Probabilistic Orientation and Resilience

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The effect of probabilistic orientation on resilience among graduate students and scientists was examined. Resilience connotes "bouncing back" to normalcy after facing negative events: an individual's capacity to withstand stressors and not to manifest psychological dysfunction, such as mental illness or persistent negative mood in spite of difficult circumstances. Probabilistic orientation refers to a typical phenomenological perspective ordaining the individual personality. The probabilistic orientation is construed by seven factors: Unbounded expectancy, Sensing unlimited possibilities, Insight into Bias, Healthy Skepticism, Unconditional Acceptance, Appreciation of chance, and Awareness of Probability. The sample consisted of 60 scientists and 65 graduates. They were administered the Probabilistic Orientation Questionnaire and the Resilience Scale for Adults. Criterion groups representing high and low levels of probabilistic orientation were constructed using median of the distribution of scores of the sample on Probabilistic Orientation Questionnaire. The quasi-experimental paradigm involved two levels of probabilistic orientation and two categories of subjects. It gave rise to a 2 X 2 Factorial design. Analysis of variance revealed that the group of graduate students had significantly greater resilience than the scientists. The high group on probabilistic orientation did not differ from the low group on probabilistic orientation with regard to resilience. No significant interaction between probabilistic orientation and categories of subjects has been found in the results.

Researches focusing on factors contributing to resilience would provide an important foundation for a paradigm shift away from a focus on illness and pathology toward one that understands, explains, and nurtures health of the individuals (O'Leary & Ickovics, 1995). However the number of studies on resilience is inadequate and is disproportionate to the significance attached to the concept. The objective of the present study is to examine the effect, if any, of probabilistic orientation on resilience among the graduate students and scientists.

Psychological resilience connotes three distinct phenomena including good outcomes despite high-risk status, sustained competence under threat, and recovery from trauma (Masten, Best & Garmezy, 1990). Psychological resilience is the ability to bounce back from negative events by using positive emotions to cope (Tugade, 2004). Resilience is a universal capacity that allows a person, group or community to prevent, minimize or overcome the damaging effects of adversities (Grotberg, 1996). It is refered to as an individual's capacity for successfully adaptation following exposure to stressful life events (Werner,1993). Neill (2001) defines resilience as the psychological quality that allows a person to cope with, and respond effectively to, life stressors.Resilience connotes an

individual's capacity to withstand stressors and not manifest psychology dysfunction, such as mental illness or persistent negative mood (Neill, 2006). It refers to resistance to illness in the face of exposure to high numbers of negative life events (Yi, Smith & Vitaliano, 2004).

In a validation study of resilience scale it is reported that all resilience factors were positively correlated with the well-adjusted personality profile constructed on the basis of the big five factor model. The findings showed that personal strength is most associated with emotional stability, social competence, is associated with extraversion, agreeableness, social skills and the structured style are associated with conscientiousness. Resilience was found unrelated to cognitive abilities assessed with Raven's Advanced Matrices, Vocabulary, Number series (Friborg, Barlaug, Martinussen, Rosenvinge & Hjemdal, 2005). It is also reported that perceived pain and stress increased significantly throughout the experimental session, but individuals scoring high on the resilience scale reported less pain and stress (Friborg, Hjemdal, Rosenvinge, Martinussen, Aslaksen & Flaten, 2006). In another study (Srivastava & Sinha, 2005) it has been found that resilience and happiness were positively related to well-being and happiness had positive association with resilience, but negative association with self–esteem. Experiential learning in a T-group type intervention seemed to cause an increase in the average magnitude of all core variables except self-esteem, which suffered a set back.

Probabilistic orientation connotes adhering to a typical set of personal constructs. It postulates that *every event in the course of life is a random event emanating from a constantly changing system set and ordained through evolutionary process by the primordial* (Narayanan, Venkatapathy & Govindarasu, 1984). Avoiding attributions, being aware of the ontological being, ceasing playing of games and diligently sticking on to this orientation are

the hallmark of probabilistic orientation. A factor analysis of the responses of a large group of elders to the probabilistic orientation questionnaire (POQ) revealed that the probabilistic orientation may be attributed to seven identifiable factors. The seven factors include unbounded expectancy, sensing unlimited possibilities, insight into bias, healthy skepticism, unconditional acceptance, appreciation of chance and awareness of probability. The series of studies done by Narayanan and his coworkers have adduced evidence to show that the construct of probabilistic orientation has adequate heuristic value (Narayanan, 2001; 2002; Narayanan & Annalakshmi, 2001; 2003; Thomas, 2005).

High probabilistic orientation is reported to be negatively related to stress among adolescent girls (Ramapriya, 2004). Job burnout negatively related to probabilistic orientation among sports coaches (Govindarasu, 1988), among physician (Brinda, 1997) and among personnel managers (Ponnusamy, 2000). Intervention involving the probabilistic orientation counseling along with integral therapy has been reported to have yielded positive outcome among adolescent students and adult cancer patients (Annalakshmi, 2003; 2004). A major study which exclusively adopted probabilistic orientation counseling reported that the counseling could bring effective results with novices who are aspirants of becoming religious priests in Catholic religious congregation (Thomas, 2005).

When a stressor occurs cognitive appraisal would take place. Under such circumstance the organism has to decide whether or not the stressor represents something that can be readily dealt with or whether the problem connotes a source of stress because it may be beyond its coping resources. If a stressor is considered to be a danger, coping responses are triggered by the organism. Coping strategies are generally either outwardly focused on the problem, or

inwardly focused on emotions or socially focused (Yi, Smith & Vitaliano, 2004).

The individual who is given to probabilistic orientation is Conscious of the nature of his ontological being, the individual given to probabilistic is aware that every episode in the course of life is a random event decided by the stochastic principles governing the unfolding of the Nature through evolution. He accepts reality as it is without resorting to defense mechanism or playing games. He does not resort to attribution. Thus, the probabilistically oriented individual perseveres in adopting perspectives conducive to developing resilience.

Hypotheses:

The hypotheses had reference to possible effect probabilistic orientation and student-scientist categorization and were as follows.

1. The students and scientists will not differ from one another in resilience.

2. The highly probabilistically oriented individual will differ significantly from the less probabilistically oriented individual on resilience.

3. The highly probabilistically oriented individual will be having significantly high resilience than the less probabilistically oriented individual.

4 There will be no interaction between probabilistic orientation and student-scientist categorization with regard to resilience.

Method

Sample:

The sample for the present study consisted of 125 individuals, which included 65 postgraduate students and 60 scientists. The sample included both male and female. All the 65 postgraduate students (21 males and 44 females) were studying MSc Psychology course at Bharathiar University, Coimbatore. Their age ranged from 21 to 24 years with a mean 22. All the students hailed from middle class families. The 60 scientists included in the sample were drawn from sugarcane breeding institute and the forest research institute at Coimbatore. There were 45 male and 15 female scientists. Their age ranged from 28 years to 50 years and the mean age was 37. They hailed from middle class families living in Coimbatore city. Subjects had any previous knowledge on Probabilistic Orientation while they were tested for the present purpose.

Tools:

The instruments used in the present investigation are Resilience Scale for Adults (RSA) (Friborg et al., 2005) and Probabilistic Orientation Questionnaire (POQ) (Narayanan, 1983).

Resilience Scale for Adults (RAS) purports to obtain a measure of the resilience in an individual. It consists of 33 items including items phrased in positive and negative sense pertaining to the various domains of resilience including Personal Strength, Social Competence, Family Cohesion, Social resources and Structured Style. Each item of the scale consists of bipolar answer options at the end of five point rating scale. The respondent is asked to state how far each item described him the best using a five-point rating scale. The responses are scored in accordance to the rating provided by the subject as best describing him or her. The scores earned by the subject over the entire scale is summed together to obtain the score on resilience for the subject. Thus, the possible scores for a subject on the scale ranged from 33 to 165. The greater the score on the scale, the greater is the resilience of the subject.

Probabilistic Orientation Question naire (POQ) was developed to obtain a measure the phenomenological personality orientation of an individual. The questionnaire consists of 70 items that cover all the seven factors construed by probabilistic orientation namely Unbounded expectancy, Sensing unlimited possibilities,

Insight into Bias, Healthy Skepticism, Unconditional Acceptance, Appreciation of chance, and Awareness of Probability. The respondent is asked to state whether the item best describes him by endorsing or rejecting the same in terms of "yes" and "no" responses. A score of one is earned by the subject on the scale when he endorsed a statement as describing him. The scores earned by the subject on the entire questionnaire were summed up to obtain the score of the subject on (POQ). The score possible on the questionnaire ranged from 0 to 70. The greater the score, the greater is his probabilistic orientation.

Statistical Analysis:

A quasi-experimental design involving a factorial arrangement was used for the study. The data matrix was ordered to form 2 X 2 Factorial arrangement based on high and low levels of probabilistic orientation and the student-scientist category.

In order to test the first hypothesis criterion groups were evolved to represent high and low levels of probabilistic orientation using the median of the distribution of probabilistic orientation scores of the sample. The scores for the subjects in the sample on POQ ranged from 33 to 67 and the mean and standard deviation were 55.57 and 6.33 respectively. The median of the score distribution was found to be 56. The subjects who had their scores falling below the median were grouped together to form the Criterion Group representing Low Group on Probabilistic Orientation. Conversely, the subjects who had their scores equal to or greater than the median were grouped together to form the Criterion Group representing High Group on Probabilistic Orientation. There were 62 and 63 subjects in the Low Probabilistic Orientation Group and the High Probabilistic Orientation Group respectively.

Results and Discussion

In order to test the hypotheses the scores of the various groups on resilience scale were subjected to appropriate statistical analysis. The analysis of variance was done for comparing the various means to find out the significance of the effect of probabilistic orientation and the categorization of the sample on resilience.

Analysis is variance revealed that the F ratio relating to the criterion groups on categories of subjects, students and scientists, is significant [F $(1,121)$ $=22.28$, p< 0.01]. Therefore the hypothesis that the students and scientists will not differ from one another in resilience is rejected. The comparison of means of the students and scientists on resilience shown in Table 1 reveals that students have significantly higher resilience than scientists. Thus the student-scientists categorization has an effect on resilience and the students have greater resilience than the scientists.

The F-ratio relating to the criterion groups on Probabilistic Orientation is not significant [F$(1,121)=1.55$, p>0.05]. Therefore the hypothesis that the highly probabilistically oriented individual will differ significantly from the less probabilistically oriented individual on resilience is rejected. Further, the F-ratio relating to interaction between levels of Probabilistic Orientation and Categorization of Subjects is not significant [F$(1,121)= 0.07$, p> 0.01]. The levels of probabilistic orientation and the categorization of the subjects seem not to have a significant interaction with regard to resilience.

The findings are intriguing. Contrary to the expectation students have been found to be more resilient than the scientists. However, the trend of the findings seems to be similar to the one reported in a previous study that the adults had more probabilistically orientation than the elders with whom they were compared (Narayanan, 1983). Perhaps, the elders

experience the humdrum of life as more frustrating than their younger counter parts who are still under the care of their parents. It is also to be ascertained whether students who were all students of psychology had over rated themselves on resilience due to social desirable tendency since they are aware of the positive value attached to the variable. The scientists had no such exposure and belonged to biological sciences. More controlled studies are needed to appreciate the facts and artifacts leading to the present finding.

Contrary to expectation the results reveal that high and low groups on probabilistic orientation do not differ with regard to resilience. Since earlier researches have shown that probabilistic orientation is related to variables like mental health (Jayaraj, 1984; Priya, 1997), Job-burnout (Govindarasu, 1988; Brinda, 1997; Ponnusamy, 2000) and values (Narayanan, 1986), it was hypothesized that the construct will have an effect on resilience of the individual. However, findings show that probabilistic orientation does not have a significant effect on resilience. It is likely that resilience has its distinct dynamics of its own and the association of probabilistic orientation with mental health related constructs does not vitiate the relationship between probabilistic orientation and resilience. More researches are needed to clarify the dynamics of the relationship reported herein between probabilistic orientation and resilience.

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