

Post-traumatic stress disorder among Palestinian university students following the May 2021 war

Nasser Ibrahim Abu-El-Noor^{1*}, Abdal-Karim Said Radwan¹, Rania El-Kurdy² Yousef Ibrahim Aljeesh¹, Mysoon Khalil Abu-El-Noor¹

¹Faculty of Nursing, Islamic University of Gaza, P. O. Box 108, Gaza, Palestine, ² Faculty of Nursing, Mansoura University, Egypt

Abstract

Post-traumatic stress disorder (PTSD) is a common disorder among survivors of war combat. This study aimed to assess the level of PTSD among university students following the Israeli war against the Gaza Strip in May 2021. In this cross-sectional study, 1183 students completed the Impact Event Scale-Revised (IES-R) between November and December 2021. The results revealed that 88.7% showed severe symptoms of PTSD. The mean for the IES-R score was 2.55. The highest mean of IES-R domains related to “Intrusion” (mean=2.77) followed by “Avoidance” (mean=2.28) and “Hyper-arousal” (mean=2.01). This level of PTSD shows the need for special intervention programs to diminish the level of stress and trauma among these students after the war.

Keywords: Post-traumatic Stress Disorder, University Student, Palestine, Mental Health, Trauma.

Background

Palestinians living in the Gaza Strip are subject to several stressors and traumatic events which had the potential to have a very negative impact on their psychological well-being including poverty, unemployment, stress, post-traumatic stress disorder (PTSD), and uncertainty of the prevailing situation in the area (Aqel & Thabet, 2018). They have been subject to several major offensive attacks and several sporadic aggressions by the Israeli army since 2006. The last offence was in May 2021. The toll for this 11-day war was very high as there were 232 Palestinians killed (65 of them were children, 39 women, and 17 were elderly) and 1900 were wounded (Palestinian Ministry of Health, 2021).

In an extensive review of the literature, Johnson and Thompson (2008) found that PTSD is a common sequela after war and torture. PTSD is “a stress-related syndrome that develops in many following exposure to serious or life-threatening traumatic events” (Yang et al., 2021, p. 4301). It is a condition caused by a psychological inability to recover from and cope with trauma. (Pagel, 2020) and it has both physical and mental consequences. It is a mental disorder caused by exposure to sexual violence, death, or serious injury, whether this disorder is real or threatened. There are four diagnostic clusters for PTSD: “re-experiencing, avoidance, negative cognition/mood, and hyperarousal.” (American Psychiatric Association, 2000).

Therefore, in order to be diagnosed with PTSD, a person should exhibit symptoms including persistent re-experiencing of the traumatic event (e.g., intrusive thoughts, nightmares, and flashbacks), avoiding situations or people associated with the trauma, negative changes in mood and cognition, and having hyperarousal; that last for at least a month (American Psychiatric Association, 2000).

* **Corresponding author:** Nasser Ibrahim Abu-El-Noor; Email: naselnoor@iugaza.edu.ps

PTSD, as a disabling condition, affects many individuals negatively throughout their lives. It rarely has a short-term impact, but most often it has negative effects on individuals for several years after their exposure to traumatic events. Literature reported that people diagnosed with PTSD are at higher risk for anxiety, personality disorders, suicidal ideation, suicide attempts, disability, and substance use (Goldstein et al., 2016; Pagel, 2017).

PTSD has significant burdens on economy and health, since it associated with increase in the direct costs related to treatment and indirect costs related to loss of productivity. Literature revealed that PTSD may cause several chronic health dysfunctions such as cardiovascular diseases, bone and joint diseases, and gastrointestinal disorders (Ferry et al., 2015; Nichter, Norman, Haller, & Pietrzak, 2019). Therefore, it is vital to detect this psychological disorder to be able to take appropriate short- and long-term health actions to limit its negative consequences (Arnaboldi, Riva, Crico, & Pravettoni, 2017).

The prevalence of PTSD, according to Benjet et al. (2016) is dependent on the type of trauma experienced, its duration, intensity, and chronicity. The Palestinians living in the Gaza Strip had been suffering from repeated compact events since 2008 which left a serious impact on their mental health. For example, El-Deeb (2017) found that blockade was the most prominent cause of the high prevalence rate of PTSD. Several studies reported high prevalence of PTSD among variant categories of Palestinians following previous Israelis attacks against Gaza (N. Abu-El-Noor & Abu-El-Noor, 2020; N. I. Abu-El-Noor et al., 2016; Alhajjar, 2014). These findings were backed up by research from the war and post-conflict literatures, which showed that civilians living in war zones were more likely to be affected than those living elsewhere (Greenberg, Brooks, & Dunn, 2015; Ogle, Rubin, Berntsen, & Siegler, 2013).

Darwish et al. (2017) studied factors linked to Palestinian university students' distress levels. High distress was shown to be negatively connected with health satisfaction and favorably associated with a desire to emigrate among Palestinian university students. Furthermore, a systematic evaluation of 83 studies found that kids who have had severe or cumulative exposure to traumatic experiences are more likely to have cognitive impairments, scholastic challenges, and social-emotional-behavioral disorders (Perfect, Turley, Carlson, Yohanna, & Saint Gilles, 2016). Additionally, PTSD has been linked to decreased academic accomplishment (Betancourt, Meyers-Ohki, Charrow, & Tol, 2013; Strøm, Schultz, Wentzel-Larsen, & Dyb, 2016) and another study found that cognitive functions related to academic accomplishment, such as IQ, memory, attention, and concentration are all harmed by war stress (Husain, Allwood, & Bell, 2008; Saigh, Yasik, Oberfield, Halamandaris, & Bremner, 2006).

While the COVID-19 is overwhelming the world, which has negative impact on mental wellbeing of university students, some studies reported a prevalence of PTSD among lockdown university students one month after the COVID-19 pandemic that reached 19.5% among French students (Wathelet et al., 2021) and ranged between 2.7% (Tang et al., 2020) and 30.8% (Chi et al., 2020) among Chinese students. While Palestinian students living in the Gaza Strip were suffering for the stress of COVID-19, lockdown, preparing for final exams at the end of May, came the war of May 2021, which added to their stressors.

Since PTSD leads to many negative psychological effects (i.e. anxiety, personality disorders, suicidal ideation, suicide attempts, disability, and substance use) (Goldstein et al., 2016; Pagel, 2017), may cause several chronic health dysfunctions (i.e. cardiovascular, bone and joint and gastrointestinal disorders) (Ferry et al., 2015; Nichter et al., 2019) and economic burdens (i.e. increase direct costs related to treatment and

indirect costs related to loss of productivity); it would be very important to assess its level among individuals who are at high risk to develop PTSD (university students in our case) to be able to take appropriate short- and long-term health actions to limit its negative consequences (Arnaboldi et al., 2017). Therefore, the aim of this study was to assess level of PTSD among Palestinian university students living in the Gaza Strip following the 2021 war.

Materials and Methods

This cross-sectional study targeted Palestinian university students in the Gaza Strip following the war of May 2021 against the Gaza Strip. Data were collected between November and December 2023. The target population was all students enrolled in the Palestinian universities located in the Gaza Strip. Due to COVID-19, data were collected using an on-line questionnaire.

The link for the questionnaire was available to students through Facebook groups and students' blogs of all the universities at the Gaza Strip. A convenience sample of 1183 students completed and submitted the questionnaire. Convenience sampling was used because it is inexpensive, less time consuming and there was no need for a list with the names of all potential participants (Acharya, Prakash, Saxena, & Nigam, 2013) which was very difficult in our case to obtain a list of all students at all universities in the Gaza Strip.

Instrument

Our instrument consisted of two parts. The first part included sociodemographic information of participants. The second part was the Impact Event Scale-Revised (IES-R) which was developed by Weiss and Marmar (1997). The IES-R consists of 22 items that assess three PTSD symptom clusters: intrusions (seven items), avoidance (eight items) and hyperarousal (seven items).

On a 5-point Likert scale, participants were asked to give a score of how frequently each symptom was distressing for them in the previous seven days, with 0 indicating "not at all" and 4 indicating "extremely."

The IES-R was found to be valid and reliable as the internal consistency of the three subdomains were found to have high Cronbach's alpha values that ranged between 0.79 to 0.92 (Briere, 1977). IES-R was translated into the Arabic language by Abu-El-Noor and colleagues (N. I. Abu-El-Noor et al., 2016). The value of the Cronbach's Alpha of the Arabic version of the IES-R subdomains ranged between 0.713 and 0.817 and was 0.892 for total IES-R. Furthermore, internal consistency of the IES-R in this study was high and Cronbach's Alpha ranged between 0.795 and 0.879 for the subdomains and was 0.925 for the total of the IES-R items.

There was a variation for the cut-off score for IES-R that ranged between 22 to 44. A score above the cut-off indicates that a person is at a high risk for developing psychological problems (Dyregrov & Gjestad, 2003). For the purpose of this study, the researchers used a cut-off point of 33 to indicate post-traumatic symptoms.

Statistical analysis

The Statistical Package for Social Science (SPSS) was used for data analysis. The data were cleaned and tested for normal distribution and homogeneity, as well as other statistical assumptions. Basic descriptive statistics (percentage, range, mean and standard deviation) and frequency distribution tables were used in the data analysis. To compare means, one-way ANOVA and *t* tests were utilized. Pearson's correlation was utilized to examine if there were any relationships between some variables of the study.

Ethical considerations

Before conducting this study, an ethical approval to conduct the study was obtained from the Research Ethics Committee at the Islamic University of Gaza. All the methods of the study were carried out in accordance with relevant local guidelines and regulations which conforms to Helsinki declaration related to ethics in conducting research involving human participants.

At the beginning of the questionnaire, the aim of the study was included in the front page and participants were told that they have the choice to continue or decline answering the questionnaire. An informed consent was included at the beginning of the questionnaire followed by agree or disagree choices. If the participant would agree, he/she will choose to continue to the next page and if he/she chooses to decline, the system will not allow him/her to proceed to the next page. Participants were also reassured about the confidentiality of the data they would provide and about maintaining anonymity of their identity in the final report.

Results

Characteristics of participants

A total number of 1183 university students completed and submitted the questionnaire. Table 1 depicts the characteristics of the participants. Participants' age ranged between 17 and 48 years with a mean of 21.24 (SD ± 3.70). The majority of participants were females (67.5%, n=799) and single (85.9%, n= 1017). More than one third of the participants lives in Gaza Governorate (35.7%, n=423) and 25.8% are in their third year of study.

While only 38 (3.2%) students were injured during the war, 6.2% (n= 73) of them reported that a family member was injured and 71.2% (n = 843) reported that a relative or a friend got injured during the event. Among the participant, 1.5% (n=18) had a family member killed during the war while 30.2% (358) had a relative or a friend killed. Moreover, 30.9% (n= 802) reported that their houses were partially damaged while 1.4% (n = 16) had their houses completely damaged. Finally, 18.8% (n = 223) reported that they were forced to leave their houses for a period of less than five days due to event of the war, while 18.8% (n=268) were forced to leave their houses for five days or more.

Table 1: Characteristics of participants

Variable		Frequency	Percentage
Sex	Female	799	67.5
	Male	385	32.5
Marital status	Married	160	13.5
	Single	1017	85.9
	Divorced/widowed	7	0.6
Place of living	North Gaza	219	18.5
	Gaza	423	35.7
	Wosta	202	17.1
	Khanyounis	188	15.9
	Rafah	152	12.8
Year of study	First	344	29.1
	Second	246	20.8
	Third	305	25.8
	Fourth	242	20.4
	Fifth/sixth	24	2.0
	Master/doctoral	23	1.9
Got injured	Yes	38	3.2
	No	1146	96.8
	Yes	73	6.2

Family member got injured	No	1111	93.8
Family member Killed	Yes	18	1.5
	No	1166	98.5
Relative/ friend got injured	Yes	843	71.2
	No	341	28.8
A relative or a friend killed	Yes	358	30.2
	No	826	69.8
house got damage	No	802	67.7
	Yes, partially	366	30.9
	Totally	16	1.4
Forced to leave their houses	No	693	58.5
	Yes, for less than 5 days	223	18.8
	Yes, for 5 days or more	268	22.6

Analysis of IES-R scale

The results came from data analysis revealed that only 51 (4.3%) participants had a score less than 24 which pose no clinical concern (table 2). On the other hand, results showed that the great majority of the students (n=1084, 91.6%) had scores higher than 33 (the threshold cut-off) on IES-R scale with 1050 (88.7%) had a score of 37 or more which reflects severe level of PTSD.

Table 2: Levels of PTSD

	Score range	Frequency	Percent
No PTSD	Less than 24	51	4.3
Mild PTSD	24 -32	49	4.1
Moderate PTSD	33-36	34	2.9
Severe PTSD	37 or more	1050	88.7
Total		1184	100.0

Table 3 shows the results of the IES-R scale and its subdomains. The highest mean of the subdomains belongs to "Intrusion" (total score 21.88 ± 6.37 and mean=2.77± 0.86) followed by "Avoidance" (total score 19.28 ± 6.75 and mean=2.28± 0.77) while hyper-arousal subscale received the least mean (total score 15.02 ± 4.64 and mean=2.01± 0.75).

Table 3: Total scores and means of the IES-R subscales

	No. of items	Total score	Std. Deviation	Mean*	Std. Deviation	Cronbach's Alpha
Intrusion	8	21.88	6.37	2.77	0.86	0.879
Avoidance	8	19.28	6.75	2.28	0.77	0.795
Hyper-arousal	6	15.02	4.64	2.01	0.66	0.813
Total IES-R	22	56.19	16.54	2.55	0.75	0.925

Mean* = total score/ number of items

Table 4: Means & standard deviations of the IES-R by items (descending order)

Statement	Mean	Std. Deviation
Intrusion		
1. "I had trouble falling asleep"	3.05	1.17
2. "Pictures about it popped into my mind"	3.04	1.07
3. "I had waves of strong feelings about it"	2.99	0.99
4. "Any reminder brought back feelings about it"	2.92	1.10

5. "I thought about it when I didn't mean"	2.70	1.19
6. "Other things kept making me think about it"	2.56	1.16
7. "I had dreams about it"	2.52	1.35
8. "I found myself acting or feeling as if I was back at that time"	2.34	1.28
Avoidance		
1. "I tried to remove it from my memory"	2.69	1.12
2. "I was aware that I still had a lot of feelings about it, but I didn't deal with them"	2.43	1.22
3. "I tried not to think about it"	2.43	1.18
4. "I avoided letting myself get upset when I thought about it or was reminded of it"	2.42	1.12
5. "I tried not to talk about it"	2.30	1.24
6. "I stayed away from reminders about it"	2.12	1.23
7. "My feelings about it were kind of numb"	1.86	1.35
8. "I felt as if it hadn't happened or wasn't real"	1.73	1.40
Hyperarousal		
1. "I felt irritable and angry"	2.97	1.06
2. "I had trouble concentrating"	2.89	1.18
3. "I was jumpy and easily startled"	2.85	1.20
4. "I felt watchful or on-guard"	2.67	1.10
5. "I had trouble staying asleep"	2.56	1.32
6. "Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart"	2.14	1.43

Table 4 reports the mean for each item of the IES-R subdomains ranked from the highest mean to the lowest mean. The item that had the highest mean (3.05 ± 1.17) in the intrusion subdomain was 'I had trouble falling asleep' while the item 'I found myself acting or feeling as if I was back at that time' received the lowest mean (2.34 ± 1.28) in the same subdomain. In the avoidance subdomain, the items that received the highest and the lowest means were 'I tried to remove it from my memory' (2.69 ± 1.12) and 'I felt as if it hadn't happened or wasn't real' (1.73 ± 1.40) respectively. Finally, the items in the hyperarousal subdomains that received the highest and lowest score were 'I felt irritable and angry' with a mean of 2.97 ± 1.06 and 'Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart' with a mean of 2.14 ± 1.43 .

Variables affecting IES-R scores and its subscales

The results of *t* test revealed that there were statistically significant differences related to several variables (Table 5). Differences between males and females, between participants who got injured and those who did not, participants who had a family member got injured and those who hadn't, participants who had a relative or a friend who got injured and those who hadn't, participants who had a family member killed during the war and those who hadn't, and participants who had a relative or a friend killed during the war and those who hadn't were all statistically significant.

On the other hand, results of one-way ANOVA test revealed that differences among participants in relation to year of study, marital status or place of living were not statistically significant. But differences among participants who had their homes damaged and differences among participants who had to evacuate their houses were statistically significant (table 5). Differences in means of IES-R and its subdomains among participants who had to evacuate their houses were between participants who hadn't to evacuate their houses and those who had to leave for less than five days and between them and those who had to leave their houses for five days or more (*p* values

ranged between < 0.001 and 0.03). Differences in means of IES-R and the hyperarousal subdomain in relation to participants' degree of damage to their houses were among participants whose houses were not damaged and those whose houses were partially damaged ($p = 0.007$). Differences also were found between participants' means of IES-R, intrusion and hyperarousal in relation to degree of damage to the house among participants whose houses were not damaged and those whose houses were completely damaged (p values ranged between < 0.001 and 0.008). Differences between those whose houses were partially damage and participants whose houses were completely damage were different only in the intrusion subdomain ($p = 0.018$).

Table 5: Results of statistically significant differences among participants in relation to different variables

		Intrusion		Avoidance		Hyper-arousal		Total IES-R	
		Mean	p	Mean	p	Mean	p	Mean	p
Gender	Male	2.48	<0.001	2.14	<0.001	1.78	<0.001	2.32	<0.001
	Female	2.90		2.34		2.12		2.67	
Got injured	Yes	3.10	0.015	2.56	0.087	2.35	0.001	2.91	0.003
	No	2.76		2.27		2.00		2.54	
Family member injured	Yes	3.04	0.001	2.54	0.008	2.28	0.001	2.86	0.002
	No	2.75		2.26		1.99		2.53	
Relative/ friend injured	Yes	2.73	0.007	2.23	0.001	1.97	<0.001	2.51	0.001
	No	2.92		2.44		2.17		2.73	
Family member killed	Yes	3.42	0.001	2.63	0.049	2.41	<0.001	3.06	0.001
	No	2.77		2.27		2.00		2.55	
Relative/ friend injured	Yes	2.78	0.729	2.26	0.649	2.01	0.865	2.56	0.975
	No	2.76		2.28		2.01		2.55	
Home damaged	No	2.73	0.001	2.24	0.016	1.96	<0.001	2.51	0.001
	Partially	2.82		2.34		2.09		2.63	
	Totally	3.45		2.66		2.48		3.09	
Have to evacuate home	No	2.66	<0.001	2.18	<0.001	1.92	<0.001	2.45	<0.001
	< 5 days	2.84		2.36		2.11		2.66	
	≥ 5 days								

Discussion:

This study aimed to investigate the prevalence of PTSD among Palestinian university students following the May 2021 war, which was the fourth war against the Gaza Strip since 2008. These wars had left physical and psychological wounds that are not forgotten from the memory of the Palestinian people which may affect their mental health status due to the unusual circumstances that they face as a result these wars and the imposed siege against the Gaza Strip since 2006.

There are many forms of sufferings that Palestinian university students experience; such as wars, unemployment, poverty, security instability, and siege. Therefore, the researchers aimed to assess the effect of the exposure to the May 2021

war-related traumatic impact on university students' mental health, more specifically post-traumatic stress disorder. Result showed that the majority of participants (88.7%) had severe level of PTSD, while 2.9% had moderate and 4.1% mild level of PTSD and only 4.3% had no symptoms of PTSD. These findings are congruent with results from previous studies which revealed that there is a positive correlation between exposure to traumatic events and the likelihood of developing PTSD symptoms (McFarlane, 2013; Neria, DiGrande, & Adams, 2011; Stone & Shechner, 2011).

Accordingly, it is expected that Palestinian students who experienced repeated exposures to war-traumatic events to report high prevalence of PTSD symptoms. This result is concordant with other studies conducted by El-Khodary, Samara, and Askew (2020), Kakaje et al. (2020), Morgos, Worden, and Gupta (2008), and Pat-Horenczyk et al. (2009) which revealed a high prevalence of PTSD symptoms among adolescents and school children living in war zones such as Palestine, Syria and southern Darfur. Our results also were congruent with other previous studies revealing high association between exposure to war-traumatic events and PTSD criteria (Morgos et al., 2008; Pat-Horenczyk et al., 2009).

Prevalence of PTSD symptoms is common among individuals, including university students, who were subject to traumatic events. For example, some studies reported a prevalence of PTSD among lockdown university students one month after the COVID-19 pandemic that reached 19.5% among French students (Wathelet et al., 2021) and ranged between 2.7 (Tang et al., 2020) and 30.8% (Chi et al., 2020) among Chinese students. Also, PTSD symptoms were common among university students who were exposed to war events. A study conducted to measure symptoms of PTSD among Darfuri female university students found that 80.9 % of the participants met DSM IV criteria for PTSD symptoms (Badri, Crutzen, & Van den Borne, 2012).

Previous studies showed that high prevalence of distress and PTSD were common among Palestinian university students. For example, 47% of students living in the East Jerusalem and West Bank reported moderate to high distress levels (Darwish et al., 2017). This study did not include students from the Gaza Strip which is more subject to war events than the West Bank and East Jerusalem which are the other part of the Palestinian occupied territories, but they are geographically separated from the Gaza Strip. Two other studies reported high level of distress and PTSD symptoms among Palestinian university students from the Gaza Strip two and three years following the July-August 2014 war against Gaza. In a study conducted by Thabet and Sultan (2016), they found that the prevalence of traumatic events among students from the Gaza Strip was high. For example, they reported that the following events were traumatic to them 'watching mutilated bodies in TV' (92.7%), 'witnessed the shelling and destruction of other's homes' (47.4%), 'witnessing firing by tanks and heavy artillery at neighbors' homes' (47.1%) and 'forced to move from home to a safer place during the war' (42.9%). In another study, El-Deeb (2017) found that the prevalence of PTSD symptoms among university students was 90%. These results support the results came from our study which revealed that 91.6% of our participants showed moderate to high level of PTSD symptoms.

Participants of this study were faced with many stressors that contributed to the high prevalence of PTSD symptoms. Literature showed that having an injury to self or to others or/and witnessing death and violence contribute to increasing the level of trauma and as a result, increasing level of PTSD (Phillips, LeardMann, Gumbs, & Smith, 2010; Sareen et al., 2007; Shaar, 2013). Moreover, direct intense threats to own safety or safety of beloved ones were reported to be traumatic (Waller et al., 2012), which becomes more evident among younger population such as our participants (Center for Substance Abuse

Treatment, 2014). Other stressors that may contributed to the high level of PTSD among our participants include the blockade imposed against Gaza Strip in 2006, the high unemployment rate among Palestinians living in the Gaza Strip which reached 42.1% (Palestinian Central Bureau of Statistics, 2021), high poverty rate as 62% of the population of Gaza was food insecure (The World Bank, 2021). Furthermore, this generation of youngsters had witnessed four wars against the Gaza Strip that took place in 2008, 2011, 2014 and recently in May 2021.

Besides exposure to war-related trauma, this war took place during the midst of COVID-19 pandemic, which by itself is a contributor for distress. This pandemic was associated with lockdown and online teaching, which is a new experience for students in the Gaza Strip. Along with worrying about their future careers, the researchers believe that these stressors augmented the impact of the May 2021 war and contributed to the high prevalence of PTSD symptoms among Palestinian university students living in the Gaza Strip. Palestinians in the Gaza Strip are living in a state of constant trauma, which makes life more difficult for them and puts them at a higher risk to develop mental health disorders (El-Khodary et al., 2020).

The intrusion domain received the highest mean score (2.77) followed by avoidance (2.28) and hyper-arousal which received the least mean (2.01). These results are congruent with the results of other studies which showed that avoidance was the most prominent symptom followed by avoidance and hyper-arousal among participants who survived the 2008 and 2014 wars against the Gaza Strip (N. I. Abu-El-Noor et al., 2018; N. I. Abu-El-Noor et al., 2016; Alhajjar, 2014).

Our study found statistically significant differences among participants in relation to several variables. Differences between males and females, between participants who got injured and those who did not, participants who had a family member got injured and those who hadn't, participants who had a relative or a friend got injured and those who hadn't, participants who had a family member killed and those who hadn't, and participants who had a relative or a friend killed during the war and those who hadn't were all statistically significant.

These findings are in-line with previous studies (Dubow et al., 2009; Qouta, El-Sarraj, & Punamäki, 2001; Thabet & Sultan, 2016), indicating that males reported more exposure to war-traumatic events than females. From our point of view, this is due to our Palestinian culture. Young males are more mobile during the war activities, and they participate in helping to provide first aid, they are present at hot sites and hospitals to provide help and to donate blood, participate in evacuation activities and they take active parts in searching for, removing injured/killed people from the rubble of demolished houses which endangers their lives and transferring them to health care facilities. Therefore, they are exposed to see more blood and torn bodies.

This will put them at higher risk to have higher level of PTSD symptoms which is supported by literature which indicated that harsh events lead to worsening mental health outcomes (Hoge et al., 2004) and that fear of death or injury was associated with PTSD and increased reporting of psychological and physical symptoms (Iversen et al., 2008; Phillips et al., 2010). This also helps in explaining why participants who had a family member injured or killed or a friend/relative injured or killed or those who have their homes demolished, partially or totally, or those who were forced to leave their homes had higher scores of the IES-R and its subscales.

This is also supported by literature. For example, participants who experienced traumatic events themselves and/or their family members, friends and relatives passed the same experience were subject to PTSD (M. K. Abu-El-Noor et al., 2022). This is because when exposure to traumatic events increases, the likelihood of developing PTSD

symptoms also increases (El-Khodary et al., 2020; McFarlane, 2013; Slone & Shechner, 2011).

On the other hand, the current study revealed that differences among participants in relation to year of study, marital status or place of living were not statistically significant. Such differences can be attributed to several reasons. The war was very violent and targeted all areas of the Gaza Strip. It did not differentiate between a married or a single person, a student in the first or fourth year, and those who live in a village or city. All were hurt by the war event.

Limitations of the study

This study has a few limitations. Limitations included the use of convenience sampling, which does not guarantee creating a representative sample of the universities in the Gaza Strip and limit generalization of the results. Nonetheless, the large sample size may mitigate these limitations.

Conclusion and Recommendations

The results of this study showed that the majority of the university students participated in this study had high scores of the IES-R scale and its subscales, suggesting positive symptoms of PTSD. Only 4.3% of the participants had not symptoms of PTSD. The mean for IES-R score was 2.55. The most frequent symptoms of IES-R subscales related to “Intrusion” (mean=2.77) followed by “Avoidance” (mean=2.28) and “Hyper-arousal” (mean=2.01).

The results of this study serve as an alarm to take actions to prevent/minimize the negative consequences of exposure to such traumatic events as such high prevalence rates of PTSD among university students will have negative impact on their physical and mental health in the coming future. This should serve as a stimulus for healthcare providers, health policy makers and university staff to take immediate actions to deal with the consequences of this brutal, traumatic event by providing required treatments and offering counseling to the victims aiming at ameliorating PTSD symptoms and buffering its consequences. These students, especially those with underachievement, need help and support during their study time.

Diab and Schultz (2021) suggested providing effective help for underachieving students to prevent further worsening in their educational achievement and wellbeing, as well as to protect their motivation, through remedial education and group counseling that allow for sharing of feelings and experience, stress and anxiety-relieving techniques, and practical assistance in study skills to improve their academic achievement and their wellbeing. In addition, more research on effective school-based multilevel techniques for lowering chronic stress and boosting study abilities and achievement in emergencies should be conducted.

Data availability statement

The data that support the findings of this study are available upon request from the corresponding author.

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Declaration of competing interest

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