressed, Lewinsohn (1981) believes, the depression is maintained because other people find depressed people unpleasant to be with. Acquaintances tend to avoid the depressive as much as possible and thus further decrease the person's rate of reinforcement, in effect, intensifying the depression (Sarson & Sarson, 1980).

Coyne (1976) theoretically, posited that depressed people become enmeshed in a system of depressive symptomatology and response from others. Stated simply, the depressed person needs and searches out support, but engage others in such a way that they reject the person. This rejection is subtle: The depressed person elicits guilt in other people, and therefore rather than respond with overt hostility, these people provide nongenuine support and reassurance. The depressed person notices that his or her friends are behaving in a rejection way but are still verbally reassuring. Eventually the depressed person becomes certain that he or she is indeed not accepted and attempts to control the behavior of others and elicit support by displaying more symptoms and conveying more distress. The end result is a downward spiral in the depressed person's condition (Davison, Neale, & Kring, 2004).

Depressed people have a higher occurrence of unpleasant events in their lives and they also experience these events as more unpleasant than do non-depressed people. This greater negative response has been demonstrated not only by asking people to rate unpleasant events but also in the laboratory. The autonomic responsiveness of depressed and non-depressed groups was compared following aversive stimulation in the form of mild electric shocks. The depressed group responded more (higher skin reactions)

to the aversive stimuli than the non-depressed group did. This result might reasonably lead one to expect the depressed individual to show a greater than usual tendency to withdraw from situations that he or she found unpleasant. This withdraw would have the effect of decreasing the depressed person's chances for reinforcement. Treatment of depression based on learning model usually involves some method for increasing reinforcements received for non-depressed behavior. Increasing the number of pleasant events by assigning the depressed person a schedule of tasks is one way to do this. After determining which events are pleasant, the therapist may assign the clients daily quota of enjoyment which he or she must seek out (Sarson & Sarson, 1980)

According to the behavioral theory, it has been suggested, that the depressed have received less positive reinforcement for their behavior than other people. Indulgence in pleasant activities can be said to generate positive reinforcement. Libet and Lewinsohn (1973) based their argument on a pleasant event schedule containing three hundred and twenty events. Older people proved to have participated in such pleasant activities less than younger people, and the depressed less than the non-depressed. Among the depressed a lower pleasant activity level also meant that the participant was finding the activities less satisfying. And it is, of course, just this combination lower satisfaction and fewer activities that is symptomatic of depression. The research finding when further investigated showed that when depressed subjects were asked to select partners for these activities, they preferred to select those partners who are themselves more depressed, than the nondepressed subjects. Thus the depressed patients develop them selves to the kind of activities in which they seek contact with other who are depressed too: the nondepressed on the other hand devoted themselves to the activities that depend on contact with others who are non-depressed (Beck, 1983).

A fundamental question has been that why people would find depressed people aversive. One suggested solution to this problem has been that depressed people engage

in behaviors that others find aversive (Seligman, 1974) Research to date has, however, been equivocal on this matter. Some findings have failed to find differences in the verbal or behavioral productions of depressed people when compared with non-depressed people. Other studies, however, have found some differences both in actual behavior and in how depressed people perceive their interpersonal behaviors. To explain such conflicting results, it has been suggested that depressed people may respond differently to varying social contents, with a great likelihood of engaging in aversive behaviors occurring in intimate relationships. In fact, research has addressed the reactions of those who live with depressed people by studying their spouses and by studying their roommates (Coyne, 1976).

Most of the work on the interpersonal aspects of depression has focused on these issues. One assumption of this work is that depressed people function in a social environment in ways different from those of non-depressed people. It is equally possible that depressed people do actively structure or change their social relationships in unique and different ways that may contribute to their depression. To explore this issue, the interpersonal perceptions of the depressed person need to be systematically studied with respect to how they react to different types of people. The point is that the social likes and dislikes of depressed people are just as important components of the depressed person's social world as how they are reacted to by others (Rosenblatt & Greenberg, 1988).

Research examining the social preferences of depressed people is sparse. There is some evidence that depressed people may prefer the company of other depressed people. Finally, it was found that subjects whose mood states has been temporarily depressed preferred subsequently to work with a happy person but were more willing than non-depressed subjects to work with another whom they thought was also feeling sad. Other studies have looked more specifically at the social perceptions of depressed people (Billings et al., 1983).

Rosenblatt and Greenbreg (1988) found that the social perceptions of depressed people are in some ways

different from the social perceptions of non-depressed people. Specifically, depressed subjects did not share non-depressed subjects preference for non-depressed targets. Furthermore, differences in perceived similarity seemed to mediate this effect. Non-depressed subjects perceived depressed others as dissimilar, but depressed subjects did not. In contrast to Coyne (1976), it was thus found that depressed people feel more anxious interacting with non-depressed people. Perhaps the similarity attraction relationship can account for these results. Perhaps depressed people perceived themselves to be more similar to other depressed people than non-depressed people.

Evidence shows that the depressed person's close and immediate social network possibly predominantly consists of more depressed people than a non-depressed person's social network. If so, depressed people may find their problems exacerbated and maintained by their social relationships with other depressed people. Furthermore, because people like to compare themselves with similar and available others as a mean of determining what are appropriate beliefs, attitudes, and actions, depressed people may choose to affiliate with one another and reinforce each other's depressed tendencies (Festinger, 1954).

Keeping in mind the importance of interpersonal aspects of depression, an attempt was made to examine the friendship patterns of depressed and non-depressed people. The purpose was to see whether the social networks of the depressed people are more predominantly composed of depressed others than the non-depressed people. Following hypotheses were formulated

- Depressed subjects will have best friends who are depressed more often than that of the non depressed subjects.
- Depressed subjects as compared to non-depressed will perceive their best friends as being more depressed.
- Depressed subjects as compared to non-depressed will perceive the average person to be more depressed.
- There will be no difference between the actual and

perceived scores of best friends of both the depressed and non-depressed subjects.

There will be no difference between the best friend's perception and actual scores of both the depressed and non-depressed subjects.

Method

Sample

The sample consisted of 60 female college students (30 pairs: 15 depressed and 15 non-depressed students along with their best friends) taken from Government Degree college for Women, Multan. The subjects were matched on the variables of education, single marital status and sex. Purposive random sampling technique was used to select the participants.

Instrument

Beck Depression Inventory (BDI)

The Beck Depression Inventory developed by Beck, Ward and Mendelson (1961), is a 21 item self-report scale presented in multiple choice format, which purports to measure the presence and degree of depression. Each item is rated on a 4-point scale ratting from 0 to 3. The BDI is scored by summing the ratings for the 21 items. The highest possible total for the whole test would be 63. Scores of 10 or bellow on BDI indicate no signs of depression and the scores of 11 or above on BDI are considered as presence of depression. The test-retest reliability for BDI range from 0.48 to 0.86 and concurrent validity for BDI range from 0.62 to 0.66.

Procedure

100 under graduate female college students and their best friends from Government Degree College for women, Multan were given the Beck Depression Inventory (BDI). From this pool, experimenter contacted high BDI score subjects and low BDI score subjects. On the basis of these scores, subjects were assigned either the depressed or non-depressed conditions. Depressed subjects were defined as those who scored 11 or above and nondepressed were defined as those who scored 10 or below. Both the subjects and their friends were given the BDI to fill out for themselves, to fill out as would their friends and to fill out for an average person would be. In the sense, both the

depressed and non-depressed subjects had responded to BDI for three times; for own selves, for their best friends, and for average persons. All the subjects voluntarily participated in the research and confidentiality was assured to them. After the completion of data collection, the whole information was statistically analyzed.

Results

Using SPSS (Statistical Package for Social Sciences), t-test was used to investigate the significance of differences between scores of best friends of depressed and nondepressed subjects along with the depressed and nondepressed subject's perception about their best friends and the average persons.

The results in Table 1 suggest that reported scores of best friends of depressed are significantly higher than the scores of best friends of non-depressed subjects. It indicates that depressed subjects have best friends who are also depressed than that of non-depressed subjects.

Results from Table 2 suggest that the reported scores of depressed subject's perception about their best friends are significantly higher than the scores of non-depressed subject's perception about their best friends. It means that depressed subjects perceive their best friends as depressed as they are.

Results from Table 3 suggest that the reported scores of depressed subject's perception about average person are significantly higher than scores of non-depressed

Group	M	SD	t	р
Best	23.14	9.29	6.724	0.02*
Best friends of	6.34	2.72		
			df =	48. *p < 0.05

Table 1. Means, Standard Deviations and t-value for scores of the Best Friends of Depressed and Best Friends of Non-Depressed Subjects on BDI (N = 25, 25)

Group	М	SD	t	р
Depressed subject's perception about their best friends	22.2	8.08	5.045	0.00**
Non-depressed subject's perception about their best friends	9.94	4.84		3.30

df = 48, *p < 0.05, ***p < 0.001

Table 2. Means, Standard Deviations and t-value for the Scores of Depressed and Non-Depressed Subject's Perception about their Best Friends on BDI (N=25, 25)

subject's perception about average person. It means that depressed subjects perceive average persons as depressed as they are.

Results from Table 4a suggest that the reported scores of depressed subject's perception about their best friends are not significantly different from the actual scores of their best friends. It means that depressed subject's perception about their best friends is equal to the actual scores of their best friends.

Results from Table 4b suggest that the reported scores of non-depressed subject's perception about their best friends are not significantly different from the actual scores of their best friends. It means that non-depressed subject's perception about their best friends is equal to the actual scores of their best friends.

Findings from Table 5a suggest that the reported scores of

Group	М	SD	t	р
Depressed subject's perception about their best friends	23.2	11.55	2.469	0.03*
Non-depressed subject's perception about their best friends	13.67	9.49		

df = 48, *p < 0.05

Table 3. Means, Standard Deviations and t-value for the Scores of Depressed and Non- Depressed Subject's Perception about the Average Person on BDI (N=50)

Group	М	SD	t	р
Depressed subject's perception about their best friends	22:2	8.08	-0.294	0.09
Non-depressed subject's perception about their best friends	23.14	9.30	0.274	0.07

df = 48, p = non-significant

Table 4a. Means, Standard Deviations and t-value for the Actual Scores of Best Friends and Scores of Depressed Subject's Perception about them on BDI (N = 50)

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Group	М	\$D	t	р
Non-depressed subject's perception about their best friends	9.26	5.06	1.177	0.08
Actual scores of best friends of non-depressed subjects	8.33	2.72	1.177	0.06

df = 48, p = non-significant

Table 4b. Means, Standard Deviations and t-value for the Actual Scores of Best Friends and Scores of Non-Depressed Subject's Perception about them on BDI (N=50)

depressed subjects are not significantly different from their best friend's perception about them. It means that depressed subject's perception about their best friends is equal to the actual scores of their best friends.

Findings from Table 5b suggest that the reported scores of the perception of best friends of non-depressed subjects are not significantly different from the actual scores of non-depressed subject

Discussion

The present research was an attempt to examine the interpersonal aspects of depression. The purpose is to investigate whether depressed people prefer others who also tend toward depression. The research findings are based on the responses of 60 undergraduate female college students (50 pairs: 25 depressed and 25 nondepressed students along with their best friends). It is confirmed in the study, that the best friends of depressed people did indeed score higher on a measure of depression than did the best friends of non-depressed people. This suggests that the reported depression scores in best friends of depressed subjects are significantly higher than the scores of non-depressed subject's best friends. This may coincide with Festinger's theory (1954) of social comparison. According to this theory when objective means of evaluating one's ability or attitudes are not available, one needs to rely on social reality for

Group	М	SD	t	р
Actual scores of depressed subjects	25.8	8.79		
Scores of best friend's perception about the depressed subjects	23.06	5.22	1.293	0.07

df = 48, p = non-significant

Table 5a. Means, Standard Deviations and t-value for the Actual Scores of Depressed Subjects and Scores of Their Best Friend's Perception about Them on BDI (N=50)

Group	M	SD	t	р
Actual scores of non-depressed subjects	7.66	2.90		
Scores of best friend's perception about the non-depressed subjects	6.94	4.56	0.526	0.08

df = 48, p = non-significant

Table 5b. Means, Standard Deviations and t-value for the Actual Scores of Non-Depressed Subjects and Scores of their Best Friend's Perception about them on BDI (N=50)

evaluation. This means that one must compare oneself with others to obtain some level of self-evaluation. Generally, people refer to compare themselves with others who have similar attitudes and abilities. So, depressed people may choose to affiliate with another and reinforce each other's depressed tendencies. Brickman and Bulman (1977) also suggest that for depressive the avoidance of people who are doing well may occur when it is thought that the comparison might provide unfavorable information. They may feel threatened by others who are better off and, as a result, choose to avoid such people and seek out others who appear to be doing the same or worse than they are. According to Coyne (1976) non-depressed people feel more anxious and hostile in the presence of depressed people and would therefore reject them. So, the nondepressed people may tend to seek out and maintain friendship with other non-depressed people: therefore their best friends would likely be non-depressed. This preference, however, would leave the depressed person in a disadvantage with respect to gaining non-depressed friends. This would rather leave the depressed in a social network of only depressed people all around. The research findings of Rosenblatt and Greenberg (1991) also suggests that depressed subjects have best friends who are themselves more depressed than the best friends of non-depressed subjects.

According to the research findings, depressed subjects as compared to non-depressed perceived their best friends as being more depressed i.e. the reported scores of depressed subject's perception of best friends are significantly higher than the non-depressed subject's perception's of their best friends. This may be simply because of that fact, as explained by Beck (1961), that the dominating characteristics of depressive personality is a negative view of him, the world and the future: he practices overgeneralization, minimization of the positive and maximization of the negative. In general, people tend to believe that there is high consensus for their own attributes (i.e. the false-consensus effect). That is, people tend to see any behavior or trait they possess as relatively common behavior they do not possess as relatively

unique. As like attracts like i.e. when people resemble you in the same way you are attracted to them. Like anxious people are attracted to similar people, in the same way depressed people find other depressives to be attractive and thus to be their friends (Freden, 1982).

The results also indicated that the depressed subjects as compared to the non-depressed did perceive the average person to be more depressed i.e. the reported scores of depressed subject's perception of the average person are significantly higher than the non-depressed subject's perception of the average person. This may have resulted from a false-consensus bias. People in general tend to believe that there is higher consensus (false consensus) for their own attributes. Thus for depressed people everyone else is also depressed. This result is also in accordance with the research findings of Tabachnick, Crocker and Alloy (1983). Depressed and non-depressed college students were asked about the extent to which depression relevant and depression irrelevant attributes were true of themselves and true of the average college students. The depressed subjects perceived the average person to be depressed too. This may be because the depressed person views the whole world as similar to him. He feels and perceives worse in general. Also according to the research findings of Ross, Greene and House (1977), depressed subjects think others would choose the same response as themselves in a particular situation.

According to research finding no significant difference was found between the actual and perceived scores of the best friends of both the depressed and non-depressed subjects. Also, no significant difference was found between the best friend's perception and the actual scores of both the depressed and non-depressed subjects. The similarity attraction relationship can account for these results. The depressed people perceived themselves to be more similar to other depressed people than non-depressed.

The present research attempts to examine the interpersonal world of the depressed. It is quite possible that depressed people do actively structure of change their social relationships in unique and different ways that

may contribute to their depression. The point is to see whether the interpersonal world of depressed person contributes to the etiology and maintenance of his or her depression. Although the results of the present research are most clearly applicable to those experiencing symptoms of depression, similar phenomena may also occur in people with other disorder and emotional states. This is especially likely, given that a wide verity of clinical subpopulations may exhibit elevated score on the BDI. It also may simply be that people experiencing any form of psychological distress would react negatively to conversation with a novel other who is not exhibiting such distress. Clearly only future result that includes a variety of carefully diagnosed clinical samples can determine the extent to which these findings reflect a general phenomenon rather than one specific to depression. Thus the current research indicated that one could expect the same type of social comparisons to occur in other clinical groups or emotional sates. For example, one can hypothesize that people suffering from anxiety, low selfesteem, or other uncomfortable emotional states would also prefer comparisons with others suffering from similar states.

The result of this study provide further evidence that, as would be true for most people, the role of the depressed persons in selecting their interpersonal world is at least as, if not more, important than the role of people around the depressed. The depressed person may differently respond to different types of people and that the depressed person may operate in a more depressed social world of their choosing. Thus, rather than viewing depressed people primarily as victims of the reactions and preferences of other, it may be more profitable to view them as active social participants who mold their social world just as much as they are more molded by them.

Conclusion

The purpose of this study was to examine the interpersonal aspects of depression among female college students. The result of this study provide further evidence that, as would be true for most people, the role of the depressed persons in selecting their interpersonal world is at least as,

if not more, important than the role of people around the depressed.

References

- [1]. Beach, S. R. H., Sandeen, E. E., & O'Leary, K. D. (1990). Depression in marriage. New York: Guilford.
- [2]. Beck, A. T., Ward, Mendelson, Mock & Erbaugh, (1961). Cognitive therapy. In H.I/ Kaplan and J. Sandock (Eds), Comprehensive Text of Psychiatry (4th ed). Baltimore: Williams and Wilkins.
- [3]. Beck, A. T. (1983). Cognitive theory of depression: New perspectives In P.J. Clayton, and J.E. Barrett (Eds.), *Treatment of depression: Old controversies and new approaches* (pp.265-190). New York Raven Press.
- [4]. Billings, A. G., Cronkite, R. C., & Moos, R. H. (1983). Social-environmental factors in unipolar depression: Comparisons of depressed patients and nondepressed controls. *Journal of Abnormal Psychology*, 92, 119–133.
- [5]. Brickman, P., & Bulman, J. (1977). Social Comparison Processes. *Psychological Review*, (pp.174-186). Washington, DC: Hemisphere.
- [6]. Coyne, J. C. (1976). Toward an interactional description of depression. *Journal of Clinical Psychiatry*, 39, 14-27.
- [7]. Davison, G., Neale, J., Kring, A. (2004). *Abnormal Psychology.* United States of America: John Wiley & Sons, Inc.
- [8]. Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7,117-140.
- [9]. Freden, L. (1982). Psychological Aspects of Depression. (pp.15-17, 79-83). New York: John Wiley and Sons.
- [10]. Hammen, C., Marks, T., & de Mayo, R., (1985). Depressive self-schema, life stress, and vulnerability to depression. *Journal of Abnormal Psychology*, 94,308-319.
- [11]. Lewinsohn, P. M., & Talkington, J. (1979). Studies on the measurement of unpleasant events and relations with depression. *Applied Psychological Measurement*, 3, 83-101.
- [12]. Lewinsohn, P. M., & Arconad, M. (1981). Behavioral

treatment in depression; A Social learning approach. In J.F. Clarkin and H.I.Glazer (Eds.), *Depression. Behavioural and Directive intervention strategies*. New York: Garland STPM Press.

- [13]. Libet, J. M. & Lewinsohn, P. M. (1973). Concept of social skill with special reference to the behavior of depressed people. *Journal of Consulting and Clinical Psychology*, 40, 304-312.
- [14]. Rosenblatt, A., & Greenberg, J. (1988). Depression and interpersonal attraction: The role of perceived similarity. *Journal of Personality and Social Psychology*, 55,112-119.
- [15]. Rosenblatt, A., & Greenberg, J. (1991). Examining the world of the depressed: Do depressed people prefer those who are depressed? *Journal of Personality and*

Social Psychology, 60, 620-629.

- [16]. Ross, I., Greene, D., & House, P. (1977). The false consensus phenomenon: An attributional bias in itself perception processes. *Journal of Experimental Social Psychology*, 13,279-301.
- [17]. Sarson, I. G., & Sarson, B. R., (1980). Abnormal Psychology (pp.249-276) New Jersey: Prentice Hall, Inc.
- [18]. Seligman, M. E. P. (1974). Depression and learned helplessness. In R. J. Friedman & M. M. Katz (Eds.) The psychology of depression; Contemporary theory and research. Washington, DC: V. H. Winston.
- [19]. Tebachnik, N. Crocker, J., & Alloy, L. B.(1983). Depression, social comparison and false consensus effect. *Journal of Personality and Social Psychology*, 45,688-699.

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