

Investigate of Coping Strategies and Social Supports are Associated with Post-Traumatic Stress Disorder Symptoms in Saudi Paramedics 2023

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Abstract:

Background:

Post-traumatic stress disorder (PTSD) can manifest in individuals following a traumatic event. There is a paucity of studies focusing on PTSD symptoms in Saudi paramedics. Risk factors exploring the link between trauma and Post-traumatic Stress Disorder have been extensively explored in Saudi paramedics, however, less is known about Saudi paramedics. Ambulance personnel experience many critical events that may increase their risk of developing post-traumatic stress disorder and other mental health disorders. In the previous literature, some studies show that the prevalence of PTSD in ambulance workers is higher than that of other first responders and that ambulance personnel in developing countries have a higher prevalence of PTSD than those in developed countries, post-traumatic stress disorder is characterized by severe psychological responses to a traumatic event, such as an earthquake, a war, or sexual assault. Specific clusters of symptoms exist in PTSD, including trauma-related intrusive thoughts and memories, avoidance tactics, and hyper arousal. Individuals with PTSD reported a decline in physical, mental, and social function, in addition to reduced quality of life.

Aim of the study: To Investigate of coping strategies and social supports are associated with post-traumatic stress disorder symptoms in Saudi paramedics 2023.

Method: Data were collected from 200 paramedics working in the Saudi Red Crescent Authority from September to December 2023. Participants completed questionnaires measuring PTSD symptoms (the Screen of Post-Traumatic Stress Disorders; SPTSD), passive and active coping strategies, and three forms of social support: support from friends, family and organizational support. Associations between coping strategies, social support and PTSD symptoms were investigated.

Results: Show regarding age majority of the study groups from the 40-49 years were (33.0%) the gender many of the respondents were male (85.0 %) the marital status the majority of them married were (42.0%) the education status the majority of the respondents bachelor paramedic were (43.0%) the monthly income the most of participant <8000 were (42.0%) the

nationality the majority of the respondents Saudi were (89.0%) while Non-Saudi were (11.0%) .

Conclusion: post-traumatic stress disorder symptoms in Saudi paramedics should be paid attention to. Social support adjustments were positive resources associated with PTSD symptoms. Moreover, mental adjustment could mediate the relation between social support and PTSD symptoms .

Keywords: Investigate, coping strategies, social supports, associated, post-traumatic stress, Saudi paramedics, Saudi Arabia .

Introduction

Background

Changes in post-traumatic stress disorder symptoms diagnostic criteria for PTSD raise specific concerns on the evaluation of in Saudi paramedics PTSD, since they state that a life-threatening traumatic or debilitating medical condition is not necessarily considered in Saudi paramedics.[1] Therefore, for traumatic patients to meet criterion , the individual must be exposed to acute, severe complications or other extreme adverse events. [2]

Ambulance personnel include paramedics, emergency medical technicians (EMTs) and other workers who deliver on-site emergency medical care and transport prior to hospital admissions during accident and emergency medical situations [3]. These professionals are exposed to high levels of occupational trauma [4] and report more psychological problems than other health workers [5]. Post-Traumatic Stress Disorder (PTSD) is common among ambulance personnel and its prevalence is higher than that found in the general population [6] defined coping as a key part in their transactional theory of stress as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person. [7] They classified two types of appraisals that precede the coping process; primary appraisal which the individual usually identifies the potential harm, loss, threat or challenge posed by the stressor, and then a secondary appraisal which is conducted in which the individual is able to evaluate coping options and available resources. [8] These appraisals provide the basis for coping that leads to two categories of coping: problem-focused strategies that aim to treat a stressful problem and emotion focused strategies that focus on reducing the emotional consequences of the problem [9]. Emergency medical service (EMS) personnel are exposed to a variety of work related stressors. These stressors range from critical incidents associated with the provision of patient care to chronic work-related problems (e.g., conflict with the supervisor, lack of support from colleagues, inadequate salary) [10]. Recurrent exposure to stressors may predispose EMS personnel to develop stress reactions such as burnout and post-traumatic stress disorder (PTSD) [11]. Therefore, it is critical to assess the mental health of EMS providers, who by the nature of their frontline work are at high risk for developing stress reactions.[12]

The general prevalence of PTSD in ambulance personnel has been calculated to be 11% internationally [13] but the estimates vary significantly between countries Reports range from 5.6% in Brazil to as high as 94% in Iran [14]. These differences between countries might be affected by various factors including differences in organizational structures, trauma status, scale types, sample size and methods [15]. However, it is also possible that the reported

prevalence rates could be affected by the coping strategies ambulance personnel use and the social support available to them. [1]

These coping strategies can be used before, during and after emergency cases [16]. For example, research suggests that they use emotional suppression during stressful events to be more focused on their duties and after events they might employ storytelling or avoidance as coping strategies [17]. Strategies can be divided into those which are active, such as seeking emotional support from others or doing some sports activities, and those which are passive, such as self-blaming or using drugs. [18] Overall, research evidence suggests that active coping strategies are effective in reducing PTSD symptoms and stress in ambulance personnel, but passive coping methods increase the risk of PTSD . [19] (Kerai et al., 2017; Brooks and Brooks, 2021).

Review of literatures

A meta-regression analysis reveals that ambulance workers have the highest estimated prevalence (14.6%) among all occupational groups of rescue workers (like police, EMS, or firefighters) [20]. Data from high-income countries (HICs) indicate a wide range of PTSD prevalence (from 4 to 22%) among ambulance workers [21]. Unfortunately, there is a paucity of data related to mental health problems among EMS personnel from low- and middle-income countries (LMICs).[22]

Study by Kerai et al 2017 reported that Symptom severity indicated by mean score was relatively higher in this study population when compared to a similar population in Mansoura (Egypt) and rescue workers in Lahore (Pakistan), and Western Cape Province (South Africa) [23]. This variation in estimates is attributable to several reasons but primarily to differences in population and context.

Study by Niziurski et al 2018 indicated that negative emotion was positively associated with PTSD symptoms, while positive attitude had a negative association. Coping strategies are significant resources for mental adjustment in in Saudi paramedics to prevent PTSD symptoms. [24] Patients with highly positive attitude always expect the best outcome and view life events in a positive light. In accordance, another study reported that coping strategies related to positive emotion were negatively correlated with symptoms of PTSD.[25] Screening for mental coping strategies at the beginning of treatment might help to predict PTSD symptoms in in Saudi paramedics.

Study by Alaqeel et al. (2019), reported that prevalence rate of PTSD in Saudi ambulance personnel is 26.9%. However, this is the only study that has examined the prevalence of PTSD symptoms in Saudi paramedics and it has three notable limitations. First, the sample size was small (74 participants) and second, all of the participants were recruited from one Red Crescent authority (King Abdulaziz Medical City) that is located in only one region of Saudi Arabia (Riyadh region). As such, it is hard to generalize the results to the paramedics in other regions of Saudi Arabia. Third, the study used the PTSD Checklist-Civilian version (PCL-C) which measures reactions to only one specific traumatic event. [25] Paramedics face multiple and various potentially traumatic events in their work and it is important to investigate their possible reactions more broadly.

Study by () found that the rates of PTSD in the study are higher than those found in a previous cross-sectional study in Saudi Arabia [26]. This difference may be due to three main

factors. First, our study was larger (217 vs 74 participants) and may have managed to capture a greater range of participants who have been exposed to these high levels of stress. Second, we measured PTSD using the SPTSS measure, which differs to the measure used by [25]

The results of study demonstrated that social support had a negative correlation with symptoms of PTSD in Saudi paramedics, which is consistent with prior reports.[24] It is reported that a lack of positive support is a predictor of psychological co-morbidity.[27] Thus, additional attention should be paid to the importance of social support, calling for active interventions to reduce PTSD symptoms in Saudi paramedics. On the contrary, Shnaider et al 2017 demonstrated that total support, as well as social support from family and friends, was not correlated with the initial severity of PTSD symptoms, while a significant correlation was found between social support from significant others and initial severity of PTSD. However, another study found that social support had a significant correlation with PTSD only when involving family support.[28] Thus, different support types should be considered when developing effective strategies for PTSD .

Rationale

There has been a lack of cross-cultural research to explore the reasons for different PTSD prevalence rates between developed and developing countries, and to explore the kinds of support which paramedics would like to receive. Moreover, there is a need for further research to understand risk and protective factors in ambulance personnel, and the interventions which may be most effective for ameliorating symptoms of mental distress. To address these gaps, this thesis aimed to Investigate of Coping strategies and social support are associated with post-traumatic stress disorder symptoms in Saudi paramedics, and the support which organisations should provide to Saudi paramedics. Particular focus on Saudi Arabian ambulance personnel who face high rates of critical incidents . Therefore, intervention management that focusing on improving perceived social support as well as , especially negative emotion and positive attitude, may be useful for reducing PTSD symptoms in Saudi paramedics. Three main objectives in were as follows to estimate the prevalence rate of posttraumatic stress disorder (PTSD) symptoms among Saudi paramedics, to investigate which types of coping strategies were associated with PTSD symptoms among Saudi paramedics, to explore which sources of social support were associated with PTSD symptoms among Saudi paramedics.

Aim of the study

To investigate of coping strategies and social supports are associated with post-traumatic stress disorder symptoms in Saudi paramedics 2023.

Specific objective

To investigate which types of coping strategies were associated with post-traumatic stress disorder symptoms among Saudi paramedics .

Methodology

Study setting:

This study has been conducted among working for Saudi Red Crescent Authority in Saudi Arabia were recruited to the study between from September to December 2023, invited to participate Saudi Red Crescent Authority in Saudi Arabia was sent to paramedics in the regions of Saudi Arabia (Middle, Eastern, Western, Northern and Southern regions), Participants were able to complete the questionnaire online or to use a paper version.

Study Population

The conducted from Saudi Red Crescent Authority in Saudi Arabia were recruited, among them, 200 paramedics agreed to participate in an in-depth semi-structured interview .

Study Design

Cross-sectional, descriptive statistics, the paper copies were sent by post (100 copies) to paramedics working in rural cities, where Wi-Fi availability is poor. 102 participants responded online. This study was approved by the Research Ethics Committee .

Inclusion criteria:

- Saudi Red Crescent Authority staff approved
- Aged 20-49 years
- Able and willing to participate in the study .

Exclusion Criteria

- Not able and refuses to participate in the study.

Sample size:

Using EPI info version 24, the study sample size has been determined based on the following assumptions :

Since there is not an official release, e.g., by the "Central Department of Statistics and Information" in Saudi of Saudi Red Crescent Authority staff of the exact census of Makah in Saudi Arabia residents falling within the study's Red Crescent paramedics staff category, a source population size of the same of has be assumed. (Definitely, the true population of such category is greater, also to be most conservative, the least number needed for a reasonably large sample size that allows generalizability of the study result. Knowingly, sample sizes obtained from source population sizes above are not significantly different). Accordingly, a sample size (n) would be 200. In order to account for non-response and achieve more generalizable results, the investigator has be increase the sample size up to 200.

Sampling Technique:

The main aim of the in-depth interviews was to investigate of coping strategies and social supports are associated with post-traumatic stress disorder symptoms in Saudi paramedics. Open-ended questions were asked during the interviews to allow the paramedic staff to share their experience ,

Social support was measured Social Support Scale. The scale consists of items that cover three sources of social support: family, friends and government or non-government organization support (in the current study, the government or non-government organization was changed to Saudi Red Crescent Authority). An example item is "I feel that the support that I have received was helpful" . All paramedics preferred the Arabic language during the interview. Therefore, all data processed were in Arabic; when the data were analyzed, the

researchers translated it into English. Thematic analysis was used. The interview durations were 20–30 min. Both researchers were aware of the study's confirm ability, credibility, and transformability. For example, both researchers were listening to the interviews and ensured that the correct meaning was inferred. Also, both researchers participated in analyzing the data and coding, and both agreed about the study's themes.

Sampling method:

All (200) Saudi Red Crescent Authority staff were invited to participate. Among them, 200 Saudi Red Crescent Authority staff agreed to participate in an in-depth semi-structured interview.

Data collection method:

Self-administered questionnaire has been given to all participants. Open-ended questions were asked during the interviews to allow the paramedic staff to share their experience, such family, friends and government or non-government organization support (in the current study, the government or non-government organization was changed to Saudi Red Crescent Authority). An example item is "I feel that the support that I have received was helpful"

Data Collection Technique

This research was approved by the Research Ethics Committee, Saudi Arabia. An information sheet and consent form were distributed to all participants, correlations were used to explore the associations between PTSD symptoms and the social support and coping subscales. to investigate the predictors of PTSD entered at three different steps. Step 1 included age and years of service, step 2 included family, friends and organizational support and step 3 included active and passive coping .

Data Entry and Analysis

Data has been collected and coded and then data were analyzed using the IBM SPSS (version 26). Descriptive statistics were calculated for each of the study variables, e.g., number, proportions, cumulative proportions, mean and standard deviation, etc. has been displayed, as appropriate. Analytically, a parametric technique . Otherwise, a non-parametric alternative .

Pilot Study

A pilot study has been done on 10 Saudi patients who meet the study's eligibility criteria. The pilot study has been mainly help examine both the instrument's content validity and construct validity issues, alongside with other needed information.

Ethical Considerations

Consents forms were signed by participants and collected prior. They all understood that participation was voluntary, and they knew that they had the right to skip any question that they wanted. In addition, they were aware that they had the right to stop the interview and withdraw at any stage of the study. This study also ensured that all participants would have anonym zed responses in the case of publication .

Budget : Self-funded.

Result**Table 1. Distribution of demographic characteristics of participants (N=200)**

Demographic Characteristics	N	%
Age		
20-29	54	27
30-39	40	20
40-49	66	33
More than 49	40	20
Gender		
Female	30	15
Male	170	85
Marital Statue		
Single	56	28
Married	84	42
Unmarried	44	22
Diverse	16	8
Level of education		
Physician	30	15
Diploma paramedic	84	42
Bachelor paramedic	86	43
Years of experience		
<1	68	34
10-20	44	22
21-30	50	25
≥30	38	19
Monthly income		
<8000	84	42
8000-15,000	82	41
≥15,000	34	17
Nationality		
Saudi	178	89
Non-Saudi	22	11

Regarding the distribution of the socio-demographic details among the participant regarding age majority of the study groups from the 40-49 years were (33.0%) followed by 20-29 years were (27.0%) while 30 to 39 years and more than 49 years were (20.0%) , regarding the gender many of the respondents were male (85.0 %) while female were (15.0%), regarding the marital status the majority of them married were (42.0%) while single were (28.0%) but unmarried were (22.0%) but divorced were (8.0%), regarding the education status the majority of the respondents bachelor paramedic were (43.0%) but diploma paramedic were (42.0%), while physician were (15.0%), regarding the years of experience the most of the participants answer < 1 were (34.0%) while 21-30 were (25.0%) but 10-20 were (22.0%) while ≥30 were (19.0%), regarding the monthly income the most of

participant <8000 were (42.0%) while 8000 -15,000 were (41.0%) while ≥15,000 were (17.0%), regarding the nationality the majority of the respondents Saudi were (89.0%) while Non-Saudi were (11.0%) .

Table 2. Distribution of post-traumatic stress disorder, coping strategies and social support subscales .

Measures	N	%	Chi-square	
Post-traumatic stress disorder			X ²	P-value
Avoidance	70	35	16.120	0.0003*
Arousal	88	44		
Re-experience	42	21		
Brief coping				
Active	132	66	19.845	<0.001*
Passive	68	34		
Social support				
Family and friends	58	29	10.360	0.0056*
Red crescent	88	44		
Both	54	27		

Regarding the distribution of post-traumatic stress disorder , coping strategies and social support subscales regarding post-traumatic stress disorder showed that were a significant relation were P-value=0.0003, X² 16.120 the majority of the study groups arousal were (44.0%) followed by avoidance were (35.0%) while Re-experience were (21.0%) , regarding Brief coping showed that were a significant relation were P-value=0.001, X² 19.845 many of the respondents active were (66.0 %) while passive were (34.0%), regarding social support showed that were a significant relation were P-value=0.0056, X² 10.360 the majority of them Red crescent were (44.0%) but Family and friends were (29.0%) while both were (27.0%) .

Figure (1): Distribution of post-traumatic stress disorder.

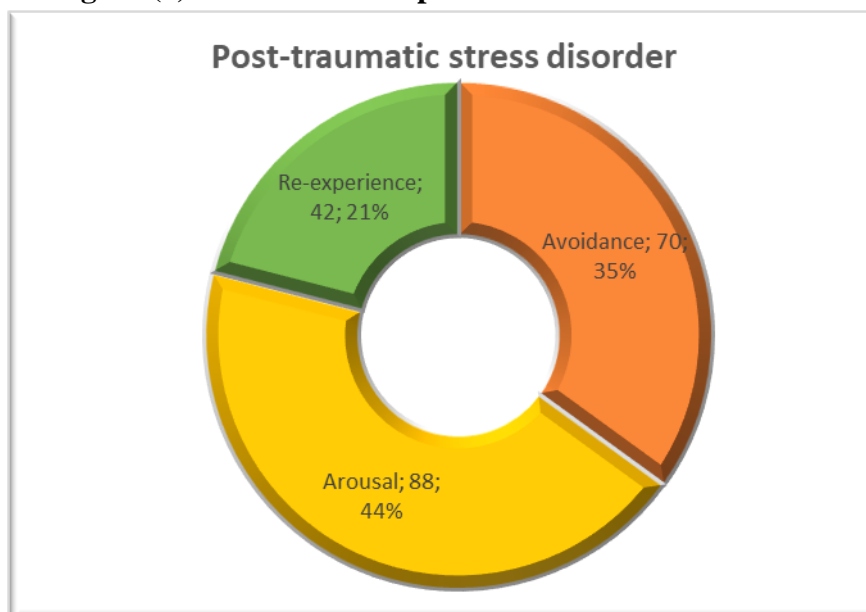


Figure (2): Distribution of social support subscales

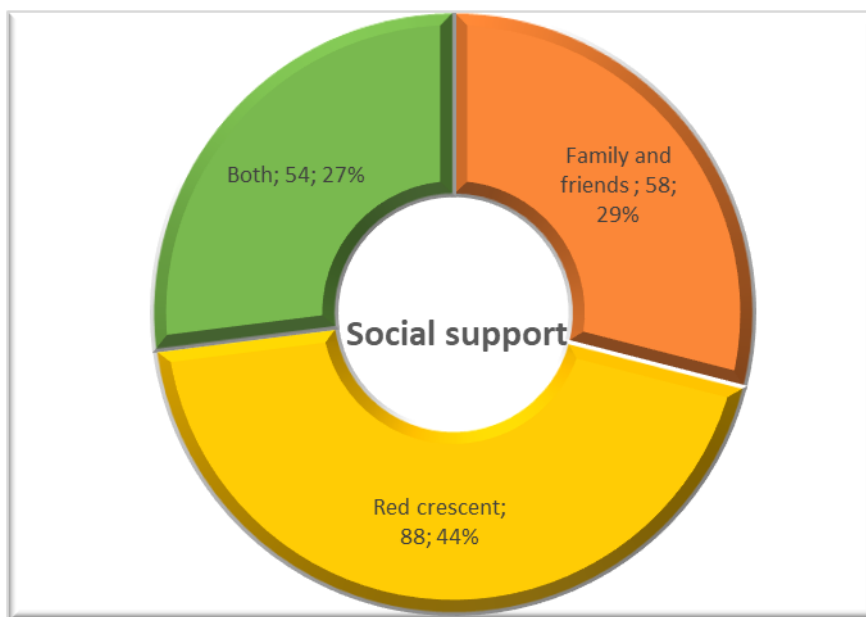


Figure (3): Distribution brief coping strategies .

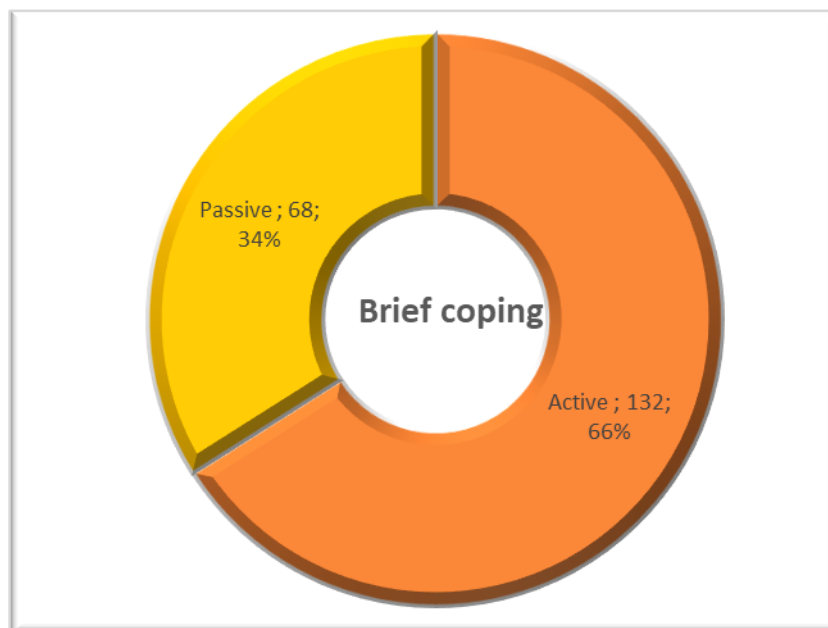


Table 3 . Distribution of prevalence of psychological disorders among in Saudi paramedic .

variables	N	%
Anxiety disorder		
None	124	62
Generalized anxiety disorder	36	18
Social phobia	24	12
Panic disorder	16	8

Mood disorder		
None	96	48
Major depressive disorder	58	29
Bipolar disorder	46	23
Psychotic disorder		
None	154	77
Schizophrenia	30	15
Delusional disorder	16	8
Use of psychiatric medication		
None	134	67
Antidepressant medication (e.g., SSRI, SNRI, etc.)	22	11
Mood stabilizer medications (e.g., valproic acid, lithium, carbamazepine, etc.)	10	5
Benzodiazepine (e.g., Xanax, Rivotril, Valium, Ativan, etc)	18	9
Antipsychotic medications (e.g., Quetiapine, Olanzapine, etc.)	16	8

Regarding the distribution of prevalence of psychological disorders among in Saudi paramedic regarding anxiety disorder majority of the study none were (62.0%) followed by generalized anxiety disorder were (18.0%) while social phobia were (12.0%) but Panic disorder , regarding mood disorder many of the respondents were none (48.0 %) while major depressive disorder were (29.0%) followed by bipolar disorder were (23.0%) , regarding psychotic disorder the majority of them none were (77.0%) while schizophrenia were (15.0%) but delusional disorder were (8.0%) , regarding the use of psychiatric medication the majority of the respondents none were (67.0%) but Antidepressant medication were (11.0%), while benzodiazepine were (9.0%), followed by Antipsychotic medications were (8.0%) while Mood stabilizer medications were (5.0%) .

Table 4: Distribution of factors the performance of Saudi paramedics .

	N	%
Decontaminate the ambulance		
Yes	94	47
No	66	33
Not applicable	40	20
Administer medications		
Yes	138	69
No	38	19
Not applicable	24	12
The plan to provide care to life threatening patient in closed roads		

Treat on site	102	51
Transport to close facility	72	36
Air ambulance	20	10
Do nothing	6	3
Number of providers in ambulance		
1	50	25
2	32	16
3	100	50
4	18	9

Regarding the distribution of factors the performance of Saudi paramedics regarding decontaminate the ambulance majority of the study answer Yes were (47.0%) followed by No were (33.0%) while Not applicable were (20.0%), regarding Administer medications most of the respondents answer Yes were (69.0 %) while No were (19.0%) followed by Not applicable were (12.0%) , regarding plan to provide care to life threatening patient in closed roads the majority of the respondents treat on site were (51.0%) but transport to close facility were (36.0%), while Air ambulance were (10.0%), followed by do nothing were (3.0%), regarding the number of providers in ambulance the most of participant 3 were (50.0%) while 1 were (25.0%) while 2 were (16.0%) but 4 were (9.0%) .

Discussion

The present study investigates of coping strategies and social supports are associated with post-traumatic stress disorder symptoms in Saudi paramedics. In the present study regarding the socio-demographic show age majority of the study groups from the 40-49 years were (33.0%), the gender many of the respondents were male (85.0 %), regarding the marital status the majority of them married were (42.0%), years of experience the most of the participants answer < 1 were (34.0%), the monthly income the most of participant <8000 were (42.0%), the nationality the majority of the respondents Saudi were (89.0%). (See table 1)

In the other study by DeTore et al 2021 the prevalence of PTSD symptoms was 17.3%, which is higher than that among Australian women (9.25%) [29] , and lower than that in participants of a British study (36–45%). [30] It was reported that no advanced stage patients were diagnosed with PTSD, while 6.9% of patients with early stage OC had PTSD symptoms.[31] This variability might be attributed to the differences in the composition of study samples, or different dimensional tools being employed. Nevertheless, previous results indicated that patients with may be affected by PTSD symptoms to differing degrees. Therefore, it is important to monitor PTSD symptoms in Saudi paramedics to improve their mental health status.

Distribution of post-traumatic stress disorder, coping strategies and social support subscales Nearly half of paramedics sampled reported PTSD symptoms, nearly in 44% fully met the PTSD criteria and Arousal while avoidance were (35.0%) were classed as having partial PTSD. Higher levels of passive coping and lower levels of family and friends support were associated with higher levels of PTSD symptoms. Furthermore, a greater tendency to endorse passive coping items was still associated with higher levels of PTSD symptoms when

other relevant variables were controlled for and was associated with a significantly greater risk of PTSD caseness.

In our study post-traumatic stress disorder show that were a significant relation were P-value=0.0003, X^2 16.120 the majority of the study groups arousal were (44.0%) followed by avoidance were (35.0%) while Re-experience were (21.0%) , regarding Brief coping showed that were a significant relation were P-value=0.001, X^2 19.845 many of the respondents active were (66.0 %) while passive were (34.0%), regarding social support showed that were a significant relation were P-value=0.0056, X^2 10.360 the majority of them Red crescent were (44.0%) but Family and friends were (29.0%) while both were (27.0%) .(See table 2)

As this is only the study Investigate of coping strategies and social supports are associated with post-traumatic stress disorder symptoms in Saudi paramedics , these findings add important new knowledge to the literature. The rate of PTSD symptom prevalence was larger than that found in previous international systematic reviews. These reviews estimated prevalence at 12.4% , 10% and 11% [5], in our study distribution of prevalence of psychological disorders among in Saudi paramedic regarding anxiety disorder majority of the study none were (62.0%) followed by generalized anxiety disorder were (18.0%) while social phobia were (12.0%) but Panic disorder , regarding mood disorder many of the respondents were none (48.0 %) while major depressive disorder were (29.0%) followed by bipolar disorder were (23.0%) , regarding psychotic disorder the majority of them none were (77.0%) while schizophrenia were (15.0%) but delusional disorder were (8.0%) , regarding the use of psychiatric medication the majority of the respondents none were (67.0%) but Antidepressant medication were (11.0%), while benzodiazepine were (9.0%), followed by Antipsychotic medications were (8.0%) while Mood stabilizer medications were (5.0%) (See table 3)

This shift pattern involves a high number of work hours combined with a high degree of sleep disruption, which is known to be a significant cause of work stress [32]. Another reason may relate to the increasing number of fatal car accidents on Saudi roads [1]. It is estimated that 19 people are killed and 96 are injured each day in road traffic accidents, which is a relatively high rate given that the country's population is 34 million (The General Authority for Statistics, 2019). Road traffic accidents are a significant source of stress for first responders and may contribute to the high rates of PTSD in this group[25].

Additional attention should be paid to the importance of social support, calling for active interventions to reduce PTSD symptoms in Saudi paramedics. On the contrary, Shnaider et al [28] demonstrated that total support, as well as social support from family and friends, was not correlated with the initial severity of PTSD symptoms, while a significant correlation was found between social support from significant others and initial severity of PTSD. However, another study found that social support had a significant correlation with PTSD only when involving family support. [29]

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Conclusion

PTSD symptoms in Saudi paramedics should be paid attention to. Social support and mental adjustment were positive resources associated with PTSD symptoms. Moreover, mental adjustment could mediate the relation between social support and PTSD symptoms in Saudi paramedics. Therefore, intervention management that focuses on improving perceived, the current study found that nearly half of Saudi ambulance personnel were suffering from PTSD symptoms, and that there was an association between greater use of passive coping strategies and higher levels of PTSD symptoms and PTSD casernes. The current findings suggest that interventions to help reduce PTSD in Saudi paramedics should include strategies to reduce passive coping. Future research is urgently required to help understand the psychological, social and work-related factors that contribute to these high levels of PTSD.

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