Psychological Distress among Post Graduate Students during Cold Weather Conditions

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Abstract - This study conducted at University of Kashmir, Srinagar (34.5°latitude and 74.5°longitudes) to examine the psychological distress among post graduate students of Arts, Biological Sciences, Science and Technology and Social Science based on the Cornell Medical Index (CMI) questionnaire. The results show that magnitude of psychological distress in cold climate extremes was found to be more significant in Biological Science and Science and Technology followed by Social Science and Arts.

Key words: CMI, Cold Climate and psychological distress

1. Introduction

Stress is becoming accepted as a workplace phenomenon negatively affecting a growing number of people across the world (Cox, et al., 2000). Stress is a complex phenomenon, which is reflected in the large number of definitions in circulation (Di Martino, 1992). The term stress has many meanings and according to some researchers it is very difficult to define in a consistent. The study primarily based on the Kashmir Valley and the area is chosen Kashmir university post-graduate students. The main focus of the study for the post-graduate students of final year, those who are geographically belongs to the different parts of the Kashmir area or even other parts of the country and more or less of the same economic strata. The season chosen is winter season which remains from December to March, during this time in peak winter and snowfall time the university remain closed. But, because the final year of graduation is the main deciding year of their carrier and students feel normally more psychologically distress. This will develop anger, tension, sensitivity, depression, anxiety, fatigue, dizziness and inadequacy etc. The Cornell Medical Index (CMI) has been examined to see the magnitude of the psychological distress among adult’s students. As the climate extremes or average weather over a long time acts as a catalyst in the psychological distress, so it is important to know the demography over the region. The Kashmir division experiences a Mediterranean type of climate with snow falling in winter and thawing in spring followed by temperature summer and dry autumn when leave shedding takes place. The seasons are clearing cut and recognizable. The winter season runs December till March. The Present study conducted at the Srinagar (34.5° latitude and 74.5°longitudes) at a mean sea level height 1587 meter. The climatologically normal minimum temperature of December, January, February and March are -1.6, -2.3, -0.6 and 3.8 respectively. During this cold period the sun is farthest to the south near the tropics of Capricorn. The state is under the dominating influence of the Siberian High with its maximum intensity in the month of January when the accumulation of cold continental air the East Central part of Asia is maximum. The wind flow is generally northerly, and very low temperature prevails for 15-20 days the minimum temperature fall below 8 to 10°C below normal. The region of Kashmir valley surrounded by all sides by High Mountain ranges having different altitudes and orientations. The Kashmir valley is basin shaped and has a length of about 140 kms and width varying 50-55 kms. The peculiarity of Kashmir climate is mainly due to Pirpanjal range to the south, Zanskar range to the north, Ladakh range to the east and in West Pakistan.

The various meteorological factors that have been suspected of contributing to changes in pain include temperature, barometric pressure, precipitation, humidity, thunderstorms, sunshine, and increased ionization of the air (Sulman et al. 1970, Harlfinger 1991). The perceived relationship between changes in weather and pain has been recorded since the classical Roman age. Hippocrates was the first to note, in about 400 B.C., that many illnesses were related to changes in season (Rosen 1979). The large body of folklore about how weather affects pain is reflected by traditional sayings and expressions, such as “aches and pain, coming rains,” “feeling under the weather,” and “ill health due to evil winds.” Stressors such as disruptive student, heavy workload and lack of support put teachers’ mental health in danger (National Union of Teachers, 2009).

2. Objectives

To study the psychological distress among sampled subjects (Post graduate students of Kashmir University) in cold climate extremes.

3. Hypothesis

H1: There will be a positive relationship between anxiety and psychological distress in cold climate among adults (male and female).
H2: There will be negative relationship between depression and psychological distress in cold climate among adults (male and female).

H3: There will be more problems of cardiovascular system responsible for psychological distress in cold climate among adults (male and female).

H4: There will be positive relationship between inadequacy and psychological distress in cold climate among adults (male and female)

H5: There will be positive relationship between fatigability and psychological distress in cold climate among adults (male and female)

H6: There will be negative relationship between anger and psychological distress in cold climate among adults (male and female)

H7: There will be positive relationship between tension and psychological distress in cold climate among adults (male and female)

4. Method

In this paper the well-known health questionnaire, Cornell Medical Index (CMI) developed by Wig, Parshad and Verma (1983) is used. This index primarily based on originally developed CMI in the United States as an aid to the clinician (Brodman e.t al, 1956). The above test consists of 195 simply worded questions which are answered as “Yes” or “No”. The questionnaire includes 51 questions dealing with mood and feeling patterns. The detailed structure is: section A, eyes and ears (9 questions); B, respiratory system (18); C, cardiovascular system (13); D, digestive tract (23); E, musculoskeletal system (8); F, skin (7); G, nervous system (18); H, genitourinary system (11); I, fatigability (7); J, frequency of illness (9); K, miscellaneous diseases (15); L, habits (6); M, inadequacy (12); N, depression (6); O, anxiety (9); P, sensitivity (6); Q, anger (9); and R, tension (9). Different forms of the CMI are used for men and women, identical except for six questions in the genitourinary section. Hence the questionnaire consists of eight sections (A to H) which deal, respectively, with the eyes and ears, the respiratory system, the cardiovascular system, the digestive tract, the musculoskeletal system, the skin, the nervous system, and the genito-urinary system; four sections which deal with fatigability, the frequency of illness, miscellaneous diseases, and habits; and six sections (M to R) which deal with mood and feeling patterns.

The questionnaire can be self-administered. It is usually completed in 10-30 minutes. There is close correspondence between responses to the questionnaire, and data given to physicians on oral interview (Brodman e.t al, 1949). This method is also of high validity as an indicator of the presence and severity of emotional disturbance (Brodman e.t al, 1952). To make the consistency or proper justification of the results equal weight is given to each question. All type of bias regarding the questionnaires of men and woman are not taking into account the study reveals that there no bias to decide the result based on the gender. The above index is used by Seema Sharma and Shusma Jaswal, 2006 for cycle manufacturing unit at Ludhiyana district, Punjab India to test the migration and magnitude of psychological distress among migrant and local laborers. They found that the psychological distress was found to be significantly more in industrial sector and among migrants who had spent one year or less in Punjab. A number of studies in the United States and Britain have demonstrated CMI value both as an aid to diagnosis and as screening procedure (Lawton, M.P, 1959, Cuplan et al, 1960). The use of the CMI in comparative studies presents problems. There is evidence that the questionnaire is of little value in comparisons of widely divergent cultures, and there are indications that problems of comparative validity may also arise when it is used in comparing groups within a single general culture.

5. Sample

A sample of 120 subjects from cold climate during winter time (60 male and 60 female) with the age group of 20 to 28 years will be taken for the present study. Both the groups will be matched with regards to their economic strata, educational level, and marital status. The sample taken from post –graduate students of the University of Kashmir, Srinagar from the four departments, Arts, Social Science, Biological Science and Applied Science & Technology (15 each from male and female). The sample used for the present study is of the students of different districts of Kashmir Valley. We can say they are all experienced the cold climate and more susceptible for cold or in other words we can use word that they are ‘experienced victims’. Sample used in the study students of Kashmir Valley from different districts has been selected.

6. Tools: C.M.I. health questionnaire by Dr. Wig & Verma (1983)

Variables:
- **Independent variables**: Gender and Climate
- **Dependant variables**: Psychological distress

7. Procedure

Initially the base of CMI questionnaire was explained properly to the students. Then it is circulated for both male and female post –graduate students of four above mentioned disciplines. Collected responses were analysed and a table is made to measure the extent of psychological distress.
The significance of the parameters is statistically examined by F-ratio and CD 5%. The distress magnitude is also examined by calculating the difference between proportions (Z test). All the responses were collected during winter cold weather conditions.

8. Results and Discussions

In the present study we have analyzed the seven parameters of psychological distress based on the CMI questionnaire. Kashmir University post-

A. Anxiety

The analysis shows that, the anxiety level of science streams students is most amongst other disciplines and male candidates show more anxiety level for all the disciplines. The probable reason may be the job stress and difficult to maintain proper schedule for the preparation of competitive exams during the cold climate extremes. The extent of anxiety was found as maximum 31.23 (Male) and 29.45 (Female) for Science and tech discipline followed by Biological science, Arts and Social sciences. In that case the above said null hypothesis is true. The same is reflected in Table 2 also under the row of applied science & tech and column of high level psychological distress.

Table 1 - Psychological Distress (Percentage scores)

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Gender</th>
<th>Anxiety</th>
<th>Depression</th>
<th>Cardiovascular system</th>
<th>Inadequacy</th>
<th>Fatigability</th>
<th>Anger</th>
<th>Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>M</td>
<td>24.43</td>
<td>15.56</td>
<td>16.13</td>
<td>14.22</td>
<td>16.45</td>
<td>11.50</td>
<td>11.71</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>21.87</td>
<td>19.56</td>
<td>17.11</td>
<td>18.24</td>
<td>15.78</td>
<td>14.45</td>
<td>15.35</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>23.27</td>
<td>24.33</td>
<td>12.67</td>
<td>17.34</td>
<td>22.45</td>
<td>19.33</td>
<td>18.23</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>29.45</td>
<td>23.26</td>
<td>12.75</td>
<td>17.45</td>
<td>12.32</td>
<td>15.56</td>
<td>27.11</td>
</tr>
<tr>
<td>Social Science</td>
<td>M</td>
<td>23.15</td>
<td>26.34</td>
<td>11.43</td>
<td>21.45</td>
<td>23.56</td>
<td>23.44</td>
<td>25.88</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>19.43</td>
<td>22.11</td>
<td>12.65</td>
<td>16.65</td>
<td>18.54</td>
<td>21.65</td>
<td>27.66</td>
</tr>
<tr>
<td>F ratio</td>
<td></td>
<td>1.45</td>
<td>2.79</td>
<td>9.60</td>
<td>26.24</td>
<td>1.37</td>
<td>2.63</td>
<td>1.36</td>
</tr>
<tr>
<td>CD (5 %)</td>
<td></td>
<td>0.38</td>
<td>0.21</td>
<td>0.05</td>
<td>NS</td>
<td>0.40</td>
<td>0.22</td>
<td>0.41</td>
</tr>
</tbody>
</table>
B. Depression

The symptoms’ of depression may develop at any stage during the winter time as cold conditions limit the movement and other outdoor physical activities. It is because final year of the students require specific attention to accomplish their goal. During this time a cooperative interaction and moral support from all the side is required. If the climate is extremely cold then it affects the regular study pattern and useful discussion, which intern leads to depression. From the study it is clear that, Social science and applied science of technology students feel almost the same degree of depression followed by biological science and arts discipline. Symptoms such as intense sadness, loss of interest or pleasure in normal activities, sleep disturbances or oversleeping, change in appetite and decreased energy level; sometimes feelings of helplessness and thoughts of suicide are sequel to stress induced depression. The null hypotheses are rejected as results show the positive relationship between depression and cold climate extremes for both male and female. The female shows little lesser psychological distress as compared to male students (Table 1).

C. Cardiovascular system

In this case the psychological distress found more in Arts discipline 16.13 (Male) and 17.11 (Female) followed by biological, applied and social science discipline. It may be due to work-related stress combined with the stress from everyday life can lead to detrimental physical and emotional outcomes because of the excess physical and mental demands placed on the human body and mind . During cold conditions the free movement also limited which lead to the poor health conditions. As in our sample of study we have taken all the students of the same area, those who have already faced the same climate conditions earlier also, so students are more cautious both male and female towards their health. As per the F Score (Table 1) this hypothesis is not strongly supported, though it satisfy the null hypothesis.

D. Inadequacy

The mean percentage score for inadequacy is more for social science discipline followed by biological, Applied Science and Arts. In overall F score and CD (5 %) shows this psychological distress dimension is non-significant. In this way we will reject the null hypothesis which shows the positive relationship for inadequacy and psychological distress in cold climate extremes (F ratio =26.24).

E. Fatigability

Our hypothesis shows that fatigability and psychological distress in cold climate among adults (male and female) have positive relationship. The same fact is supported by our results also (Table 1) which have (F ratio = 1.37 and CD 5 % =0.40). The males are prone towards fatigability in cold climate conditions and social science discipline shows more percentage psychological distress 23.44 for male and 21.65 for female. The hypothesis made above also supports the same. Here in all cases there is no gender wise distinction.

F. Anger

It is obvious from the table (1) that more prominent in social science discipline followed by biological and applied science and arts discipline. The overall percentage score (F – ratio = 2.63 and
CD 5 % =0.22) of psychological distress paradigm shows the relationship of anger and distress in cold extremes is quite significant, which contradicts our hypothesis (H6) above. This may be due to interpersonal relationships, organization role, and non-work lives may introduce psychological distress at work place and increase the anger. The social science discipline I supposed to be more oriented towards social activities and in cold temperature conditions almost all activities stopped and job stress also lead to anger. Because these types of felling are more prominent when we have a potential to do the things but climate extremes disrupts the day to day activities.

**G. Tension**

The analysis shows that tension causes more psychological distress among biological and science and tech disciplines. Our hypothesis (H7) shows positive relationship of psychological distress and tension which is also supported by F–ratio =1.36 and CD 5 % =0.41.

**9. Concluding Remarks**

Our study is based on the small sample and it can generalize further by taking larger sample and in turn the hypothesis made for the study can be further improved. But these preliminary findings shows that in all the seven psychological paradigms discussed above six are positively related to psychological distress. The Cold climate extremes will cause more depression, anger and tension. The tension and anger in biological and science discipline students are more as compared to other two arts and social science disciplines. The possible cause may be future job stress and inadequate sources of organizing the information and planning due to cold climate conditions. Table 2 also shows that, that biological and applied science and technology students are falls under high and average distress conditions, which is followed by social science and arts discipline. The anxiety level of female students in all the disciplines is more as compared to the male students. Arts and biological science female students show more depression as compared to applied science & tech and social science female students. Over all there is a positive relationship between depression and cold climate weather conditions.

**References**


