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Students' Corner
Original Article

The constant threat of terrorism: stress levels and coping strategies amongst university students of Karachi

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Abstract

Objectives: To assess the levels of stress in the face of terrorism and the adopted coping strategies, amongst the student population of universities in Karachi.

Methods: A descriptive, cross sectional study was conducted on undergraduate students from four universities of Karachi. Self-administered questionnaires were filled out by 291 students. Pearson Chi-Square test was used to assess associations between stress levels and different variables at a level of significance of 0.05%.

Results: A total of 65.8% of the students had mild stress levels, 91.5% of university students were exposed to terrorism through television, while only 26.5% students reported personal exposure to terrorism. 67.4% students were forbidden by their parents to go out (p=0.002). Most of those who had self exposure to an attack were the ones whose parents forbade them from going out (p=0.00). Most commonly used coping strategy was increased faith in religion. Irritability was the most common stress symptom.

Conclusion: A majority of students studying in universities of Karachi had mild stress levels due to the constant threat of terrorism whereas a minority had severe stress levels. Possible reasons for resilience and only mild stress levels could be the history of Karachi's internal conflicts and its prolonged duration of being exposed to terrorism. These students who are positive for stress need to be targeted for counseling either through the media or through their universities. More extensive research is needed in this area.

Keywords: Stress, Terrorism, Universities in Karachi (JPMA 61:410; 2011).

Introduction

The definition of terrorism quoted in the UN Security Council Resolution in 1994 was; "Criminal acts, including against civilians, committed with the intent to cause death or serious bodily injury, or taking of hostages, with the purpose to provoke a state of terror in the general public or in a group of persons or particular persons, intimidate a population or compel a government or an international organization to do or to abstain from doing any act."[1]

Throughout its history, Pakistan's citizens have borne the losses incurred through terrorism in many manifestations-sectarian, ethnic, secessionist, political and most recently, religious fundamentalist. Post September 11, 2001, Pakistan has been subjected to a rise in the frequency of terror attacks, targeting both civilian as well as government institutions. There was a drastic increase in the number of terror attacks being carried out in public places, from 890 in 2007, to 1839 in 2008, with a corresponding rise in fatalities.[1] By November 30 2008, there were already 57 recorded suicide attacks in Pakistan, in comparison to 45 reported attacks in 2007.[2] Although there was a decrease of 18% in worldwide terror attacks between 2007 and 2008, the number of such attacks in Pakistan more than doubled.[2]

Unlike war zones, where adolescents themselves have actually been subjected to physical violence and hunger, in the major cities of Pakistan, youth go about their daily routines with only the threat of a possible terror attack. Since such attacks often occur at marketplaces, prominent hotels, religious gatherings and other public venues, this assumed normalcy in fact, increases their risk. The recent terror attacks in our country and threats of similar attacks occurring again raise important questions about the effect of the experience on the psychological health of our youth. Studies similar to this have been conducted in other geographic locations such as Israel and Palestine, to assess the impact of this constant terror on the health of adolescents, since they are both particularly predisposed to develop psychosocial stress symptoms and are on the brink of becoming themselves responsible for maintaining peace in their state. To the best of our knowledge, no data in Pakistan has been collected on this very issue, in particular on university students who are the future of this country.

Much of the existing research on the effects of terrorism internationally has focused on posttraumatic stress disorder (PTSD) symptomatology in those who have been actually

present at the attacks.[3] However, there is little research on the effect of mass violence or constant fear of terrorism on those who were not present at the site, indirectly affected individuals. Different studies have defined indirect exposures in different ways. Some researchers have defined indirect exposure as viewing television news coverage of terrorist attacks and discussed the effects of media coverage on mental health.[4,5] Additionally, several studies have examined residence in a location distant from the site of a terrorist attack as an index of exposure.[6] Previous international research has demonstrated significant positive relationships between proximity of residence to a terrorist attack and increased psychological distress.[7-10] Research focusing in Pakistan is markedly deficient. Such effects amongst the college student population have yet to be studied. As this is the population that will become the working professionals of tomorrow, it was imperative that the prevalence of these symptoms and the direct as well as indirect effect on their lifestyle be studied. This will help to determine the prevalence and intensity of terrorism-related stress and how important it is to target this particularly vulnerable population for possible intervention. The significant rise in the number of terror attacks highlights the gravity of terrorism as a continuing threat to adolescents' sense of safety and well-being. Effects over time may include feelings of shock, anxiety, depression, or even emotional indifference. In the prevailing circumstances, these feelings may be more intense and prolonged than usual and alter an individual's emotional stability. Our study assessed these symptoms in relation to various types of exposure to terrorism, demographics, and the overall effect it has on their day to day activities and resilience.

Methods

A descriptive, cross sectional study was conducted on undergraduate students from four professional universities of Karachi. Two of the selected universities were public and two were private. Using Epi Info, selecting a 0.05% significance level, and taking the prevalence of stress to be 0.25,[11] our sample size was calculated to be at least 289. Convenience sampling was used to draw the sample i.e. the universities were selected by a random draw, and the questionnaires were handed out to the students at random, depending on who was available at that given point in time. An equal sample of 75 students from each university was taken but the results then were weighed in proportion to the total population of the public and private universities. Inclusion criteria were university students between the ages of 18 to 25. Exclusion was on the basis of refusal of informed consent.

Data Collection:

After seeking approval from the Ethics Review Committee of the Aga Khan University, piloting of the questionnaire was performed. Permission was sought from the Heads of the selected universities/colleges, after which informed consent was obtained from each student questioned, and participants' anonymity was maintained.

In all we gathered a total of 300 questionnaires from all four institutes. Nine questionnaires were less than half finished and were not included in the analysis. Hence, the effective sample came out to be 291; 141 students from public (after excluding the 9 unfinished questionnaires) and 150 from private institutions.

Research Tool:

The use of previously validated questions allowed us to accurately assess subjective reporting.[12-15] The participants' exposure to terrorism was assessed using a structured questionnaire with 34 questions drawn from similar studies.[15,16] The participants were asked to reply to the questions with respect to the time in which terror attacks have significantly increased, i.e. since the beginning of 2007. Four questions assessed participants' exposure:[4,9,18,19] direct exposure, interpersonal exposure, exposure through the media and exposure through information given by others. Participants were then asked whether they avoided public places or were forbidden going to public places, and the level of fear experienced if they continued to go. Social sharing was then evaluated by asking participants as to whom they discussed their feelings with, regard to terror attacks, and who they felt most comfortable talking to.[20]

Stress symptoms were measured using a shortened version of the PTSD scale of the Diagnostic Interview Schedule for Children, Version IV.[9] The intensity of intrusion, avoidance, arousal and somatic symptoms was further assessed, and a global stress reaction score calculated as none (0-8), mild (9-17), moderate (18-26), severe (27-35).

Coping was assessed using a modified version of the COPE questionnaire[12,17] that had been validated and used before in similar studies. Ten of the items are from the original COPE questionnaire; the other four were substituted for questions that were more appropriate to the research objectives.[17] Each item assessed a different coping style, and participants were also asked to rate the frequency of use of each particular style from 0 (not at all) to 4 (a great deal): emotional social support/venting of emotions, instrumental social support (I've been getting help and advice from family/friends), faith in God, acceptance, mental disengagement, denial, substance use, humour, and self-distraction. The substituted questions evaluated whether the participants had checked on the safety of relatives and/or friends when there had been an attack or searched for information concerning the attack in the media (active coping), or whether they avoided television and radio news broadcasts after terror attacks (avoidance coping) or sought relief from the use of tranquilizers.

A further question was added by the research team to elucidate other stressors faced by the participants, in order to more clearly assess the association between terrorism and their stress levels.

Data entry and Analysis:

All data was entered in Epidata Version 3.1 and validated through double entry. All statistical analysis was done through SPSS version 16. The results of public versus private universities were weighed according to their total populations. Hence, 88.1% was the sample taken from public and 11.9% from private universities. Pearson Chi-Square test was used to assess associations between all the variables and stress levels, at a level of significance of 0.05%.

Results

Of 291 participants, 189 (65%) were male and 102 (34.9%) were female and 98.5% of the sample comprised of Muslims. The mean age was 20.3 ± 1.57 years.

According to the global stress score, it was seen that 65.8% of the students had mild stress levels, 11.9% had moderate and 5.7% had severe stress levels, whereas 16.5% of the students had stress scores below mild levels (reported as none).

Table-1: Type of exposure to terrorism, experienced by university students of Karachi (N=291).

Type of exposure	n (%)	P-value
Television exposure	266 (91.5)	0.439
Informed by parents	263 (90.3)	0.018
Knew someone injured/killed in an attack	135 (46.4)	0.015
Knew someone directly exposed in an attack	84 (28.7)	0.019
Personal Exposure	77 (26.5)	0.008

Most of our results showed a positive association between exposures (Table-1). and stress. The most common means of exposure reported by 91.5% of the sample was through television (this was the only means that did not show a positive association, X^2 =2.709, p=0.439) followed by information through parents (p=0.018), knowing someone injured or killed in a terror attack (p=0.015), and knowing someone directly exposed to an attack (p=0.019).Only 26.5% of students reported to have been personally exposed to terrorism (p=0.008).

Table-3: The coping strategies used by university students of Karachi (N=291).

Coping mechanisms	Sum	Mean
Increased faith in religion	748	2.57±1.42
Acceptance of what has happened	601	2.07±1.398
Searching media for information	485	1.67±1.35
Instrumental support	415	1.43±1.17
Check whereabouts of family/friends	363	1.28±1.23
Venting of emotions	360	1.24±1.293
Self distraction	265	1.22±1.368
Emotional support from friends/ family	351	1.21±1.256
Avoidance of thinking about the attacks	261	1.07±1.352
Humour	270	0.93±1.293
Denial of what has happened	220	0.76±1.14
Behavioural disengagement	202	0.7±1.054
Use of tranquilizers	188	0.65±1.122
Substance use	137	0.47±1.028

Regarding social sharing, the students were most comfortable sharing their feelings with friends. This was followed by parents, siblings and least with their teachers. Because of terror attacks, the students were not very comfortable with going out. Self avoidance to going out was reported by 31.9% (p=0.614), 67.4% students said that their parents forbade them from going out (p=0.002) and 50.5% said their parents had reduced their own going out (p=0.00) because of terrorism.

When results were computed to see associations between exposure and avoidance to go out, it was seen that those who had self exposure to an attack were the ones whose parents forbade them from going out (p=0.00) and had reduced their own going out as well (p=0.00).The association between exposure and self avoidance to go out was not significant (p =0.11). Also, those who knew someone injured or killed in an attack stated that their parents had reduced their own going out (p=0.00). The results are shown in Table-2.

It was found that several coping mechanisms were employed by the students to curb stress related to terror attacks (Table-3). Among the strategies the one most commonly used was increased faith in religion (mean = 2.57 ± 1.42), followed by acceptance of the constant threat of terrorism (mean = 2.07 ± 1.398), searching media for information (mean = 1.67 ± 1.35) and instrumental support (mean = 1.43 ± 1.17). The least common strategies reported by students for coping included use

Table 2: Association between exposure to terrorism and avoidance to go out, amongst university students of Karachi (N=291).

Type of exposure	self avoidance to go out % (p-value)	Parents forbid going out % (p-value)	Parents had reduced going out % (p-value)
Self exposure	20.4 (0.110)	19.9 (0.000)	18.9 (0.004)
Knowing someone directly exposed	22.6 (0.124)	26 (0.124)	26.6 (0.396)
Knowing someone injured/ killed	47.3 (0.829)	49.5 (0.128)	55.2 (0.003)
Exposure through TV	96.8 (0.033)	93.4 (0.087)	91.7 (0.891)
Exposure through parents	91.4 (0.686)	92.9 (0.021)	

Table-4: Chi square values for association of stress with exposure and avoidance to go out.

	Pearson Chi-Square	df	p-value(<0.05)
Exposed to a terror attack or been nearby when one occurred	11.811	3	.008
Knew someone who has been directly exposed to a bombing/terror attack	9.907	3	.019
Knew someone who has been injured/killed in an attack	10.407	3	.015
Informed by parents about attacks	10.033	3	.018
Watch TV broadcasts when a terror attack takes place	2.709	3	.439*
Self avoidance to go out	1.804	3	.614*
Parents forbidding going out	14.888	3	.002
Parents reduced their own going out	18.646	3	.000

*p>0.05.

of tranquilizers, behavioural disengagement and substance use.

Irritability was the most common stress associated symptom. It had a mean score of 2.3 ± 1.296). This was followed by lack of concentration (mean = 2.10 ± 1.106), avoidance of thinking and talking about terror attacks (mean = 2.05 ± 1.111) and nightmares (mean = 1.92 ± 1.160). Least frequently experienced stress related symptoms were headaches, sleeping problems and stomach aches.

Discussion

The principle finding of our study was that a majority of students studying in universities of Karachi had mild stress levels due to the constant threat of terrorism, whereas a minority had severe stress levels. These 65.8% of students are the ones who should be targeted for stress management programmes. Only 5.7% had severe stress levels. Possible reasons could be the history of Karachi's internal conflicts and its prolonged duration of being exposed to terrorism. This could have lead to resilience and the stress levels may not be as severe as those amongst university students in cities where there has been a recent increase in terrorist activities e.g. in Northern part of Pakistan. The results could indicate basic resilience and powerful adjustment capacities in people.[21]

The type of exposure to terrorism experienced by most students was through information given by parents (90.3%) and television (91.5%). Research shows that parents educating adolescents about terrorist attacks are related to their evincing more stress symptoms. Parents who are overwhelmed by the event, or have less opportunity to share the information and their feelings with other adults, may tend to do so more with their children, and thereby transfer their feelings of anxiety or distress to them.[21] It has also been shown that children of parents who themselves did not go out to high-risk places exhibited higher levels of stress symptoms.[22] An explanation could be that stressed adolescents themselves seek information from parents regarding the situation.

For a more accurate idea of the effect of television-watching on stress related symptoms, information is needed on the length of time spent viewing[9] and the kind of images shown with each terror event.[23] Out of those who had severe stress levels, majority were those who had been personally directly exposed to an attack or knew someone else who had been injured/killed in an attack, indicating the need for these students to be included in those needing to be counseled regarding the possibility of stress.

Social sharing as a mechanism to deal with terrorism was adopted by all participants in our study. Sharing feelings associated with terrorism with friends, parents and siblings was common to all. Literature attests that sharing trauma-related feelings with family and friends can be beneficial and decreases stress-related symptoms.[24] However, to the contrary certain studies show that the amount of disclosure is associated with levels of distress.[25]

All participants showed positive results regarding avoiding going out for leisure, if influenced by their parents. Of those who had moderate to severe stress levels, majority were those whose parents had forbidden them from going out (p=0.002) and those whose parents had reduced their own going out as well (p=0.000). Surprisingly, a minority personally reduced their own going out, outside the influence of their parents. We were unable to find a positive association between self avoidance of public places and stress (p= 0.614). This could possibly be explained by the presence of resilience amongst the students of Karachi.

Both positive and negative coping strategies were observed amongst the students. The most common coping strategy adopted by both male and female students was increased faith in religion. Other common strategies included acceptance, searching media for information regarding terrorism and venting. It was found that higher levels of anxiety were related to more venting of emotions in college students after the September 11th terrorist attack.[26] Our results suggest that those who appeared to be stressed by the threat of terrorism attacks were likely to cope with their feelings of vulnerability and future threat by increasing their faith in religion, accepting the situation, avoiding facing the situation, distracting themselves and focusing on and venting their emotions about the attacks.

To the best of our knowledge, our study is the first of its kind in the region. It targets the age group that is most

vulnerable to stress induced by the threat of terrorism and this provides a baseline for further, more extensive work in the same area.

Limitations:

The unpredictable nature of terrorism places unavoidable constraints on attempts to study its impact on people. As a result, no data was available on the severity of stress in the sample prior to the rise in terrorism. Without pre-attack data, it is not possible to ascertain whether there is stress as a direct result of the recent rise in terrorism. Also, almost all participants reported to also having stress associated with other factors such as academic, family and interpersonal. Stress reactions of young students change over time, hence longitudinal designs are recommended. Parents' psychological reactions should also be analyzed for their role in their children's psychological stress reactions. Due to limited time available, the data was gathered by convenience sampling from only four institutes of Karachi. Therefore the results cannot be generalized effectively.

Conclusion

A majority of our sample, i.e. university students aged 18 to 25 experienced mild stress levels in relation to the constant threat of terrorism while a small minority reported severe stress levels. Despite the limited sense of safety, most students reported adapting to the situation without substantial mental health symptoms and impairment, and most sought various ways of coping with terrorism and its ongoing threats.

Recommendation:

We recommend that this vulnerable population should be encouraged to engage in activities that decrease their stress levels. They should also be targeted for counseling regarding stress management.

Research in this specific area has only begun. Not many studies have been yet conducted and we hope this survey will prove useful for other investigators. More extensive research is needed, which should include regions with a recent increase in terrorism, to benefit and counsel the youth of our nation in dealing with the current situation and creating a healthy future for our country.

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