

## Review Paper

# Investigating the Economic Burden and Social Support in Individuals With Post-traumatic Stress Disorder: A Scoping Review



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**Citation** Amedu AN, Dwarika V. Investigating the Economic Burden and Social Support in Individuals With Post-traumatic Stress Disorder: A Scoping Review. *Journal of Research & Health*. 2024; 14(4):299-312. <http://dx.doi.org/10.32598/JRH.14.4.2322.1>

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## ABSTRACT

**Background:** Post-traumatic stress disorder (PTSD) is a well-known psychiatric disorder that can occur after a major traumatic event and adversely impact the individual's mental health. PTSD is a multifaceted mental health problem that requires long periods of treatment and expensive treatment protocols. Despite significant advances in treatment, there is little evidence of the economic burden and social support associated with PTSD. Hence, this study examines empirical research on the economic burden and social support associated with patients with PTSD.

**Methods:** In this study, we used the preferred reporting items for systematic reviews and meta-analyses guided scoping review protocol to assess the research on the economic burdens and social support associated with PTSD patients. Accordingly, we selected 14 primary research studies examining the economic burden and 17 primary studies examining social support for PTSD patients.

**Results:** PTSD patients incur a high economic burden worldwide with huge direct cost variability. Meanwhile, social support is an impactful approach to curbing the impacts of PTSD on patients. This study demonstrated the substantial role of social support in reducing PTSD symptoms and as a significant moderator in the treatment of PTSD patients.

**Conclusion:** PTSD is a mental health problem associated with a highly variable economic burden on patients and healthcare systems across the globe. In addition, social support facilitates the speedy recovery of PTSD patients. Because of the high economic burden associated with PTSD, the World Health Organization (WHO) should formulate a policy that improves resource allocation specifically for vulnerable individuals with PTSD.

**Keywords:** Economic burden, Social support, Post-traumatic stress disorder (PTSD), Scoping review, Individuals with PTSD

### Article info:

Received: 16 Jun 2023

Accepted: 28 Oct 2023

Publish: 01 Jul 2024

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## Introduction

**P**ost-traumatic stress disorder (PTSD) is the outcome of a mental disorder that arises from exposure of a person to devastating traumatic events, such as floods, wildfires, war, and severe assaults among others [1, 2]. An individual may be exposed directly or indirectly to traumatic events through experiencing the phenomenon, observing the experiences of others, or being regularly confronted with aversive details of such events [3]. It is estimated that more than 70% of adults worldwide have experienced at least one potentially devastating incident in their lifetime [4]. Therefore, direct or indirect exposure to traumatic events is a prerequisite for the diagnosis of PTSD, which is also associated with other forms of mental illness [5, 6]. According to the PTSD literature, 5.6% of individuals who have experienced trauma develop PTSD in their lifetime [7, 8] and this is particularly evident in individuals whose disposition is characterized by avoidance, severe anxiety, nightmares, flashbacks, etc. recurring dreams about the events, and negative changes in cognition. Therefore, due to the complexity of PTSD, its treatment is considered costly [9]. This implies that individuals with PTSD could experience a substantial economic burden.

Patients with PTSD face an economic burden that goes beyond direct healthcare costs and those associated with other mental health disorders, such as depression and anxiety [9]. This means that the economic burden of PTSD on society includes the indirect costs resulting from poor productivity, disability payments, reduced quality of life (QoL), and increased burden on caregivers [10]. Data from the United States indicate that PTSD has an annual economic burden of \$232 billion [9]. Accordingly, PTSD is a major psychological problem that needs serious attention. The recent COVID-19 state of emergency, civil unrest, and recurring national disasters are increasing the growing pressure on PTSD and its impact on the world population [9]. As a result, the prevalence of PTSD tends to increase at the same time as the economic burden increases. Because of this, patients with PTSD need social support to further their recovery.

Social support is an important social resource that can facilitate a person's recovery from acute adverse stress events [11]. Various sources of social support are identified in the literature, including family, friends, non-governmental organizations, and the government. According to previous studies, providing timely social support can have a significant impact on how individuals cope with recovery from PTSD [11, 12]. The conceptualization of

social support has been based on how it is perceived to be multifaceted and interactional. The effectiveness of social support depends more on recipients' perceptions rather than the perception of its providers [13]. The multifactorial conception of social support provides more information on how a particular response of an individual or a society might affect an individual's PTSD and how the different types of social support may interact [13]. The types of social support based on diverse views include positive support, negative support, and no support at all. Positive support includes tangible aid, emotional help, and informational support, while negative support is characterized by blame, disbelief, taking control of the recipients' choices, and withdrawal from the support recipient. No support indicates the absence of positive and negative support. Positive support improves a person's ability to recover quickly from trauma, while negative support may suppress a person's natural coping mechanisms.

Therefore, conducting a scoping review to determine the global economic burden of PTSD is important for policymakers, as it informs them of its prevalence and devastating impact and allows them to prioritize the allocation of resources to minimize these impacts on individuals and society. Therefore, the literature needs to be reviewed to provide an overview of the latest empirical evidence regarding the economic burdens and social support for people with PTSD. This study demonstrates the economic burdens associated with PTSD and the social support provided to promote recovery for individuals with PTSD. We are hopeful that our findings will provide policymakers, educators, therapists, and governmental and non-governmental organizations with reliable and timely evidence of the economic burdens and the social support needed for people living with PTSD. We also believe that our findings will fill the gap in the current literature on various studies on economic burdens and social support related to PTSD patients.

## Review questions

The research questions that guided the current study are as follows:

What economic burdens are associated with people with PTSD?

What social support is provided to promote recovery for people with PTSD?

## Methods

A preliminary search was carried out for a scoping review on the economic burden of children and adults with PTSD and associated social supports for enhancing individual recovery from PTSD in several online databases, such as [Google Scholars](#), [PubMed](#), [Wiley Online Library](#), [Science Direct](#), [Springer Nature](#), [Frontier](#), [Scopus](#), [APA](#), [PTSDpubs](#), [National Library of Medicine](#), [the Cochrane database of systematic reviews](#), and [JBI Evidence synthesis](#). No existing studies concerning a scoping review on this topic were identified. The guideline for preferred reporting items for systematic review and meta-analysis was adopted in this study [14]. This study was conducted following [JBL](#) methodological guidance [15]. It ensures the appropriateness of the scoping review in terms of data extraction, analysis, presentation, and clarification of the implications for practical research.

### Literature search

We conducted an extensive literature search in several electronic databases and other journal databases, such as [Scopus](#), [APA](#), [National Library of Medicine](#), [Wiley Online Library](#), [Science Direct](#), [PTSDpubs](#), [Frontier](#), [Google Scholars](#), [Elsevier](#). Keywords and search terms were formulated by the research team with the help of an experienced digital librarian. We used the following keywords and terms to search the database which included “economic burden of PTSD patients,” “cost of PTSD,” “financial burden of PTSD,” “financial constraints of individuals with PTSD,” “health care cost of PTSD,” and “medical cost of PTSD.” Concerning social support, the search terms used were “assistance for patients with PTSD,” “social aid for PTSD,” “social relief for PTSD,” “social welfare for PTSD,” “support services for PTSD,” “social care for individuals with PTSD,” and “community services for PTSD.” We limited our search to the period from 2000 to 2023. The date limit was used to search databases that did not have a controlled vocabulary or thesaurus. The reference list of related articles was also explored.

### Eligibility of studies

Only articles published in peer-reviewed journals were analyzed. Based on the research questions formulated to guide the study, intervention studies and historical studies on the economic burden and social support of PTSD patients were excluded. Quantitative studies on the economic burden and social support of PTSD patients were included in the study. We also included reviews that captured either the economic burden or the social support of PTSD

patients. A book of abstract articles was also included in the review to facilitate uniformity in reporting published articles. Opinion papers and commentaries were excluded from the review. Non-English language articles were excluded. All participants were included in this study, regardless of their age; therefore, no age restrictions were imposed. This allowed the researchers to assess the broad literature and identify the knowledge gap.

### Data extraction

The data extraction was carried out by the first author (AN). The rationale for extracting the data points and the sources of the article were checked by the second author (DV). Both authors reached a consensus regarding the resolution of ambiguous data points. Three types of data were collected from selected articles. First, data was collected based on the empirical features of the reviewed articles (year of publication, first author, design, country, population, primary outcome, and result). In addition, data on economic burdens were extracted and categorized into direct cost, indirect cost, and annual cost. In addition, data comparing the economic burdens of males and females was extracted. All monetary values were converted and presented in US dollars using the purchasing power parity index [16]. Third, social support data were extracted and organized according to the relationship between social support and PTSD symptoms, the effectiveness of social support for individuals with PTSD, and the mediating roles of social support.

## Results

### Study selection

This study identified 410 articles on economic burdens and 521 articles on social support through a comprehensive search of academic databases. These articles underwent a double filtering that removed 202 articles from the economic burden literature and 331 articles from the social support. The remaining 208 and 190 articles on economic burden and social support, respectively, were further screened for title and abstract suitability. At this point, 187 articles were removed from the economic burden literature and 165 articles from the social support literature. Finally, 14 articles were assessed for their economic burden and 17 articles for their social support ([Figure 1](#)).

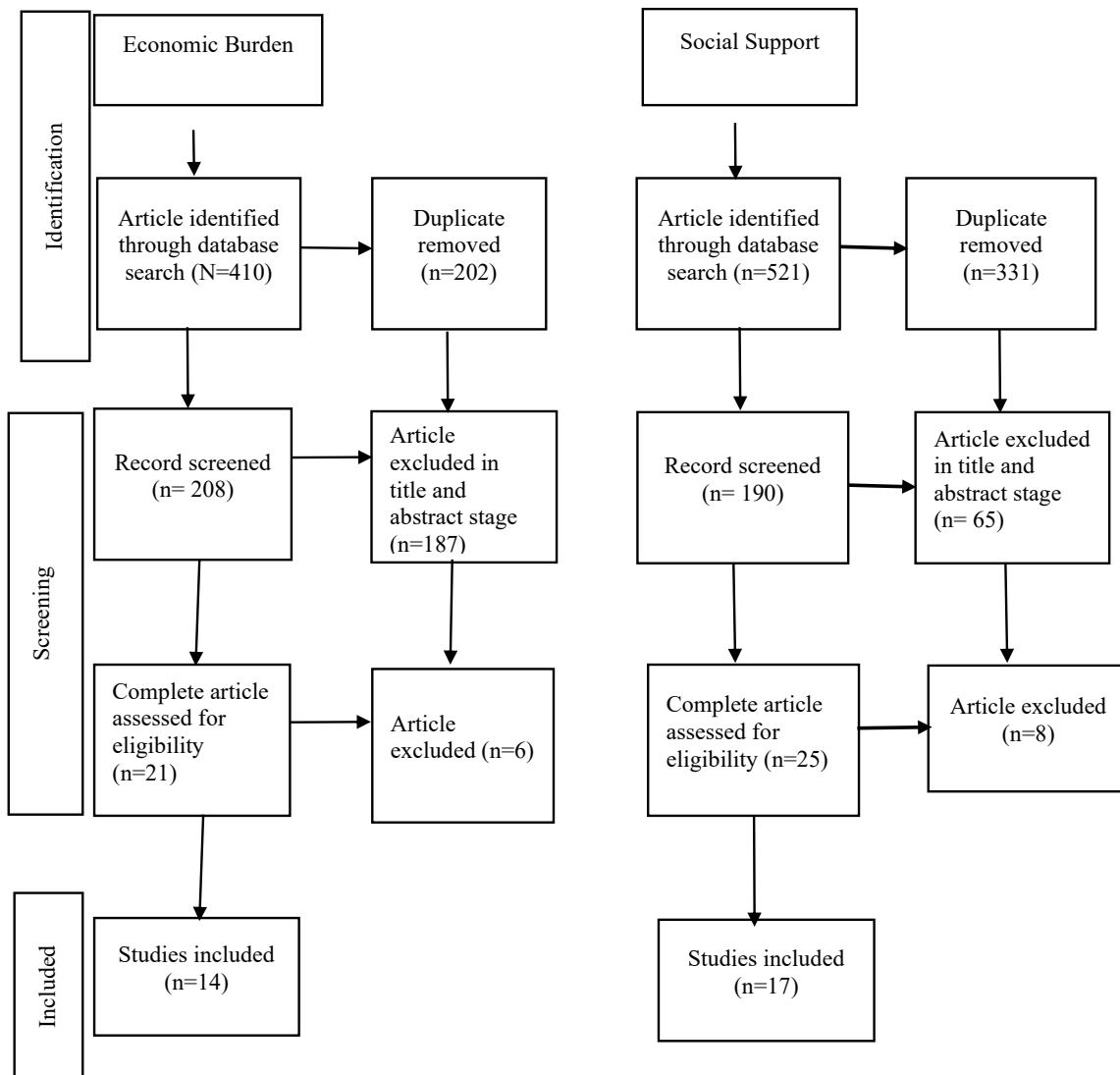


Figure 1. Flowcharts of article search and selection process



Study characteristics

Most economic burden studies have been conducted in developed countries. According to Table 1, 35.7% of economic burden studies were conducted in the United States, 21.4% in Germany, 14.3% in Canada, 7.14% in Haiti, 7.14% in Vietnam, and 12.32% in more than one country. In addition, most of the previous studies on social support were conducted in developed countries. Table 2 shows that 70.5% of the studies were conducted in the United States, 11.8% in Canada, 5.9% in India, 5.9% in Botswana, and 5.9% in Norway. The predominant research designs in the economic burden literature included survey (57.1%), retrospective analysis (21.4%), review (14.3%), and observation (7.1%). In Table 2, the predominant research designs in the social support studies included correlational studies (82.4%), cross-sectional studies (11.8%), and surveys (5.9%).

Economic burdens of individuals with PTSD

The PTSD literature in Table 1 shows that individuals with PTSD face high economic burdens as the ailments disrupt their opportunities to acquire requisite skills, mental health conditions, and productivity. A study revealed that PTSD was linked to high economic burdens, lower health-related QoL, and interruptions in education among adolescents and young adults [17]. The economic burden of PTSD patients is also associated with the costs of medical care services and purchasing recommended medications.

**Table 1.** Economic burden of children and adults with post-traumatic stress disorder

Authors, Year	Study Design	Country	Patients (PTSD)	Primary Outcome	Results
Walker et al, 2003 [18]	Survey study	USA	1225	Healthcare costs	Healthcare costs for women with PTSD were significantly higher. Healthcare costs averaged \$3060 for those with high PCL scores, \$1779 for those with moderate PCL scores, and \$1646 for those with low PCL scores.
Marshall et al, 2008 [19]	Survey study	Vietnam	641	Medical care costs	Medical costs for PTSD are 60% higher than average. PTSD and related mental health comorbidities were associated with increased treatment costs for physical conditions. Healthcare costs are high for people with PTSD as well as economic and personal costs.
Priebe et al, 2010 [20]	Observational Study	Bosnia-Herzegovina, Croatia, and Serbia	526	Treatment outcome and treatment cost	The treatment costs for patients with and without PTSD did not differ significantly at 12 months (€307 and €284, respectively).
Ivanova et al, 2011 [21]	Retrospective analysis	USA	37 668	Direct cost of patients	Direct healthcare costs were higher for patients with PTSD during the study period compared to control subjects with major depressive disorder (\$18753 vs \$17990 for Medicaid and \$10960 vs \$10024 for private insurance. Medicaid or privately insured patients with PTSD had mean annual healthcare costs that were 4.2% to 9.3% higher than matched controls with major depressive disorder.
Lamoureux-Lamarche et al, 2016 [22]	Survey study	Canada	1456	Use of health care and costs of PTSD	Costs associated with outpatient visits, emergency department visits, mental health inpatient stays, physician fees, and medication use were significantly related to post-traumatic stress syndrome. A total of \$838 Canadian Dollars was the adjusted healthcare cost difference between groups.
Fu et al, 2016 [23]	Survey	Canada	133 952	Economics burden (cost)	Lifetime cost estimates range from \$279 million to \$1.22 billion depending on TBI diagnostic criteria. Young children (ages 0-4 years) and the elderly (ages more than 85) have the highest rates of TBI. Males experienced a 53% greater TBI rate and incurred two-fold higher costs than females. This study revealed an enormous health and economic burden associated with TBI identified in the ED setting.
Zuruik et al, 2017 [24]	Retrospective cross-sectional	Haiti	410	General, direct, indirect cost, and intangible cost	In all, \$501706 was spent on patients, with a mean cost of \$1224. There were 63% indirect costs, 19% direct medical costs, and 18% intangible costs. Direct medical expenses were dominated by surgical costs (29%).
Von Der Warth [25]	Review		31	Direct and indirect cost	Annual direct excess costs ranged from 512 US-\$ PPP to 19,435 US-\$ PPP, while annual indirect excess costs were 5,021 US-\$ PPP.
Von Der Warth et al, 2020 [26]	Survey	Germany	34 448	Hospital costs	PTSD was linked with greater hospital costs of €2311 while reimbursement rose by €1387. PTSD-related extra costs are not fully reimbursed. Male patients had higher hospital costs linked to PTSD. On average, PTSD was associated with an extra length of stay of 3.4 days compared with 2.1-4.6 days.
Harper et al, 2021 [27]	Survey study	USA	1377	Healthcare costs	Veterans with PTSD have higher healthcare costs and more mental health needs. As a result of more severe PTSD, emergency and inpatient utilization is more expensive.
Davis et al, 2022 [28]	Survey	USA	Data for graph	Economic burden	There is a far greater economic burden associated with PTSD than with other costly mental health conditions. A total of \$232.2 billion was estimated to be the excess economic burden of PTSD in 2018 (\$19630 per PTSD individual). PTSD costs totaled \$189.5 billion (81.6%) for civilians and \$42.7 billion (18.4%) for military personnel, corresponding to \$18640 and \$25684 per individual with PTSD, respectively.
Dams et al, 2020 [17]	Survey	Germany	87	Healthcare costs	PTSD is linked to high economic burdens, lower health-related QoL, and interruptions in education among adolescents and young adults.



Authors, Year	Study Design	Country	Patients (PTSD)	Primary Outcome	Results
Bothe et al, 2020 [29]	Retrospective cohort study	Germany	64 435	Overall cost	PTSD costs approximately 43000 EUR per individual, three times more than non-exposed controls. Mental disorders cause 59% of these costs, PTSD 18%. In the control group, costs for mental disorders account for 19% of total costs. Two years after an incident diagnosis of PTSD, costs increase by 142%. A general health impairment and many more costs are incurred by individuals with PTSD than by average insurant
Checchi et al, 2022 [30]	Review	USA	2548	Healthcare cost	There was an average 548% increase in gross charges with injury severity scores ranging from \$5457 to \$34898. Measuring the true cost of trauma care is feasible. As hypothesized, trauma care costs are lower than charges. True cost increases with injury severity with variable costs across subgroups.



Abbreviations: PTSD: Post-traumatic stress disorder; PCL: Post-traumatic stress disorder checklist; TBI: Traumatic brain injury; PPP: Purchasing power parity.

According to most of the literature, medical care for PTSD is quite expensive compared to other mental illnesses. According to Marshall et al., the medical costs of PTSD are 60% more expensive than the average costs. These include economic and personal costs [19]. They [19] emphasized that PTSD and other mental comorbidities are associated with increased treatment costs for physical illnesses. A comparison of the direct medical costs of PTSD with other mental health problems, [21] found that the direct healthcare costs for patients with PTSD were higher than those for patients with major depressive disorder, which were 4.2% to 9.3% higher. Additionally, studies conducted among veterans showed that veterans with PTSD had higher healthcare costs and greater mental health needs because their emergency and inpatient utilization rates were higher [27]. To determine if there was a significant difference in the direct costs of patients with PTSD, a study found that the costs for patients with and without PTSD did not differ significantly at 12 months [20]. The study reported that PTSD was highly associated with annual indirect costs estimated at US \$5021 per person per year [25].

Regarding the effect of gender on the cost of treating individuals with PTSD, the literature provides conflicting findings. Walker et al. found that healthcare costs for women with PTSD were significantly higher than their male counterparts [18], while Fu et al. reported that men experienced a 53% higher traumatic brain injury rate and the cost was double that of women [23]. These researchers [23] reiterated that traumatic brain injury poses an enormous health and economic burden.

### Influence of social supports on individuals with PTSD

In the PTSD literature, social support has been identified as an essential factor in the management of PTSD patients. As Table 2 shows, there is considerable empirical evidence that social support plays an important role in reducing PTSD symptoms in patients. Two studies showed that the severity of PTSD was drastically reduced by perceived social support from family and friends [31, 32]. Among sexual minority and non-minority women [33], social support was reported to have positive effects on PTSD and trauma-related difficulties, while low levels of social support among sexual minority women had more severe negative effects.

Regarding the effectiveness of social support in patients with PTSD, research by Johansen et al. showed that the symptoms of PTSD are reduced by higher levels of perceived social support and enhanced by lower levels of perceived social support [45]. Furthermore, McGuire [38] reported that social support significantly buffered the negative impact of Katrina-related traumatic events on depressive symptoms. Another study conducted by Johansen [44] found that the functioning of trauma survivors was negatively impacted by negative attitudes toward social support. Individuals with PTSD who were positive about social support had a higher chance of recovering from their condition.

In addition, as shown in Table 2, a negative relationship was found between social support and PTSD. Shallcross [34] reported a significant negative causal relationship between social support and some PTSD symptoms. As a result, an increase in social support is associated with a decrease in PTSD symptoms. Furthermore, Price [37]

**Table 2.** Social support of children and adults with PTSD

Authors, Year	Study Design	Country	Patients (PTSD)	Primary Outcome	Results
Scarpa et al, 2006 [31]	Correlational study	USA	440	Reduction in symptoms of PTSD	Perceived social support from family and friends predicted reduced PTSD severity.
Laffaye et al, 2008 [32]	Correlational study	Canada	128	Social support	Support from spouse, relative, friend and veteran significantly reduced PTSD symptoms.
Weiss et al, 2015 [33]	Correlational study	USA	694	Social support impact on PTSD and trauma	PTSD and trauma-related difficulties among sexual minority and non-minority women were equally positively impacted by social support, whereas low social support had a more severe negative impact among sexual minority women.
Shallcross et al, 2016 [34]	Correlational	USA	521	The causal link between social support and PTSD symptoms	There was a significant negative causal relationship between social support and some PTSD symptoms. An increase in social support decreases PTSD symptoms.
Dimauro et al, 2016 [35]	Correlational study	USA	465	Association between family members' support and the broader public	Service members perceive broader public support to be significantly higher than support from friends and family.
Cox et al, 2017 [36]	Correlation	Canada	90	Emotion deregulation PTSD and social support	Veterans who have been exposed to trauma showed a statistically significant link between social support and emotion dysregulation, which is of limited clinical significance.
Price et al, 2018 [37]	Correlational study	USA	123	Relationship between treatment of PTSD and social support	Social support during treatment was positively related to increased reduction in PTSD.
McGuire et al, 2018 [38]	Survey	USA	810	Impact of social support on depression PTSD	Social support significantly buffered the negative effect of Katrina-related traumatic events on depressive symptoms.
Dar et al, 2018 [39]	Cross-sectional	India	87	Reduction of symptoms of PTSD	Support from family and friends reduced the association between flood exposure and symptoms of PTSD and depression, while a decrease in such support increased it.
Zeligman et al, 2020 [40]	Cross-sectional study	Botswana	300	Posttraumatic growth	Social support and religious coping strategies significantly impacted posttraumatic growth, both positively and negatively. The strongest predictor of posttraumatic growth was social support.
Campbell et al, 2020 [41]	Correlational study	USA	265	Social support impact on PTSD and treatment outcome	Social support moderated the association between cognitive processing therapy duration and PTSD symptom change. Treatment outcomes may be stronger for veterans with higher levels of social support before treatment.
Quinn et al, 2021 [42]	Correlational study	USA	188	Relationship among caregiver support, PTSD, etc.	Caregiver support, future orientation, and self-esteem were positively correlated. Additionally, PTSD symptomology, abuse history, and negative peer norms were negatively correlated.
Brown et al, 2021 [43]	Correlational study	USA	291	Interpersonal support on parenting competence	Violence exposure and trauma symptoms were associated with lower parenting competence. Violence exposure and interpersonal support sequentially mediated the role of trauma symptoms in parenting competence among substance-dependent mothers
Dodson & Beck, 2021 [44]	Correlational study	USA	249	Social support and post-traumatic cognitive	Negative attitude towards social support is a significant factor in the relationship between PTSD symptoms and social support in interpersonal trauma survivors. Trauma survivors' functioning can be negatively affected by negative attitudes about social support.
Johansen et al, 2022 [45]	Correlational study	Norway	143	Perceived social support and PTSD symptoms	PTSD symptoms can be reduced by higher levels of perceived social support and increased by lower levels.

Authors, Year	Study Design	Country	Patients (PTSD)	Primary Outcome	Results
Jaffe et al, 2022 [46]	Correlational study	USA	161	Use of PTSD patients	Low social support promoted subsequent treatment use but not social support changes. It suggests PTSD service members attended individual therapy for support and social connection.
Grocott et al, 2023 [47]	Correlational study	USA	191	Social support as a buffer mechanism for trauma symptoms among transgender	Perceived support from a significant other moderated the relationship between sexual assault and trauma symptoms. The relationship between sexual assault and trauma symptoms associated with sexual assault was reduced at high levels of support. Support from family and friends did not buffer the association between sexual assault and trauma symptoms.

PTSD: Post-traumatic stress disorder.



reported that social support during treatment helped reduce PTSD symptoms. This indicates that social support is effective in increasing treatment effectiveness. Other studies have highlighted the effectiveness of various other types of social support. A study conducted by Dar [39] found that social support from family and friends reduced the association between flood exposure and symptoms of PTSD and depression, whereas a reduction in this support increased symptoms. Another study by Dimauro [35] pointed out that service members perceived public support as significantly higher than support from friends and family.

The empirical evidence in Table 2 shows the moderating effect of social support in isolation and collaboration with other factors. A study conducted by Grocott [47] revealed that perceived social support moderated the relationship between sexual assault and trauma symptoms. Another study by Campbell [41] reported that social support mediates the association between the duration of cognitive processing therapy and change in PTSD symptoms. Furthermore, Zeligman [40] found that social support and religious coping strategies significantly negatively affected posttraumatic growth.

## Discussion

### Economic burdens of individuals with PTSD

Based on the findings of this scoping review, PTSD represents an overwhelming economic burden for patients, caregivers, and society at large. The economic burden of PTSD includes direct medical care costs and indirect costs. The results of this study demonstrated that there are huge direct costs associated with treating PTSD symptoms [17, 48]. Direct costs of PTSD include but are not limited to, consultation charges, medicine purchase costs, treatment costs, transportation costs, emergency visit costs, and insurance coverage. The direct medical healthcare costs associated with PTSD patients are higher than those associated with other mental health

problems [19-21, 27]. Accordingly, the cost of medical care related to the symptoms of PTSD is quite high and therefore places a huge economic burden on patients and caregivers.

The cost of treating patients with PTSD varies greatly from country to country. Data from the empirical literature shows that the direct annual cost of healthcare for an individual in the USA is \$18640, which is four to five times more than other countries (Figure 2).

PTSD patients in Germany pay US \$4730 annually, which is more than three times what Haiti pays and 14 times what Bosnia, Croatia, and Serbia pay. This shows that the annual cost of PTSD medical care is higher in the developed world than in developing or underdeveloped countries. The direct costs of PTSD depend on the type of medical services and the professionals involved in the treatment. The costs associated with PTSD, particularly in the US, are staggering as they depend on the type of medical and mental health symptoms that the individual or group of people has developed [9]. However, despite the manageable literature on the direct costs of PTSD, Von der Warth [25] estimated the annual indirect costs of PTSD, suggesting that there is a lack of literature on this aspect. While the indirect costs are not easy to estimate, it is important to understand their devastating impact on an economy. Therefore, more studies need to be conducted to determine the full and comprehensive economic burden of PTSD.

This scoping review also found that there are differences in the cost of treating male and female PTSD patients. According to Walker [18], the medical care costs of female patients are higher than those of male counterparts. A study also found that being female is one of the factors that contribute to the cost of treating people with PTSD [48]. This implies that female patients bear more direct and indirect costs due to their nature. This may be due to the severity and complexity of the condition, or a higher likelihood of developing chronic health con-



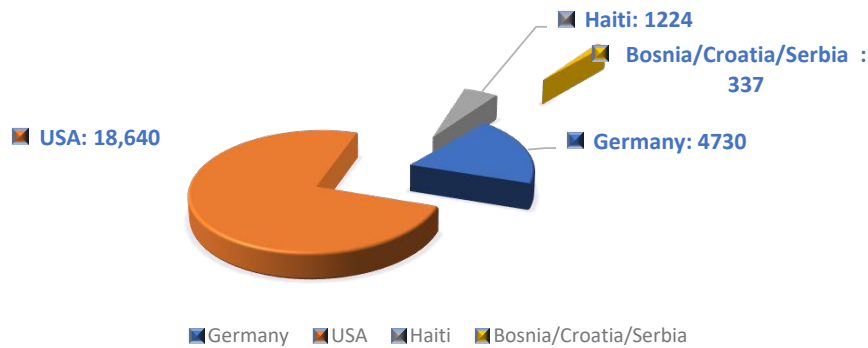


Figure 2. Annual individual cost of PTSD in US Dollars



ditions that require appropriate monitoring and medical care. In contrast to the above findings, Fu [23] reported that the cost of treating male patients with traumatic brain injury was 53% higher than their female counterparts. This is because the frequency of traumatic brain injuries is higher in men. The literature indicates that it is the leading cause of death and disability that can lead to permanent neurological complications [49]. However, variability in the costs of male and female preference remains controversial as the literature is limited, and further studies need to explore this disparity to provide sufficient evidence. Therefore, there is a high direct cost economic burden for patients with PTSD, as mentioned in this study (Figure 3).

**Influence of social support on individuals with PTSD**

This review found that social support plays an important role in the medical care of individuals with PTSD. Through a comprehensive scoping review approach, this study established that social support, regardless of its source, has a significant impact on individuals with

PTSD [45]. It also confirmed that social support and perceived social support significantly reduced PTSD symptoms [31-33]. Hence, social support, such as public relief items, family support, and support from friends, are effective and acceptable ways to help people with PTSD recover and improve their mental health. However, the effect of social support is extremely personalized. The provider must be cognizant of the patient’s age, and culturally sensitive to prevent patients from developing negative attitudes towards social support services [44]. This is because trauma patients' recovery is impaired by negative attitudes toward social support [44].

Furthermore, this study found that social support is negatively associated with PTSD and its symptoms [44, 34]. Accordingly, there is an inverse relationship between social support and PTSD symptoms, suggesting that an increase in social support can lead to a reduction in PTSD symptoms. Social support during treatment has been shown to facilitate the speedy recovery of PTSD patients. This has also proven useful for patients undergoing psychological recovery efforts. Therefore, regardless of the timing of the social support, and provided that



Figure 3. Influence of social support on individuals with PTSD



PTSD: Post-traumatic stress disorder.

it does not violate the societal norms of the target group or their religious beliefs, it facilitates the recovery of the patients from PTSD symptoms.

According to the results, social support, either in isolation or in concert with other factors, is a key moderator in treating PTSD [41, 47]. In this sense, social support plays a moderating role both in the effectiveness of medical care services and in the effectiveness of therapeutic interventions. Social support plays a dual role in improving the mental health of people with PTSD. Therefore, social support should be aimed at people who have experienced traumatic events and who show symptoms of PTSD to curtail the potential negative effects.

### Major gaps identified in the literature

This scoping review found that most of the studies were conducted in developed countries. This indicates that few studies have examined the economic burden or social support for people with PTSD in developing countries, although there is a wealth of literature on the presence of traumatic events and associated PTSD. For example, traumatic events related to war and genocides to which thousands of people have been exposed [50] and traumatic events related to human immunodeficiency virus patients occur repeatedly in Africa [51]. Another study also found a high incidence of PTSD in Ethiopia among internally displaced persons [52]. Therefore, further studies are needed in some developing countries in sub-Saharan Africa and some parts of Asia to determine the economic burden of individuals with PTSD and the social support provided to facilitate their recovery.

Furthermore, most researchers in the economic burden literature have focused on the direct costs of PTSD symptoms and omitted the indirect costs. Therefore, the economic burden has only been partially represented. There was scant literature on PTSD associated with natural phenomena such as floods, wildfires, disease, viral pandemics, and ethno-religious conflicts.

### Conclusion

In this scoping review, we examined the economic burdens and social support associated with PTSD patients. This study established the economic burden of PTSD across the globe. This review revealed that the economic burdens of PTSD in terms of direct personal costs vary across countries. This study underscored the significant impact of gender factors on the economic burden and social support associated with PTSD disorders. The review also found the significant impact of social support in im-

proving the recovery of PTSD patients. Social support is inversely related to PTSD. Its effective mediating role in treating individuals with PTSD reduces its devastating effect on patients, thereby facilitating patient recovery. This study, the first of its kind to the best of our knowledge, laid the groundwork for future studies of the economic burden and social support for people with PTSD.

### Strengths and limitations

The strengths of this study include the use of strict methodological guidelines for conducting a scoping review when retrieving, analyzing, and synthesizing empirical data from various databases. More importantly, this study was driven by the economic burdens and social support for individuals with PTSD. This study is the first of its kind to examine the economic burden and social support for individuals with PTSD. Therefore, our study lays the foundation for future studies on this topic.

This study faced some limitations. First, there were some inherent limitations in conducting a scoping review such as providing breadth rather than depth of knowledge. This was demonstrated in this study when several databases were rigorously searched. We were accountable for assessing the relevance and summarizing the sources included in this study. Second, our primary goal in this scoping review was to identify the global economic burdens and social support for individuals with PTSD. However, when we started the literature search, we discovered that this goal would not be fully achieved due to the unavailability of studies in some parts of the world, particularly in developing countries. Finally, we reviewed articles from academic sources, and the literature search was limited to articles published in English; as a result, significant data contained in foreign articles were not considered.

Further studies need to be conducted in other foreign languages, such as French, Arabic, and Chinese, among others, especially since no empirical literature on economic burdens and social support has been reviewed. Future studies should pay more attention to the indirect costs of PTSD due to the limited literature. Future researchers should also consider using a mixed method of qualitative and scoping review to substantiate the findings from empirical data.

### Ethical Considerations

#### Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or nonprofit sectors.

## Authors' contributions

Conceptualization, methodology and investigation: All authors; Data analysis and original draft preparation: Amos Nnaemeka Amedu; Supervision, review and editing: Veronica Dwarika.

## Conflict of interest

The authors declared no conflict of interest.

## Acknowledgments

This review would not have been possible without the assistance of digital librarians who assisted in formulating search terms and suggesting digital databases. Moreover, we would like to express our gratitude to our chief editor for polishing the language of this study.

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