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Stress, Anxiety and Loneliness Among 20th Indian Expeditioners at Antarctica during Summer

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Abstract

The ice-covered land of Antarctica seems to appear to the social scientists as stressful due to various reasons, which includes the extreme environmental conditions prevailing there. With the backdrop of the condition prevailing at Antarctica, it was planned to examine the nature and extent of stress under Antarctic conditions, to understand the coping mechanism and direct action taken by people to combat stress, to understand and analyze the correlation between various stressors and to administer and ascertain anxiety levels and perceived loneliness among the groups (N=48) belonging to 20^{th} Indian expedition to Antarctica. The results revealed that the conditions prevailing at the Antarctic base seems to play a major role where all the factors seems to have mingled and affected each other in either positive or negative manner. Looking at the cultural background of the subjects the sexual behavior was found to be appropriate among the respondents. Furthermore, the result of the study reveals a low level perception of loneliness and anxiety. The coping behavior of the respondents was found to be appropriate. Looking at the results, it could be concluded that the subjects were not much vulnerable to stress as has been indicated by the western scholars. The social, cultural, family and traditional background of the participants seems to have its' hand in determining the present findings.

Keywords: Stress; Anxiety; Loneliness; Antarctica.

Introduction

Antarctica is the highest, driest, and windiest of the earth's continents. Because it has no permanent indigenous inhabitants, it has been referred to as "The Ice" by those who work and live there and has viewed it **as** having enormous potential as a natural laboratory for **the** social and behavioral scientists (Palinkas, 2002). This potential lies in both the nature of environment and the nature of those who struggle to live and work in this environment.

The ice-covered land of Antarctica seems to appear to the social scientists as stressful due to various reasons, which includes the extreme

environmental conditions like extreme cold conditions, complete dark winter climate overcast conditions and erratic wind pressure (Adya, 1988; Johnson, 1985; Joshi, 1995), isolation from family and friends (Strange & Klein, 1973), interpersonal conflicts and working conditions.

Stress has become an inseparable part of human life and can be observed in every sphere of life. In conditions of physical extremities, such as that prevailing in the Antarctic, the routine undergoes a drastic alteration and stress relieving agents such as families, friends, and neighbours cease to exist. This requires an individual to psychologically shift gears to adapt to the new situation. Problems related to the individual's adjustment to close group interdependence, monotony of environment and absence of accustomed sources of emotional gratification have been studied among groups of volunteers subjected to isolated Antarctic living for six to eight months at isolated bases. Reactions such as low concentration insomnia, headaches, hostility, depression etc. were found to be prominent in the studied subjects (Haythron & Altman, 1967; Mullin, 1960; Nardini, 1962; Rohrer, 1961).

In recent years, the area of psychological stress has made significant advances in understanding the relationship between physical environmental stresses and well-being. It deals with the impact of a wide range of negative outcome that otherwise seem to defy adequate explanation. With the beginning of influential work of Selye (1956) and Lazarus (1966), followed by studies of Glass and Singer (1972) on unabated noise, the environmental stress concept has led to ample amount of research on the properties of environment and its relationship with human behavior and health.

Despite these, the studies related to the psychological stress and coping in relation to environment prevailing in extreme conditions of Antarctica is still a hot among behavioral scientists (Bell & Garthwaite, 1987; Palinkas, 1992, 2002). Thus with the above background the investigator undertook following objectives:

1. To understand the nature and extent of stress under Antarctic conditions.
2. To administer and ascertain anxiety levels and perceived loneliness among the expeditioners.
3. To understand the coping mechanism and direct action taken by people to combat stress, if any.
4. To understand and analyze the correlation between various stressors.

Methodology

Sample: A total number of 48 subjects participated in this study. The respondents, for this study, belonged to the 20th Indian Scientific Expedition (2000-2001) who stayed in Indian base at Antarctic on the summer duty. All the subjects were put to the nine scales designed for the purpose of extracting relevant information from the subjects.

Tools: A total number of nine psychological instruments were used in the present study. Six stress scale, meant for assessing the Existential stress (SES), -questions in this scale were related to the individual's life values, religious beliefs, significance of life and living conditions; Achievement related stress (SAS)-the items included here were related to personal achievement, and attainment of goals in Antarctic situations; Academic stress (SAS)-academic and work related stressors; Social stress fSSCSJ-this social stress scale was designed to extract information related to the way social actions of others affected the subjects self esteem and behavior; Physical Stress (S'PS')-this scale was used to asses the physical strain put on the individual due to the strenuous conditions prevailing in Antarctica and; Familial Stress *(SFS)-this* scale was developed to measure one's stress level pertaining to worries related to family members and other peer groups back at home. These stress scale were to be rated on Likert type rating scale-ranging form 1 to 5, where 1 indicated low stress and 5 indicated high degree of stress. In addition, a Sexuality scale was developed and used to measure behavior indulged in order to compensate for the lack of physical proximity with one's partner and the conditions acting on one's sexual desires. This scale consisted of 14 open-ended items. Furthermore, Sinha's Comprehensive Anxiety Test (SCAT) developed by Sinha & Sinha (1995), was used which consisted of total number of 90 items to be responded as either yes or no on each items. The scoring of the items were done as per SCAT manual's direction, where only yes answer scored 1 each and answers of no were eliminated or scores zero and then all the scores were to be added to form a comprehensive anxiety scores. Finally the Perceived Loneliness Scale (L-Scale) developed by Jha, (1997) was used which included a total number of 36 items pertaining to different measures of loneliness. The items are framed in concordance with the concept and characteristics of loneliness. The items were to be rated on five-point scale ranging from 1 (totally agree) to 5 (totally disagree). High score (5) reveals high loneliness and low score (1) reveals low loneliness of the respondents.

Procedure: The test was administered after people had settled down at the Indian base and had been allotted their duties and responsibilities. One test was administered at a time with detailed explanation provided.

Informed consent was taken from each subject. A self-chosen code was decided by respondents and a separate file was maintained by the investigator for each participant. Further, the investigator maintained a personal observation dairy. Further, confidentiality of their response was assured.

Results and Discussions

Demographic Profile: The results reveal that the average mean age of the respondents was 37.58 years. Besides, 43.7% of the team members were either postgraduate or above in educational qualification. Furthermore, 21.2% of the respondents were found to be graduate in various stream of education. Similarly, equal distribution (15.6%) of the higher secondary educated and 10^{th} level educated comprised the groups. In addition, 3.1% of the team members were diploma holders.

Stress Profile: The stress profile was calculated using bivariate correlational analysis (Pearson 'r') and on the basis of mean distribution. The results of the correlational analysis are presented in Table 1.

Table 1: Correlation among the stress variables

	SES	SACHS	SAS	SSCS	SPS	SFS
SES	1.000	.642**	.567**	.658**	.389**	.403**
SACHS		1.000	.693**	.670**	.579**	.447**
SAS			1.000	.625**	.620**	.716**
SSCS				1.000	.620**	.630**
SPS					1.000	.704**
SFS						1.000

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

Inspection of the stress profile reveals that all the stress variables were significantly and positively correlated with each other. It seems that achievement related stress was the most important stressor reported by the participants (Table 2). Conditions prevailing at the Antarctic base seems to play a major role where the all the factors seems to have mingled and affected each other in either positive or negative manner. This means that the achievement stress was affected with the increase or decrease in the prevailing life values and living conditions, academic and work related stress, mutual support, physical stress, etc. It has been studied and found that any alteration in support, achievement, life values etc. can cause stress (Haythorn & Altman, 1967).

Table 2: Mean value of the stress scales

Scales	Summer	
	Mean	SD
SES	20.23	5.368
SACHS	26.65	6.515
SAS	23.21	4.612
SSCS	22.02	6.369
SPS	20.69	6.133
SFS	20.98	4.159

Since, scientists, officers and logistic personnel lived in a group of about 12 people in each residential module and each person was assigned a specific job, therefore, were dependent on each other. Technical competence, responsibility and stability in job performance, thus, become key factors in determining group acceptance and status. It has been reported earlier by various scientists that change in any of the factors such as environmental conditions, personal achievement, accomplishment of goals, social and group support, physical status of an individual, and family related issues on hard expeditions, for example, the present expedition to Antarctic, creates stress among people in those conditions (Nardini, 1962; Haythorn & Altaian, 1967). The result is consistent with the studies carried by various scientists on different stress variable such as studies focusing on social support, achievement, academic and goal attainment, existence in severe conditions, physical stress, and familial stress (e.g., Haythorn & Altman, 1967; Mulin, 1960; Nardini, 1962; Rohror, 1961).

Sexuality Scale: The results of the sexuality scale (Table 3) indicate that sexual separation from spouse and preparation of the same was important for almost all the respondents. Masturbation was found to be common among 60% of the sample and the frequency of the same varied from 1-3 times (40% of sample) to 3-6 times (40% of sample) a month. Homosexual relationship was perceived as wrong in all the conditions by 86.6% of the respondents. While 50% of the sample accepted that sexual thoughts kept invading their thoughts, frequent interference of sexual thoughts with work was as low as 70% among the subjects. Besides, 70% of the subjects felt that their sexual functioning would remain unchanged and 90% of them indicated that sexuality in their life was one of the important aspect (Table 3).

Table 3: Thoughts and belief about sexuality

S.No.	Thoughts and Belief about Sexuality		Response in percent
1	Sexual Separation	Important	80%
		Unimportant	20%
2	Preparation for Sexual Separation (before Expedition)	Adequate	70%
		Inadequate	30%
3	Masturbation	Right	60%
		Wrong	40%
4	Masturbation frequency in one month during expedition	0 times	6.7%
		1-3 times	40%
		3-6 times	40%
		More than 6 times	13.30%
5	Sexual relation with same when no opposite sex member available	Right	13.3%
		Wrong	86.6%
6	Homosexuality	Right	13.3%
		Wrong	86.6%
7	Sexual thoughts	Frequent	50%
		Infrequent	50%
8	Interference in work due to sexual thoughts	Frequent	30%
		Infrequent	70%
9	Sexual functioning after the expedition	Improve	20%
		Unchanged	70%
		Decline	10%
10	Sexuality in one's life	Important	90%
		Unimportant	10%

The sexual behaviour seems to be appropriate among the respondents. The cultural background, seems to play a significant role in this matter. In India, in contrast to the western world where sex behaviour and sex discussion is quite open, the topic of sex is not much freely discussed and practiced. Besides, in the Indian value system it is desired, by the society and family, to be engaging sexually only with spouse. In extreme conditions, like those of Antarctica, where there is little facility for sexual gratification, it could be a cause of stress. However, the respondents knew that their duration of stay in Antarctica was not long they were well prepared for this. In addition, it was found that all the subjects were married and belonged to the age group of 35 plus, separation with their spouse did not matter a lot and hence, had adjusted with this basic instinct feeling no or little stress.

Loneliness and Anxiety Profile: The result of the study reveals a **low** level perception of loneliness (M= 81.18) among the participant (Table 4). Loneliness refers to an individuals' subjective perception that he lacks close interpersonal relationships (Jha, 1997). An individual is lonely if he desires close interpersonal relationships but is unable to establish them. However, it could well be noticed that the expeditioners in Antarctic lived in a group of about 12 people in each residential module and their interpersonal relationship seems to be facilitated. Further, observation of actual situation seems to indicate a well-adjusted sense of social integration among the expeditioners with a network of friends and co-workers. This may be the cause of low perception of loneliness among the respondents. Altogether it is evident that loneliness individuals give evidence of inadequate interpersonal skills, which was not reported or observed among the subjects. The result seems to be consistent with previous studies (e.g., Parlee, 1979; Weiss, **1973).**

Table 4: Perceived loneliness and anxiety scores of the respondents

Scale	M	SD
Perceived Loneliness	81.18	19.0669
Anxiety	19.08	16.57035

The results of the anxiety scale (Table 4) reveals the fact that the anxiety levels was **normal** (M=19.08) among the individuals who participated in the study. Anxiety is a basic component of stress and it is not only a symptom or manifestation of stress, but also a cause of further stress (Girdano et al., 1990). The result of stress analysis seems to justify the resul of the anxiety test. It seems that both the stress and its one of the major component, i.e. anxiety, was perceived quite at a low degree by the respondents. It has been studied and found that cultural background of an individual plays a considerable role in determining in the experience of stress (Palsane et al., 1993). Since, all the respondents belonged to India, a country that has a long history of intimate social life and traditions, it **can** be interpreted that the subjects had strong and well adjusted relationship, as was observed by the investigator, with each other, the feeling of anxiety was thus low among them.

To cope with stress, the expeditioners were found to be displaying a variety of behaviors. Some associated with groups, some did exercises, and some did dhyana and prayers, while others watched films and listen music. The adjustment among the respondents helped them counteract

stress, effectively. Every **one** in **the** expedition had a feeling of responsibility toward their counterparts and offered a helping hand to others, thus lowering the person to vulnerability to stress.

Conclusions

Thus, It can be said that the Indian expeditioners at Antarctic were not much vulnerable to stress as has been indicated by the western scholars. The social, cultural, family and traditional background of the participants seems to have its' hand in determining the present findings. Since, **the** respondents who visited the Indian base at Antarctic were mostly the first timers a more comprehensive study of stress consisting of steeding stress among **the** winter over personnel could not be done. Further, it is felt that future research may focus on interpersonal relationships between expeditioners and winter over personnel of the previous team.

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