

Effect of Resilience and Social Support on Immune - Activation in HIV Positive People

Hena Khan¹

ABSTRACT

Acquired immunodeficiency syndrome (AIDS) is caused by Human Immunodeficiency Virus (HIV). It is a disease of human system in which body's normal defense system breaks down. Immune –activation has emerged as a critical factor distinguishing pathogenic immunodeficiency virus infections – such as HIV infection. The level of social support given to an individual during a health crisis has been documented to have a profound impact on a person's physical and psychological well-being. The capacity to cope and feel competent is referred to as resilience. Psychological resilience refers to an individual's capacity to withstand stressors and manifest psychological dysfunction, such as mental illness or persistent negative mood. This study examines the effect of hardiness dimensions of commitment, challenge and control as resilience factors and social support on immune-activation among persons with symptomatic HIV disease and AIDS. The study has been conducted at ART Centre Department of Medicine, S.S. Hospital Banaras Hindu University Varanasi. Total samples of 40 HIV positive people in the age range of 21 to 55 years have been taken for the study. Dispositional Resilience (Hardiness) Scale is a self-report scale that is designed to measure three major components of hardiness (control, commitment and challenge) constructed by Bartone, P.T.(1989) and Multidimensional scale of social support constructed by Zimet, Dahlem, Zimet and Farlay (1988) were administered on the sample. The finding indicated that HIV positive people having high hardiness, gain more social support and their Immune-activation has been found also in increased level.

Keywords: Resilience, Social Support, Immune Activation, HIV/AIDS.

INTRODUCTION:

Acquired immunodeficiency syndrome (AIDS) is caused by Human immunodeficiency virus (HIV). It is a disease of human immune system in which the body's normal defense system breaks down. By killing or damaging cells of the body's immune system, HIV progressively destroys the body's ability to fight infection. The term AIDS applies to the most advanced stage of HIV infection. More than 700,000 cases of AIDS have been reported in the United States since 1981, and as many as 900,000 Americans may be infected with HIV. The epidemic is growing most rapidly among women and minority populations (CDC, 2000).

¹Assistant Professor, Department of Psychology, Faculty of Social Sciences, R.T.M. Nagpur University, Nagpur, Maharashtra

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HIV spreads most commonly by having sex with an infected partner. HIV also spreads through contact with infected blood, which frequently occurs among drug users who share needles or syringes contaminated with blood from someone infected with the virus. Woman with HIV can transmit the virus to their babies during pregnancy, birth or breast feeding. Many people do not develop any symptoms when they first become infected with HIV. Some people, however, have a flu-like illness within a month after exposure to the virus. More persistent or severe symptoms may not appear for a decade or more after infection. This period of 'asymptomatic' (without symptoms) infection is highly individual. During this asymptomatic period the virus is actively multiplying, infecting and killing cells of the immune system and people are highly infectious. As the immune system deteriorates, a variety of complication start to take over, for many people their first sign of infection is large lymph nodes or swollen glands that may be enlarged for more than three months. Other symptoms often experienced months to years before the onset of AIDS include: lack of energy, weight loss, frequent fever and sweats, persistent or frequent yeast infections (oral or vaginal), persistent skin rashes or flaky skin, pelvic inflammatory disease in women that does not respond to treatment and short term memory loss. Many people are so debilitated by the symptoms of AIDS that they cannot hold steady employment nor do household chores. Other people with AIDS may experience phases of intense life- threatening illness followed by phases in which they function normally. India is one of the largest and most populated countries in the world, with over one billion inhabitants, of their number it's estimated that around 2.3 million people are currently living with HIV (NACO, 2004). HIV had now spreads extensively throughout the country. In 1990 there had been tens of thousands of people living with HIV in India, by 2000 this had risen to millions (NACO, 2004). In 2006, UNAIDS estimated that there were 5.6 million people living with HIV in India, which indicated that there were more people with HIV in India than in any other country in the world (UNAIDS, 2006). In 2007, following the first survey of HIV among the general population, UNAIDS and NACO agreed on a new estimate between 2 million and 3.1 million people living with HIV (UNAIDS, 2007). In 2008, the figure was confirmed to be 2.5 million which equates to a prevalence of 0.3%, while this may seem a flow rate, because India's population is so large, it is the world in terms of greatest number of people living with HIV. As the society knows the sero-status of a person, suddenly its behaviour changes towards that particular person and such type of condition affects a person's life and health status so there is a positive relationship between social support and health outcomes (Mindal & Wright 1982, Smith, Ruiz 1985, Taylor & Chatters 1986).

Social Support

Social support is very important especially for those persons who are suffering of high level of stress problem. Obviously AIDS patients are among those. These people know very well that they are running against their death. It is only the matter of time, how sooner or later it will be. At this phase of life social support and resilience have a vital effect on patient's immune system and improve their mental health and well-being. Social support has numerous ties to physical health, including mortality. People with low social support are at a much higher risk of death from a variety of diseases. Walther and Boyd (2002) define social support as "The exchange of verbal and non-verbal messages conveying emotion, information, or referral, to help reduce

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one's uncertainty or stress." In sum, social support refers to helping the individual alleviate uncertainty or stress by conveying the emotion, information, or referral to the recipient. Moreover, Albrecht and Adelman (1987) define "social support" as "Verbal and nonverbal communication between recipients and providers that reduces uncertainty about the situation, the self, the other, or the relationship, and functions to enhance a perceptions of personal control in one's experience."

According to House, (1988) social support can be subdivided into the concepts of social integration, social network, and relational content. Social integration is the existence or quantity of social relationships, which includes the number of friends and relations and the frequency of contact with these people. The number of active social ties determines one's degree of embeddedness in a social network, with social isolation constituting one extreme end point. Social network is the structure that characterizes a set of relationship. Network density, reciprocity, gender composition, homogeneity, and durability are structural properties of a social network. The presence of women in a network, for example, might be regarded as an advantage in coping with stress because on an average, women are perceived as more supportive than men (Schwarzer, Dunkel, Schetter and Kemeny, 1994). Relational content is the function and nature of social relationship with various sources such as a spouse, a supervisor, friends, or relatives. It includes supportive interaction defined as the positive potentially health promoting or stress-buffering aspects of relationships (House, 1988).

There are four common types of social support:

- Emotional support: It is the offering of empathy, concern, affection, love, trust, acceptance, intimacy, encouragement, or caring. It is the way to tell a particular person that someone is standing by him in his need. Through this support an individual feels that he is also a part and parcel of society and not ignored. It is also sometimes called esteem support or appraisal support.
- Tangible support: In this materialistic world economical support matters most for the person who is suffering from mental stress, health problem as well as economical problem. No matter how crucial your problem is. Nobody is going to listening you if you are in want of money. The provision of financial assistance, material goods, or services is known as tangible support or instrumental support. This form of social support encompasses the concrete, direct ways people assist others.
- Informational support: It is the provision of advice, guidance, suggestions, or useful information to someone. This type of information has the potential to help others problem-solve.
- Companionship support: It is the type of support that gives someone a sense of social belonging. This can be seen as the presence of companions to engage in shared social activities. Researchers also commonly make a distinction between perceived, received support and provided social support.
 - Perceived support refers to a recipient's subjective judgment that providers will offer (or have offered) effective help during times of need.

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- Received support (also called enacted support) refers to specific supportive actions (e.g., advice or reassurance) offered by providers during times of need.
- Provided social support refers to the support given by caregivers. They may be professionals, friends or family members.

The evidence that social support inhibits the development of disease is equivocal (Cohen 1988, House 1988, Rodin & Solovey, 1989). The link between social support and psychological health is stronger than the link between social support and physical health (Ganster and Victor 1988, Green 1994). For example social support is significantly associated with well-being and the absence of psychological distress in normal community samples (Kessler and McLeod 1985). Social support affects health through biological, psychological and behavioral mechanisms. Ultimately the impact of social support on physical health and to some extent on psychological health is transmitted through biological and to some extent on psychological health is transmitted through biological mechanisms. The level of social support given to an individual during health crises has been documented to have a profound impact on a person's physical and psychological well being (Barroso, 1997).

Resilience

The capacity to cope and feel competent is referred to as resilience. *Psychological resilience* is defined by flexibility in response to changing situational demands, and the ability to bounce back from negative emotional experiences (J. H. Block & Block, 1980; Block & Kremen, 1996; Lazarus, 1993). Mental health is a fundamental element of the resilience, health assets, capabilities and positive adaptation that enable people both to cope with adversity and to reach their full potential and humanity. Notably, trait-resilient individuals experience positive emotions even in the midst of stressful events, which may explain their ability to rebound successfully despite adversity. This suggests that trait-resilient people may understand the benefits associated with positive emotions and use this knowledge to their advantage when coping with negative emotional events (Tugade & Fredrickson, 2002; 2004).

Everyone experiences stress at one time or another – from major events such as the death of a loved one, to more minor stressors such as financial difficulties. Not surprisingly, exposure to stress is generally associated with a wide range of negative outcomes including decreased well-being, increased incidence of disease, Post-Traumatic Stress Disorder, Generalized Anxiety Disorder, and Major Depressive Disorder (Monat, Lazarus, & Reevy, 2007). However, not all individuals who are exposed to even high levels of stress develop such negative outcomes. Resilient person seem to do well in life, appearing to have the ability to bounce back and cope well in the face of profound problems. In fact, recent evidence suggests that a considerable number of individuals exhibit resilience, which is commonly defined as maintained or improved mental health in the face of stress, after short disruptions (if any) to normal functioning (Bonanno, 2005; Luthar, Cicchetti, & Becker, 2000). This definition, conceptualizes resilience as a potential outcome after exposure to stress rather than a psychological trait that leads to positive outcomes (cf. Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008).

Of course, the coping with HIV is normally related to how well the treatment is accepted. As mentioned above all the patients are taking medicines regularly. The patients, whose health is

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improving and feeling better due to the effect of medicine, do not need any type of counselling in this matter whereas the patients suffering from side effects hesitate in taking medicine or want to quit the treatment but because of strong adherence counselling they continue.

Social support has great role in preparing the patient to fight against HIV/AIDS. The patient, well supported by his spouse, family members, friends, colleagues etc, has great will power to fight against the disease for the sake of his/her life. This type of patients usually takes their medicines regularly. In lack of social support the patient has no charm in his/her life. She/he wants to get rid of the situation even at the cost of his /her life. These patients need strong counselling so that they take their medicine continuously.

No opportunistic infected patient has been selected in this study due to their severe condition, although opportunistic infections or other co morbidity can affect resilience.

When people gain appropriate support from society and family automatically they feel more competent themselves. It helps in building better resilience within the person. Thus such type of competency may affect the immunity power of an individual.

The aim of this study is to examine the relationship between social support and resilience among HIV positive people. And to examine the effect of resilience and social support on Immune-activation.

METHOD

Sample

The present study was conducted on a sample of 40 PLWHA whose age range was from 21 to 55. The mean age is 32.7, median age is 31 and range is 25 for men and for women mean age is 31.7, median age is 32 and range is 20. All the patients included in this study were taking ARV drugs or on anti-retro viral therapy (ART) from the duration of at least six months. Participants were taken from OPD of ART centre, IMS, BHU, Varanasi. The Purposive sampling technique was adopted in subject selection and this is because of the nature of the concept and subjects under consideration. Purposive sampling is.... Purposive sampling targets a particular group of people. When the desired population for the study is rare or very difficult to locate and recruit for a study, purposive sampling may be the only option. Inclusion criteria were age, present health status and no severe health, psychiatric and cognitive problem.

Apparatus

1. Multidimensional scale of social support constructed by Zimet, Dehlem, Zimet and Farlay, (1988) consisting 12 items. High score indicate high social support and Low score indicate low social support.

2. Dispositional Resilience (Hardiness) Scale is a self report scale that is designed to measures three major component of hardiness (control , commitment and challenge) constructed by Bartone, P.T. (1989).

Procedure

All the participants were informed about the purpose of the study. Consent of the subjects was sought after which the questionnaires were dropped for them to fill and picked up letter for coding and analysis. CD4 count of every individual was also noted down. CD4 cell counts, between the range of 600 to 1200

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shows the better immunity power, whereas 600 to 250 is moderate and below than 250 shows poor immunity. Data was analyzed by applying t-test, correlation and regression analysis.

RESULTS

Results obtained from this study indicate towards a significant association between social support, resilience and immunity of HIV positive people.

Table1: Coefficient of Correlation between social support and resilience.

	Resilience
Social support	.515**

** Correlation is significant at the 0.01 level (2-tailed).

Significantly higher correlation was obtained between social support and resilience. Table-1 indicate that both of measures are correlated ($p < .01$) with each other.

To observe the difference on social support and resilience t-test was applied. On the basis of gender and time duration of cases two separate tables formulated.

Table 2: Differences among HIV positive male and female on the measures of social support and resilience.

	Male (n=40)	Female (n=40)	t-value
Social Support	46.85 (19.00)	44.15 (18.89)	.451**
Resilience	29.05 (5.79)	29.55 (8.08)	-.225

Sig at $< .05^*$, $< .01^{**}$

Results of table 2 indicated that significant difference ($p < .01$) was obtained on the measure of social support between male and female. This trend of result indicates that gaining social support influenced by gender differences. Whereas, the resilience did not differ by the gender difference.

Table 3: Mean, SD and t-value of Differences among HIV positive new and old cases on the measures of social support and resilience.

	New cases (n=40)	Old cases (n=40)	t-value
Social Support	34.90 (14.12)	56.10 (16.91)	4.304**
Resilience	26.20 (4.36)	32.40 (7.72)	3.127**

Sig at $< .05^*$, $< .01^{**}$

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Results indicated of this third table that the new and old cases significantly differ on the measures on social support. It can be said that the PLWHA gain more social support with the passage of time. On other hand resilience also significantly differs. It means that time duration play an important role in becoming more resilient with HIV infection.

Further to know the contributing effect of social support and resilience on the level of immunity (CD4), liner multiple regression was run by taking social support and resilience as predictor and CD4 as criterion variable for total sample of HIV positive people.

Table 4: Prediction of CD4 in HIV positive people from social support and resilience.

Criterion Variable CD4						
Predictor Variables	R ²	Adjusted R ²	R ² Change	F Change	Beta	t-Value
Social Support	.439	.424	.439	29.699	.530	3.860**
Resilience	.487	.459	.048	3.498	.257	1.870*

**Significant at 0.01 level

* Significant at 0.05 level

Regression Analysis was conducted and result of table 4 revealed that social support and resilience predict the immunity in total sample. Social support account for 43.9 percent of variance in the scores of CD4. Whereas, resilience account for 4.8 percent of variance in the scores of CD4. Thus, a major portion of variance was contributed by social support. Positive beta value of both indicates its inverse correlation with CD4.

DISCUSSION

Present study was carried out to investigate the relationship between social support and resilience. And effect of both on immune-activation in HIV positive people. Most of the researches generally focused the role of social support in HIV- positive patients but major emphasis has been given on men. The major portions of current database of such researches are based on the researches done in the western world. But the findings from these researches cannot be generalized for a non-western world population and population at risk. There may be several reason non-applicability of these findings in current scenario. As most of the researches were conducted on HIV-positive gay men, women are mostly neglected or were included in less numbers.

Findings of the present study indicate towards a strong correlation between social Support, resilience and immune-activation.

Result indicated significantly higher correlation between social support and resilience. Significant difference ($p < .01$) was obtained on the measure of social support between male and female. This trend of result indicates that gaining social support influenced by gender

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differences. Whereas, the resilience did not differ by the gender difference. On the other hand the new and old cases significantly differ on the measures on social support. The PLWHA gain more social support with the passage of time. On other hand resilience also significantly differs. So it can be said that time duration play an important role in becoming more resilient with HIV infection. Result of regression analysis for the contributing effect revealed that social support and resilience predict the immunity in total sample.

There are some evidence that social support predicts mortality risks in adults of all ages (Berkman 1985, Cohen 1988, House 1988) and also facilitates recovery from illness (Wortman, 1984). As Gill Green (1993) also indicates that there are few studies which have considered the impact of social position on the relationship between social support and health. Whilst there is evidence of a link between social support and the psychological well-being of people with HIV, research is still in its infancy. Much information is required about which particular aspects of social support and health are associated. According to the findings of this study it can be said that there is need to provide more support because social support may play a small but potentially important role in helping HIV-positive people to become more resilient and adhere to the complicated schedules for taking their drug and for making better immunity to fight from infections and control the virus that causes AIDS.

Social support and resilience are deeply interconnected to each other and they also have great impact on either one. It is possible that due to the greater social support the resilience power increases. On the other hand if someone has better resilience power than before his social support may also increase.

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