

# Anxiety Disorders and PTSD in Palestine: Literature review

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## Research article

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# Abstract

**Background** The WHO reports that anxiety disorders are the most common mental disorders worldwide. Most people who experience such events recover from them, but people with post-traumatic stress disorder (PTSD) continue to be severely depressed and anxious for months or even years following the event. Palestinians are especially at a higher risk for developing anxiety disorders and PTSD due to their chronic exposure to political violence, prolonged displacement, and others as a limited professional, educational, financial opportunities, and mental health services. This paper aims to provide a systematic review of the literature and established studies concerning Anxiety disorders besides PTSD in Palestine.

**Methods** PubMed, Science Direct, Google Scholar was used to search for materials, for the critical analysis of empirical articles, the following aspects were considered: study type, sample, and the key findings.

**Results** Twenty-four studies from Palestine (West Bank and Gaza) were included in this review. Five studies related to children, five related to Adolescent, three related to women, three related to physical diseases and four related to gender and age differences . Results showed that anxiety disorders and PTSD were one of the most common mental disorders in Palestine. Anxiety and PTSD develop from a complex set of risk factors, including genetics, personality, and life events. They are highly associated with poor quality of life and disability. The results indicate that a significant proportion of Palestinian experiencing serious psychological distress especially anxiety and PTSD. Therefore, a mental health policy for Palestinians must deal with several challenges. Distinct barriers including inconsistent availability of medications, absence of multidisciplinary teamwork, insufficient specialists, fragmented mental health system, and occupation need to be addressed.

**Conclusion** As a primary prevention, occupation has to be considered as a main source of the anxiety and other mental health disorders in Palestine. Besides, there is a need to implement mental health care system through the multidisciplinary work and raising awareness regarding prevalent of mental disorders.

## Background

Palestine (occupied Palestinian territory) is an eastern Mediterranean country which seeks independence and freedom which include the Gaza Strip and the West Bank. The social geography of modern Palestine, especially the area west of the Jordan River, has been greatly affected by the dramatic political changes and wars that have brought this small region to the attention of the world. <sup>[1]</sup>

Gaza Strip is a narrow piece of land lying on the coast of the Mediterranean Sea. The West Bank is an area of land between Israel and Jordan. The West Bank and Gaza together constitute Palestine, which is administered by the Palestinian Authority (PA).<sup>[1]</sup> Besides, refugees account for 73.1% of Gaza Strip and 30.2% of West Bank populations <sup>[2]</sup>. Most of the population is Muslim, and common Palestinian values

include rootedness to the land, social identity from family and community, strong family bonds, and a holistic outlook on life. [3]

Palestine has been under occupation by Israel since the 1948 war. It was considered by Palestinians as the beginning of 'Catastrophe'. Palestinians have experienced ongoing suffering, traumas and social distress. [4] In 1987, the first uprising, known as the Intifada, broke out in the Gaza Strip and the West Bank. In 2000, Israeli punishment measures and practices were again in place to discontinue the second Intifada. After that, in 2002, Israel started to build a physical barrier with parts of it isolating the Palestinians' cities and villages. Israel called it a 'fence' and Palestinians called it a 'Separation Wall'. [5] In 2008, 2012 and 2014, there was a prolonged siege involving movement restrictions on food and individuals, especially in Gaza Strip. Palestinians experienced violations of their human rights, loss of life, harm and home destruction. [6]

The health care system in Palestine is complex and fragmented; basic public health and primary care are offered by four main facilities: The Palestinian Authority (Governmental), the United Nations (United Nation Relief and Work Agency for Palestinians (UNRWA)), non-governmental organizations (NGOs), and private health care services such as pharmacies or clinics. [7]

In 2002, the World Health Organization began a Palestine Mental Health Project, in cooperation with the Palestinian Ministry of Health. The WHO has been trying to develop the Palestinian health system and planning for building new community mental health centers. [7] The Gaza Community Mental Health Project (GCMHP) provides community mental health services, trains in community mental health and human rights, and sponsors field research. [8] Nowadays, mental health services in Palestine are community-based care. However, there are only 13 community mental health clinics or centers in West Bank, in addition to one psychiatric hospital in Bethlehem. [9]

The developmental challenges of mental health care vary from country to country influenced by their income. In addition, other factors have determined the efficacy of mental health services including political decisions, social factors and the specific diversity of cultures [10]. Considering the extremes of war experienced in Palestine over the last 70 years, a mental health system is facing specific challenges linked with occupation and political conflict. Restrictions on freedom and movement considerably limit patients from receiving care outside of their area of residence, and the cost of treatment, and inconsistent availability of medications on the WHO essential medicines list, in addition to insufficient specialists and absence of multidisciplinary teamwork present further access issues. [11]

Furthermore, mental disorders in Palestine remain underreported, under-resourced, under-treated, and mental health services underfunded. These services are unable to meet the burden of need. There is a severe lack of human and infrastructure resources, for example the total number of psychiatrists is 20 in the West Bank. [11] The mental health problems are generally high in the Palestinian population according to the available statistics [3] According to statistics of the Palestinian Center for Counseling, the results of patients who went to psychiatry during the past three years (2007, 2008 and 2009) 25% of patients suffer

from anxiety disorders. <sup>[12]</sup> In addition, the Community Mental Health Program in Gaza in 2017 reports the percentage of anxiety disorders among patients visiting psychiatric clinics in Gaza 26% <sup>[13]</sup>

Lack of feeling safe is the main cause of mental disorders, such as anxiety, phobias, depression, and PTSD. <sup>[14]</sup> Palestinian population especially adolescents and children were constantly exposed to lack of security and safety due to the impact of the Israeli occupation practices. <sup>[15]</sup> The percentage of students in public schools in Area (C) which is totally managed by Israeli military forces suffers from psychological conditions and social difficulties 36.4% in 2011 and 69.4% in 2012. <sup>[16]</sup>

Anxiety disorders represent 32.9% of health problems that cause the most disability. <sup>[17]</sup> Furthermore, Anxiety disorders can alter behavior and cognition as well, yet little is known about the particular domains they affect. <sup>[18]</sup> According to the recent DSM-5 classification, anxiety disorders included generalized anxiety disorder, specific phobia, social anxiety disorder, separation anxiety disorder, agoraphobia, panic disorder, and selective mutism. The symptoms can interfere with daily activities such as job performance, school work, and relationships. They are characterized by excessive worrying, uneasiness, and fear of future events, such that they affect social and occupational functioning. <sup>[20]</sup> <sup>[19]</sup>

On the other way, most people who experience such events recover from them, but people with PTSD continue to be severely depressed and anxious for months or even years following the event. As well as, The DSM-5 outlines the diagnostic criteria for PTSD as having exposure to traumatic event, the presence of some specific symptoms, persistence avoidance of stimuli, negative alteration in cognition, mood, arousal, and reactivity associated with the traumatic events. <sup>[21]</sup>

In this study the authors will summarize the literatures about Anxiety disorders and PTSD in Palestine. This is the first review to summarize Anxiety disorder and PTSD in Palestine.

## Methods

The systematic review in this article was gathered through searching in electronic databases. The following electronic databases were searched: PubMed, Science Direct, and Google Scholar. The keywords used in the searching process are: Anxiety Disorder AND PTSD AND Palestine, Anxiety AND Gaza Strip OR West Bank. These words were also used to search in the Arabic language to identify articles indexed in An-Najah University Journal for Research which 2 articles translated from Arabic to English language. More than 24 studies included, followed the IMRAD style (Introduction, method, results, and discussion section), in addition to 4 Palestinian statistics used from formal websites. Search history and study filtration shows in Appendix A. The full-text articles were critically appraised. Old reviews were also included due to lack of articles regarding this subject considering subjects were not recruited specifically through the mental health system or concentrating on multifactorial cause of Anxiety disorders rather than the occupational factors to avoid the selection bias. The search results were independently screened and extracted by the three authors, and all discrepancies were resolved by the

principal investigator (MM). The study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

### **Inclusion and exclusion criteria**

Studies were eligible for inclusion if they satisfied the following criteria: All of related articles founded included in this study after that critically appraised and the duplicates and irrelevant articles were removed.

### **Quality assessment**

The quality assessment of each study was assessed according to checklist. The checklist consists of the following items: including clear study aims, adequate sample size, response rate reported, and losses given, adequate description of data, appropriate statistical analysis. representative sample (with justification), clear inclusion and exclusion criteria, valid and reliable measure of mental health, response rate reported, and losses given, adequate description of data, appropriate statistical analysis. Two investigators (MB and SS) independently assessed article quality, and inconsistencies were resolved by the principal investigator (MM).

### **Characteristics of included studies**

Searching history shown on Appendix A. After reviewing in depth of selected search findings and obtaining necessary data. Twenty-four studies were included in this review conducted in Palestine (West Bank and Gaza Strip). Five studies focused on children, five studies focus on Adolescent, three studies focused on women, three studies focused on physical diseased and four studies focused on gender and age differences and other Palestinian statistics including one thesis study. All reviewers independently charted the data, discussed the results and continuously updated the data-charting form in an iterative process. We grouped the studies by the topic they studied. For the critical analysis of empirical articles, the following aspects were considered: study type, the survey instrument used, aim, sample, and the key findings. A data-charting form was jointly developed by two reviewers to determine which variables to extract.

## **Results**

### **Anxiety disorders and PTSD world wide**

Over one billion people globally have one or more mental disorders. The WHO reports that anxiety disorders are the most common mental disorders worldwide<sup>[22]</sup>. Anxiety disorders are frequent there lifetime prevalence ranging between 5 and 25% of the population, and a 12-month prevalence ranging between 3.3 and 20.4%, world widely.<sup>[23]</sup>Anxiety disorders are most common mental disorders globally specially in women more than in men<sup>[22]</sup>. Similarly anxiety disorders are the most common mental Disorders in the U.S, affecting 18.1% of the population every year; this means 40 million adults in the United States aging 18 and older. People with an anxiety disorder are six times more likely to be hospitalized for psychiatric disorders than those who do not suffer from anxiety disorders and three to

five times more likely to go to the doctor. It is well established that anxiety disorders develop from a complex set of risk factors, including personality, genetics, and life events. [24]

Some anxiety disorders, in particular the phobias, social anxiety and separation anxiety, have very early age of onset, range of 5–10 years of age while others (generalized anxiety disorder (GAD), panic disorder (PD), and post-traumatic stress disorder (PTSD)) tend to have a later age-of-onset distributions (median 24–50), with much wider cross-national variation. [23]

Moreover, anxiety disorders are highly treatable, yet only 36.9% of those suffering receive treatment. It affect 25.1% of children between 13 and 18 years old. In addition, they are Researchers found that untreated children with anxiety disorders are at higher risk to engage in substance abuse, perform poorly in school, miss out on important social experiences. In U.S, 45.9% of women and 65% of men who were raped are likely to develop the disorder. [24]

As well as, an updated survey for 24 community in 21 countries from WHO surveys. The Researchers found lower treatment levels were found for lower income countries. In addition, 9.8% had a 12-month anxiety disorder, 27.6% of whom received treatment. 41.3% of those with 12-month anxiety perceived a need for care; only 9.8% received possibly adequate treatment. [25]

Because of their relatively high prevalence, their tendency towards chronicity and substantial comorbidity, anxiety disorders are associated with significant disability and poor quality of life. [26]. Anxiety disorders are also very costly. It has been estimated that the total costs of anxiety disorders were € 74.4 billion for 30 European EU countries in 2010 [27].

The standard Anxiety treatments are: first psychotherapy which include cognitive behavioral therapy and psychodynamic psychotherapy. Second pharmacological treatment which include Selective serotonin reuptake inhibitors (SSRI), Benzodiazepines, non-addictive anxiolytic, Busporone, Beta-blocker, Tetracyclic antidepressant (TCAS) [28]. Furthermore, Narrative Exposure Therapy which is a short-term psychological treatment for PTSD that has been investigated in various contexts especially for torture survivors, particularly in the Middle East and North Africa (MENA) region where health systems are unable to meet the increasing needs of mental health disorders caused by war and displacement. [29]

However, yet a number of barriers limit the effective treatment of anxiety disorders and PTSD. Structural and health system weaknesses, including scarce mental health and human services as well as lack of awareness and costs of treatment and stigma perceived by the people who experience anxiety disorders, further limit their treatment. [30]

### **Anxiety Disorders in Arab and Muslim Countries**

Anxiety was discussed by some famous Islamic scholars in the ancient history such as al-Razi, Imam Al-Ghazali, Ibn Kathir, Muhammad 'Uthman Najati and others [31]. According to Imam Al-Ghazali, anxiety is a mental disease developed by the heart. It grows from an unhealthy soul of a human being. It is similar to

other diseases such as anger, hatred, envy, sadness, pride and others. He characterized anxiety as fear towards certain things which lead to restless and frustrated feelings<sup>[32]</sup>. Imam Al-Ghazali also discussed several types of anxiety for example: the fear of old age, fear of death, fear of Allah, fear of poverty, fear of losing status and jobs and fear of being different from others. He described all these fears as coming from the peaceful heart when someone does not give full trust in the destiny (Qada and Qadar) set by Allah and does not have complete reliance on Allah.

Moreover, According to al-Ghazali, meditation can deepen 'ma'rifatullah' (knowing Allah) in the heart which is the beginning of purification in the soul. Prophet Mohamed has been practicing this meditation while he was in the Cave of Hira '. Here, he has found peace that he had never experienced before. He also received the first revelation from Allah. <sup>[33]</sup> Furthermore, Ahmed ibn Sahl al-Balkhi (m. 934M)'s famous book Masalih al-Abdan wa al-Anfushas discussed the relationship between body and soul and describes the spiritual and psychological health<sup>[34]</sup>. In addition, Ali al-Tabari (m.923M), a famous medical practitioner who developed an Islamic psychotherapy to heal patients suffering from mental disorders. This has been mentioned in his famous book entitled 'Firdaus al-Hikmah'.<sup>[35]</sup>

On the other hand, the Holy Quran stated among the ways to apply in the psychotherapy process to treat general anxiety disorders through performing Salat (prayer). Through Salat, the person would be able to express all the hope by asking help from Allah during difficult situations. If the Salat is performed sincerely, then it is able to purify the heart and transform one's life to be calm, confident and disciplined. <sup>[36]</sup>

In summary, it is clear that anxiety disorder is generally caused by the mental or emotional instability. However, from an Islamic view it is a soul disease to some extent rather than mental disorder as promoted by the psychiatrics from the West. <sup>[37]</sup>

The following paragraphs will present some studies conducted in different Arab and surrounding countries regarding anxiety disorders and PTSD. By using stratified random sampling technique, 1552 adolescent school age boys and girls in Abha city, southwestern Saudi Arabia, were screened for mental health using Arabic validated version of SCL-90-R. Their ages ranged between 14–19 years. The most frequent mental symptoms were phobic anxiety (17.3%). The researchers found insignificance prevalence between girls and boys. Some sociodemographic conditions such as father education, mother working status, ranking among brothers and sisters, and type of school were significantly affecting mental health. They also showed secondary school students enrolled in Islamic schools have 1.5 times the risk to have obsessive compulsive compared to those enrolled in general school. An interaction between genetic and environmental factors might explain the increase of behavior disorders in boys. <sup>[38]</sup>

In addition, generalized anxiety disorder (GAD) was found with highly prevalent among children and adolescent. According to an Egyptian study aimed to explore the prevalence and socio demographic risk factors related to anxiety disorders especially (GAD) in adolescents and children. The study was conducted among 1200 student. The sample consisted of 493 who were males and represented 44.7%

and 611 who were females and represented 55.3% and their ages ranged from 12–18 years. The researchers used different anxiety scale. The researchers found that depression was the most prevalent 23.8% and then anxiety which was 6.69%. According to psychological diagnosis, the anxiety disorders were prevalent in the age group from 15–16 years and GAD was more common in males. The study also showed that the increased family size leads to increased occurrence of psychological disorders. As well as the death of the father may lead to the marriage of the mother and consequently the stressors were increased. [39]

Moreover, another study by using descriptive cross-sectional design carried out among high school students in Irbid, Jordan. The study aimed to explore the prevalence of mood and anxiety disorders and to investigate their association with gender and other socio-demographic factors. The sample consisted of 1103 adolescent students. Their ages ranged between 13–18 years. More than half of the students were females. The study showed a prevalence of 16.3% for any anxiety disorder. Female adolescents were significantly more likely to have mental disorders than males. Moreover, adolescents who were living with both parents were significantly more likely to have mental disorders than those living with one parent or other people. However, the researchers presented an explanation which might be that when both parents are present, any conflict between them might affect the mental health and anxiety levels of their adolescent offspring. [40]

On the other hand, some studies were carried out to explore the prevalence of anxiety disorders and PTSD in particular after being exposed to several traumas such as war and conflict. According to a study conducted through assessing 3048 participants post conflict communities in Algeria, Cambodia, Ethiopia and Palestine. PTSD and other anxiety disorders were the most frequent problems and reported most in people who had experience of violence associated with armed conflict. For example it was associated with higher rates of disorder that ranged from a risk ratio of 2.10 for anxiety in Algeria to 10.03 for PTSD in Palestine. [41]

Moreover, Arab immigrant women are vulnerable to posttraumatic stress disorder (PTSD) because of higher probability of being exposed to war-related violence, and immigration stressors. These findings were shown in a descriptive study which conducted among Arab Muslim immigrant women, particularly those from Iraq and Lebanon, who have been exposed to war. The sample consisted of 546 women. All data were collected from face to face interviews by Arab women. They used different measurements of anxiety. The researchers found over a third of the participants (44%) reported living through or witnessing three or more traumatic events. The most commonly reported types were military combat or war zone (88.6%). In addition, women who were more at risk for PTSD (i.e., those who had lived in a refugee camp) scored higher than women than others [42] Furthermore, in Afghanistan, more than two decades of war which affected negatively women freedom of movement, access to healthcare, and education have affected the mental health status. The prevalence of PTSD was higher in women than in men (48% met diagnostic criteria compared to 32%) in data from the Centers for Disease Control and Prevention's (CDC) 2002 national survey of postwar Afghani mental health. [43]



In summary, it was not clear if the prevalence of anxiety disorders and PTSD is similar or not between male and female in different Arab countries. However, it was clear that some multiple sociodemographic conditions and environmental factors significantly play a role in affecting and causing mental health disorders in particular anxiety disorders. In addition anxiety disorders may exhibit high levels of lifetime comorbidity with one of another disorders, for example anxiety disorders with Depression. So understanding the underlying causes of these disorders can provide insight into the etiology and inform classification and treatment. Moreover, PTSD were also detected after being exposed to war-related violence in some Arab and Muslims countries which had negatively impact on several aspects of life especially psychological status.

## **Overview Regarding Anxiety Disorders and PTSD in Palestine**

- **Palestinian Children**

The influence of the occupation on Palestinian children has been studied. Children are considered being at risk due to living in camps or exposed to a long term of violence. One of these studies was conducted among 237 children living in the Gaza Strip were selected randomly from 112 schools. The age ranged between 9–12 years. Children completed the revised manifest anxiety scale (a questionnaire with yes/no answers for 28 anxiety items and nine lie items), and teachers completed the Rutter scale. The study found that the Gaza hostilities made landmark traumas on children such as posttraumatic stress disorders and anxiety. Anxiety physiological symptoms reported: Insomnia, nightmares, and sweating. Also, they found that the Inner-city was exposed to anxiety more than villages. This would reflects the effect of social system support from families in the rural areas. <sup>[44]</sup>

Furthermore, another study carried out to explore the prevalence and nature of comorbid post-traumatic stress reactions among 403 Refugee children living in four camps in the Gaza Strip. Measures included a Checklist of Gaza Traumatic Events, the Child Post Traumatic Stress Reaction Index (CPTSD-RI), and the Short Mood and Feelings Questionnaire (MFQ). Many items included within these checklists which cover different types of traumatic events that a child may have been exposed to in the particular circumstances of the occupied region. The study found both CPTSD-RI and MFQ scores were significantly correlated and independently predicted by the number of experienced traumatic events. They concluded that children living in occupation and blockade zones were at high risk of suffering from PTSD. <sup>[45]</sup>

Moreover, a study carried out to explore the long-term effects of occupation on the Palestinian children in the Gaza Strip. The sample included 1,137 children randomly selected from all parts of the Gaza Strip. They completed a Checklist of Traumatic Experiences (CTE), Symptoms of Post-Traumatic Stress Disorder Scale (PTSD) and Personality Assessment Questionnaire (PAQ). The results showed every child in Palestine had been exposed to at least three traumatic events. 41% of children suffered (PTSD). Of the 41% of children with PTSD, the levels of symptoms were as follows: 20% of children suffered from an acute level of PTSD, 22% suffered from moderate levels of PTSD, and 58% suffered from low levels of PTSD. The symptoms of PTSD varied in different forms. The first one: cognitive symptoms (e.g. a child

might take a long time to get to sleep, or cannot stop thinking about the trauma). Second: emotional symptoms e.g. easily getting tense and nervous, feeling sad and fearful, bedwetting).<sup>[46]</sup>

Also, a study conducted in the Gaza Strip in areas under ongoing shelling, siege and other acts of military violence. The sample included 100 families, with 200 parents and 197 children. The age ranged between 9–18 years. Parents and children completed measures of experience of traumatic events (Gaza Traumatic Checklist), PTSD (Children's Revised Impact of Events Scale, PTSD Checklist for parents), and anxiety (Revised Children's Manifest Anxiety Scale, and Taylor Manifest Anxiety Scale for parents). Both parents and children reported a high number of experienced traumatic events and high rates of PTSD and anxiety scores.<sup>[47]</sup>

Child labor is another issue in countries with high unemployment rates which may press the children and families to push the children outside the school classes to earn money for the support of the children and their families. A study conducted to establish an association between labor-related variables and child mental health problems. The data were collected over 2 months during the ongoing occupation and siege. The sample consisted of 780 children who considered being under Children's labor age. This included working in a small industry, selling goods in the street, markets or shops, agriculture, and other casual jobs. Anxiety symptoms were measured by the Spence Children's Anxiety Scale. The study found that anxiety scores were predicted by selling in the streets, working to help families, low family income and lack of health insurance.<sup>[48]</sup>

In summary, it was clear that Palestinian children are considered being at higher risk to develop serious psychological distress due to living in areas under ongoing shelling, siege and other acts of military violence. The previous studies covered different types of traumatic events that a child may have been exposed to in the particular circumstances of the occupied region. The findings indicated significant proportion of Palestinian children experiencing serious psychological distress especially anxiety and PTSD. Several physiological symptoms reported including: insomnia, nightmares, sweating, and bedwetting.

- **Palestinian adolescents**

Gaza Strip has been subjected to continuous traumatized events and blockade since the second Intifada (Uprising) in 2000. In this section, some studies were carried out to explore the response of adolescents to these events, for example, a randomized study conducted among 229 Palestinian adolescents from refugee camps of Rafah and Khan-Younis. The sample consisted of males (52.8%), and females (47.2), their ages ranged from 15–19 years. Participants were administered the following measures: The Posttraumatic Stress Disorder Interview (PTSD-I), and the Beck Anxiety Inventory (BAI). The study found that 68.9% of the sample was classified as having developed PTSD and 94.9% of the sample was classified as having severe anxiety levels.<sup>[49]</sup>

Another study was conducted during the Second Intifada. Many adolescents exposed to direct severe injury which left them with a permanent disability. The study was designed to assess the occurrence of

Psychiatric disorders, in particular, PTSD and anxiety among Palestinian adolescents following intifada-related injuries. The sample consisted of 179 boys previously injured during the intifada and as a result, sustained a permanent disability. Approximately 76.5% of the injured victims qualified as having PTSD and with excess risk for chronic symptoms and comorbidity with other psychiatric disorders such as anxiety and depression. PTSD was positively associated with fatalism and negative coping among adolescents. Also those adolescents with higher levels of anxiety and depression reported frequent use of negative coping strategies [50].

In addition, a study regarding adolescents was a part of a larger survey conducted on a sample of Jewish and Arab-Palestinian school students in northern areas including the major city of Haifa which is inside 1948 occupied land. The study aimed to explore the influence of the second Lebanon War on adolescents' Posttraumatic Stress Symptoms (PTS). The sample included 1800 Jewish and 2351 Arabs from a high-grade student. Although the study found exposure to war events had similar effects on both Arab and Jewish students, Arab-Palestinian reported higher PTS symptoms. One potential explanation may be that although they were exposed less than their Jewish peers, Arab adolescents felt much less secure, as they did not have shelters and protected areas, and only a few were evacuated from the danger zone. They feel less supported due to their experience of humiliation, discrimination and injustice by the Israeli government. [51]

Also, a study conducted among Palestinian adolescent's cases aimed to advance the theory of chronic and traumatic stressors. The sample consisted of 438 Palestinian adolescents from the West Bank who had been exposed to several types of trauma. The ages of the sample were between "12–19". The study included a measure for cumulative traumas that are based on the DBTF (Development-Based Trauma Framework) and other measures of anxiety and PTSD. The study showed that continuous traumatic stress was a significant predictor of mental health. They found that anxiety has an effect on decreased physical and mental health as well as on increased fear of death. [52]

Finally, in another study conducted randomly among (566) students about the perception of student psychological problems at An-Najah National University through the Al-Aqsa Intifada as a result of Israeli occupation. The results of the study reveal that: the psychological effect was high among these students. The researchers pointed out the positive effect of the Al-Aqsa Intifada on the students and the Palestinian people from the student's perception including: (a) Feelings that they will have soon on independent state of Palestine. (b) Feeling that the Intifada could help the whole world understand that Israeli government doesn't committed to the peace process, to Oslo accord, and the Palestinians have rejected Israeli occupation. [53]

In summary, the established studies mentioned above suggested a significant proportion of Palestinian adolescents living especially in Gaza Strip and West Bank were most vulnerable populations in the region and are more likely to experience psychological disturbances and report significant traumatic experiences of Al-Aqsa Intifada-related stressful events. The results indicate those adolescents with higher levels of anxiety, depression, and PTSD reported frequent use of negative coping strategies.

- **Palestinian women**

In this section, the following three studies were found and the anxiety level and PTS symptoms among Palestinian women were discussed. The first one: a descriptive study that focused on infertility and its effects on Palestinian women's mental health condition. It has come to assess psychological distress in infertile women living in the West Bank in Palestine. It has investigated the psychological distress among infertile women using the 90-R list of symptoms, a uniting tool to measure the status of current psychiatric symptoms. The study found that the infertile women appeared to complain of many psychological effects including a high level of anxiety and anxiety phobia. [54]

The second was a descriptive study conducted in (2016) from antenatal clinics in 9 refugee camps in the West Bank at UNRWA primary health care centers in three major cities (Nablus, Ramallah, and Hebron). The researcher developed a conceptual framework in which any pregnant woman can develop anxiety during her current pregnancy due to significant associated factors found as following with anxiety: (age, number of parity, presence of supportive person). The sample consisted of (327) pregnant women who were selected through random sampling. (GAD-7) used to measure the level of anxiety. The researcher found the prevalence of anxiety was high. Pregnant women had a different degree of anxiety as follows: mild anxiety was 30.7%, moderate anxiety 17.5% and severe anxiety was 12%. [55]

Finally, Binge eating disorder (BED) and anxiety are deeply intertwined and often co-occur among female. One hundred fifty-four female undergraduate students from three different faculties of Polytechnic university- Hebron – West bank, Palestine were assessed. The screening for presence of binge eating symptoms was done using BEDS-7. The psychosocial factors were assessed by validated Arabic version of DASS-21. The study found half of the participants (50%) had binge eating symptoms in which binge eating disorder significantly correlated with psychosocial factors including higher score of depression, stress and anxiety. [56]

- **Anxiety among patients with physical diseases**

The following three studies were found to discuss the combination of anxiety level and physical diseases in Palestine. The first study was conducted to investigate the prevalence of PTSD and anxiety among children with cancer. The sample consisted of all children cases coming to be diagnosed and treated in the pediatric Oncology Unit, at El Nasser pediatric hospital in Gaza city. The sample included 23 males and 27 females. The results showed that 22% of children had partial PTSD and 18% had full criteria of PTSD, 62% of children had anxiety disorders. [57] The second study was conducted among patients consecutively admitted to the cardiology and cardiac surgery departments of An-Najah National University Hospital, Arab-Specialized Hospital, Watani Hospital and Nablus Specialized Hospital in the Northern West Bank city of Nablus. The sample consisted of a total of 1053 Patients. The age ranged 30–80. Interviews were conducted within 1 week of their admission to the hospital. Anxiety was more prevalent among females and less educated patients. Patients with anxiety symptoms reported poor social support and lower resilience. [58]

The third study is a prospective, randomized, and controlled study that aimed at assessing the impact of preoperative education on the level of anxiety of patients undergoing abdominal surgery and postoperative pain. The study population consisted of adult men and women over 18 years old undergoing any type of elective abdominal surgery in governmental hospitals in the Nablus district – Palestine. The research showed a higher level of anxiety in the control group due to the lack of a structured educational program. It was clear that there was a significant relationship between the preoperative level of anxiety and the postoperative level of pain. It was clear that the level of pain decreased when the level of anxiety was lower. Preoperative anxiety can increase postoperative pain, the amount of analgesic that may be taken, as well as staying in the patient's hospital. The study explored that preoperative education has been effective in reducing preoperative anxiety among patients who have undergone abdominal surgery, reducing postoperative pain, and improving vital signs. The researchers recommended that preoperative health education be included in routine care in preoperative preparations for surgical patients. [59]

- **Gender and age differences**

Some of the studies were conducted to discuss the relation between anxiety and other multiple variables such as gender and age differences. A study aimed to detect the prevalence of behavioral and emotional problems among Palestinian children in the Gaza Strip. The sample consisted of 453 boys and 506 girls. The total number of schools selected was 42 UNWRA, 53 Government and 2 Private schools. Teachers completed the Rutter scale B2 which consists of 26 items concerning child behavior. Factor analysis of the scale revealed the following three factors: antisocial behavior, anxiety, and school phobia. Boys and girls were compared in terms of total score. The most frequently reported an emotional item was worrying, in addition to restlessness and poor concentration. The study indicated girls were less likely to be affected than boys [60]. Being a girl was more protective in which they were more resilience and had more personal skills, peer component, and social skills, spiritual beliefs, culture, and educational items [61].

In contrast, another study used a descriptive-analytic study to investigate the effect of traumatic events on children who were exposed to the Israeli military operation on the Gaza Strip in November 2012, and who lived in five localities of the Gaza Strip (north Gaza, Gaza, Middle area, Khan Younis, and Rafah area). The age ranged between 9–16 years. The results indicated that 30.9% of children had anxiety disorder. No differences in anxiety disorder between boys and girls. Anxiety was more in children living in camps and family monthly income less than \$300. The most common anxiety symptoms reported by children were: Others seem to do things easier than I can (81.3%), other children are happier than me (71.7%), and I get nervous when things do not go the right way for me (64.3%). The results indicate Palestinian children used different ways of coping with the stress and trauma, and common resilience items such as citizenship, sense of belonging, spiritual (religious) beliefs, and feeling safe when they were with their caregivers [61].

In summary, it seems from all above presented studies that anxiety disorders can exist among all Palestinian population. Children and adolescents were a particularly vulnerable target group. Trauma due

to war increased children psychological symptoms, including PTSD and anxiety. Such psychological problems were associated with traumatic experiences, and trauma decrease children resilience. Unfortunately a few studies had explored the prevalence of anxiety and PTSD among Palestinian women and men. Moreover, anxiety disorders were associated with several physical conditions in the community such as cancer and cardiac.

## Discussion

In this paper, several studies were conducted mainly among children and adolescents. They have lived their entire lives under military occupation and with increasing life challenges. Researchers explored the prevalence to develop PTSD and anxiety disorders symptoms within these traumatized events [44] [45] [46] [49] [50] [52] [53]. While other complex set of risk factors, including personality, genetics, and life events have significantly associated with developing these psychological disorders [24]. Anxiety disorders were the most common psychiatric disorders among children and adolescents with a median age of onset of 11 years.<sup>[62]</sup> Between the ages of 9 and 12 years, children can distinguish between conflicting emotions, and between others' accidental and intentional behaviors. Moreover, during adolescence, social cognitions are enhanced further, together with the development of belief systems, hypothetical and abstract thinking, and self-evaluation of their thought process. [63] From the previous presented studies in Palestine, it was clear most of them consisted of different sample among different school ages. Perhaps the results indicate that if the trauma is powerful and intensely overwhelming, then the majority of survivors may experience PTSD or a high level of continuous trauma or anxiety. It could be the reason why age was not a significant contributor to the development of PTSD and anxiety among the injured of the intifada.

As well as, The DSM-5 outlines the diagnostic criteria for PTSD as having exposure to traumatic event, the presence of some specific symptoms, persistence avoidance of stimuli, negative alteration in cognition, mood, arousal, and reactivity associated with the traumatic events. [21] It was significant from the previous presented studies in Palestine that the researchers have revealed strong relationships between the rate and type of trauma exposure and the occurrence of PTSD [53] [52] [50] [49] [46] [45] [44]. The results were conducted during the Intifada period, so are more representative of mental health status when there are high levels of violence in the surrounding environment. [3] Palestinian adolescents from the West Bank and Gaza who had been exposed to continuous or several traumatic stresses were a significant predictor of mental health as well as it has an effect on decreased physical health and increased fear of death.

On the other hand, it was well established that events do not need to be traumatic to have a great impact on the development of anxiety disorders and PTSD. Aversive experiences at the doctor and dentist, with animals and insects, with being trapped or lost, with injury, and with strangers, can all precede the development of clinically significant anxiety [64]. Palestinian adolescents especially boys who developed various and continuous level of anxiety would have to overlap with multiple types of challenges. For

example, Part of them leaves schools at an early age because they have many responsibilities such as supporting his family. [47] This was due to hunger or severe poverty that families face on the daily basis with lack of effective welfare governmental system.

Moreover, it is well-documented that females are more likely than males to develop an anxiety disorder with lifetime and past-year rates of anxiety disorders being 1.5–2 times higher among females than males. [65] Similar to the previous Jordanian study female adolescents were significantly more likely to have mental disorders than males. [40] But in the previous presented studies in Palestine one study indicated boys more likely to be affected than girls [60] while the other showed not [61]. Males are generally significantly less likely to seek and receive mental health services compared to females. [66] Some of them considering going to such of these services is a sign of weakness and most of them don't want to appear like that, it is like caveman mentality. This might be due to lack of awareness and stigma attached to mental illness. Regarding research findings, the gender related anxiety disorders and PTSD were not clear and that's why we need further studies considering the gender among Palestinian people.

In addition, participation in the workforce will expose women to extra pressure besides her usual responsibilities at home as a housekeeper. [67] While the previous presented studies focused on children and adolescents, women are considered as the core of Palestinian society. [3] However, the results showed a lack of studies discussed anxiety disorders levels among these struggle Palestinian women and all factors that cause anxiety disorders.

As well as, Psychological wellbeing of the mother during pregnancy also has been posited to play a role in healthy development of the offspring. [67] Maternal anxiety may be associated with behaviors that have an adverse effect on placenta functioning, blood flow, or nutritional supply to the developing fetus. Several prospective studies have shown that antenatal maternal anxiety were associated with emotional and behavioral problems in the offspring. [68] From the previous presented studies in Palestine Pregnant women had a different degree of anxiety from mild 30.7% to severe 12%. [55] Besides, the infertile women also appear to complain of many psychological effects including a high level of anxiety [54]. The treatment itself may evoke anxiety, and the unpredictable outcome of IVF treatment may induce a depressive mood. [69]

Anxiety disorders are uniquely associated with several physical conditions in the community, and this comorbidity is significantly associated with poor quality of life and disability. [70] The presence of a physical illness, especially a life-threatening illness, such as coronary heart disease considered as life threatening comorbidity with anxiety disorders [71] The presence of an anxiety disorder may increase the likelihood of physical illness through biological mechanisms (e.g. changes in the hypothalamic-pituitary axis system or alterations in autonomic nervous system activity). [28] In combination with recent data demonstrating that anxiety disorders are risk factors for suicidal behavior. [72] However, from the previous results in Palestine [59] [58] [57], less is known about the extent to which anxiety disorders as well as its' relation with poor quality of life. From our experience as health professionals and researchers in the field,

this might be due to absence of mental health care in the general hospitals. Usually the health care in hospital uses the biological model and not using the biopsychosocial model or holistic health care approach.

Finally, some studies established the underlying structure of the genetic and environmental risk factors for the anxiety disorders as similar between men and women.<sup>[73]</sup> However, men were not mentioned or investigated in the founded studies. There is an absence of studies discussed anxiety in men, and a lack of studies had discussed the anxiety level among women in particular during the Israeli military operations. As well as, women considered an important part of society; this presents the importance of the role of social and family support in helping them deal with stress and trauma. The faith and religious practices have positive effects for Islamic Palestinian population in reducing anxiety level such as praying. It enhances their resilience and ability to recover from continuous adversities and traumas. In addition to “Sumud Culture” which developed by Palestinians as a resilient response to the history of continuous traumas and threat to their existent on their homeland.<sup>[74]</sup> The Standard treatments including Cognitive-behavioral therapy (CBT) and selective serotonin reuptake inhibitors (SSRIs) showed a significant reduction in average psychological symptoms for PTSD and anxiety disorders for specific vulnerable populations including children living in the occupied zones<sup>[28] [29]</sup>. However, according to the literature results there is a lack of studies that discussed the effectiveness of treatment approach among patients who diagnosed with anxiety disorders and PTSD.

Therefore, it seems quantitative studies are more common in Palestine as they are less costly than qualitative studies and less time consuming. These quantitative studies may explain the extent to which Palestinians live under chronic intense pressures, but qualitative studies are still needed to be able to develop these findings further. It also seems that Palestinian researchers are not working collaboratively. The research funds are politically conditioned and it also seems very few and increase when there is a high level of violence.<sup>[3]</sup>

After considering this point, there is a need for drawing attention to the importance of providing a clear and updated database in order to deal with several aspects of scientific research. Also it will enhance the collaboration between all researchers. As well as providing financial resources to train and support academics in the field of scientific research.<sup>[75]</sup>

## Conclusion

Most of the studies were conducted during the Intifada period, so more representative of mental health status when there are high levels of violence in the surrounding environment. Anxiety disorders and PTSD were one of the most common mental disorders in Palestine. They develop from a complex set of risk factors, including genetics, personality, and life events. They are significantly associated with poor quality of life and disability. The research findings indicate that a significant proportion of Palestinian experiencing serious psychological distress especially anxiety and PTSD. Therefore, a mental health policy for Palestinians must deal with several challenges. Distinct barriers including inconsistent



availability of medications, absence of multidisciplinary teamwork, insufficient specialists, fragmented mental health system, and occupation need to be addressed. Cognitive-behavioral therapy (CBT) showed a significant reduction in average psychological symptoms for PTSD and anxiety disorders for specific vulnerable populations especially children living in the occupied zones.

## Recommendations

Findings of PTSD and anxiety showed that there is a need for increasing the support for mental health services. As a primary prevention, the occupation should be considered as a main source of the anxiety and other mental health disorders in Palestine. Besides, there is a need to implement mental health care system through the multidisciplinary work and raising awareness regarding prevalent of mental disorders. Community mental health nurses can play crucial role in enhancing the mental health care in the local Palestinian community <sup>[11]</sup> Also, Humanitarian organizations should play a more positive role to protect the Palestinian community from the negative consequences of Israel's occupation. Rather than a narrow medical perspective, there is an urgent need for the reconceptualization of Palestinian mental health using a public health approach, based on the broader frameworks of social justice, quality of life, human rights and human security. Also, we recommend to do further studies regardless types of anxiety disorders and the contributing factors with consideration the effectiveness of therapeutic-used approach. The interventions should take into consideration the Islamic culture which main source of resilience and Summed (steadfastness) among adults.

## Limitations

This paper has discussed anxiety disorders and PTSD in Palestine. Palestine is a state which seeks independence and freedom over the last 70 years.<sup>[1]</sup> Therefore a mental health system is facing specific challenges linked with occupation and political conflict. Mental disorders remain underreported, under-resourced, under-treated, and mental health services underfunded. <sup>[11]</sup> Besides, the research approach is still underdeveloped. The results indicated a lack of established literature studies regarding the topic. Due to this shortage, old reviews which are related to the topic were included. In addition, there is a lack of studies that discussed different types of anxiety disorder e.g. (GAD) and their particular domains they affect throughout the life of both Palestinian men and women.

## Abbreviations

PTSD

Post Traumatic Stress Disorders.

PA

Palestinian Authority.

UNRWA

United Nation Relief and Work Agency for Palestinians.

WHO

World Health Organization.  
NGOs  
non-governmental organizations.  
GCMHP  
Gaza Community Mental Health Project.  
GAD  
Generalized Anxiety Disorder.  
SAD  
Social Anxiety Disorders.  
SP  
Specific phobia.  
PD  
panic disorder.  
MENA  
Middle East and North Africa.  
SSRI  
Selective serotonin reuptake inhibitors.  
TCAS  
Tetracyclic antidepressant.

## **Declarations**

### **Ethics approval and consent to participate**

"Not applicable" in this study.

### **Consent for publication**

"Not applicable" in this study.

### **Availability of data and material**

This is an evidence synthesis study, all data is available from the primary research studies, or can be circulated from the corresponding author.

### **Competing interests**

The authors declare that they have no competing interests in this section.

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### **Authors' contributions**

MM conceived the idea for the study from which this article is drawn. He designed the study and data analysis plan. MB and SS collected the data, analyzed and interpreted the findings and drafted this manuscript. MM contributed to the design of the study and data analysis plan. He supervised the study, contributed to the analysis and interpretation of findings, and made substantive intellectual contributions to the manuscript. All authors read and approved the final manuscript.

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