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Burden of traumatic brain injury in refugee population: unmet need of care and gaps in knowledge

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ABSTRACT

Background and objectives. Due to marked increase in violence, the world is facing problem of refugee population either as a source of refugee population or shelter provider. These refugee population is exposed to prolonged physical and emotional distress over years, may result into spectrum of neuropsychiatric disease conditions including traumatic brain injury (TBI). Although trauma is one of the major events faced by refugee population, the exact details of the injuries still not documented and there is paucity of published literature; further these injuries may be recorded as unspecified.

Methods. The present article is intended to provide a theoretical overview of existing knowledge and gaps on trauma and injuries in refugee population. Authors analysed all relevant articles available on PubMed and Medline using the key words: "Refugee", "Traumatic Brian Injury", "Head Injury".

Results. There is a gap in knowledge for this particular demographic population. They suffer a wide range of physical and emotional to social traumatic events. The most common cause of head injury was assault; however, motor vehicle accidents were less prevalent, and there is an ongoing struggle for resources to fulfil basic needs

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leading to health care taking a backseat. There is high prevalence of post-traumatic stress disorder. Many of the refugees are settled in relative economically poorer countries which further add to the burden of a nation already besotted with internal requirements. There is a need for an international collaboration to tackle unique problem.

Conclusion. Authors recommends urgent need to handle the root causes responsible for the generation of refugee population and at the same time it is necessary to identify the epidemiology, patterns, management challenges and consequences of injuries and barriers to seek and provide care in refugee population.

Introduction

Increased prevalence of violence across the globe, forced a large population to leave their homes which started since the World War II. [1] According to an estimate approximately 60 million people are displaced globally and of which about 22 million have crossed an international border (i.e. refugees). [1] Authors observed most of the world is facing problem of refugee population either as a source or as a shelter provider to refugee population. [2-10] These refugee population is exposed to prolonged physical and emotional distress [11] which can result in spectrum of neuropsychiatric disease conditions [12] including traumatic brain injury (TBI). [13] It is being reported that approximately 2.1 million or 8.8% of refugees and asylum seekers has been given shelter in five wealthiest nations [10] still they do struggle to access health care. [14] In spite of the importance of these issues there is not much literature address many of the disease condition in refugee (or displaced) population[13, 15-17] which include injuries and TBI as well. [18, 19] The present is intended to provide a theoretical overview of existing knowledge and gaps on trauma and injuries in refugee population.

Injury distribution

Although trauma constitute one of the major events faced by refugee population, however the less number of published studies and inadequate data collection largely restricts the detail information regarding injury patterns. [20, 21] The trauma can range from physical and emotional to social traumatic events resulting in impairment in physical or emotional functions. [22-24] The exact details of the injuries may not be available and additionally the injuries may be recorded as unspecified. [21]In one study the patients presented with the complaint suggestive of head injury, fractures, skin injuries and burn injuries. [20, 25] The common cause of head injury was assault however, the motor vehicle accidents were less prevalent (probably due to limited access in refugee camps). [20] Although studies have tried to identify the causes of traumatic brain injury and recognized TBI as a significant cause of morbidity but the details are restricted by paucity of published data and further most of these studies are restricted to single center studies. [26] Many studies have highlighted that TBI is related to long- term neuro-psychiatric sequel [27-30] however exact burden and spectrum is lacking and also the need of the patients in refugee population is not assessed. Studies have further highlighted, refugee patients population usually prefer to use emergency services instead of regular outpatient's services, as these are easily available, affordable and accessible. [20,25]

Challenges in providing health care

Identifying the injured and injuries and providing care to them in refugee camps and refugee population is a big challenge as there is ongoing struggle for resources to fulfill basic needs (adequate food, clean water, shelter, and security) and at the same time no extra support the finances. [31] This can be easily understood by taking the example of refugee population who is settled in United States for years but still barriers to access healthcare. [32] This is not because of the limited resources alone; this may be due to the non-awareness the people to adequately utilize the services as well. [32-34]

How to approach?

Approach to the patients who seek care shall need a good understanding and trust between the victim and health care provider, safe environment, several interviews and overcoming the barriers (language and cultural). [35,36, 37] It has been shown that in the presence of culturally competent people [36-38] and professional interpreter [39-41] the chance of getting details information are more than when there is no interpreter or there was a non-professional interpreter [42]

The current situation

Amnesty International defines a refugee "as a person who has fled their country and is unable or unwilling to return because of a well-founded fear of being persecuted due to their race, religion, nationality, membership of a particular social group, or political

opinion". An asylum seeker is defined as an individual who is seeking international protection and whose claim has not been decided by the country to which they have submitted it. Ultimately, not all asylum seekers will be recognized as refugees. Traumatic Brain Injury is an injury resulting in abnormal brain function arising from the application of an external force to the cranium. It carries immense significance in this population as can be deciphered from our discussion. This significance can be viewed in terms of the difficulty in adapting to a new system and the spectrum of injuries experienced by this population.

Spectrum of injuries [1]

In a retrospective study of refugees of the ongoing civil war in Syria a major portion of the referrals were due to trauma cases when compared to the local population. The most common types of trauma were (in order of prevalence) head injury, fracture, skin injuries, and burns. Compared to the local population motor vehicle accidents were not the common cause of head injuries rather assaults was the most common cause. This was especially prevalent in young males and as expected included larger number of contusions and extra-dural hematoma. Still the amount of reported cases of assaults was less as compared to local population as access to the police department was limited. The lower prevalence of motor vehicle accidents likely reflects the limited presence of motor vehicles in camps and the greater number of people with a driving license and cars in the local population.

Another critical aspect of the refugee population is the prevalence of post-traumatic stress disorder among these cases. These problems of Syrian refugees arise due to further cofounding problems such as low living standards lack of adequate child care and hygiene, somatization of psychological disorders, and also the possible underlying relationship between posttraumatic stress disorder and physical violence which needs further evaluation. Trauma can be a direct cause of this as contusion or injury to the prefrontal cortex may lead to loss of executive function and cause difficulty in adjustment and adaptation. Depression can affect the cognitive functions and delay the return to daily activities. Prefrontal cortex damage leads to higher rates of substance abuse but most studies on psychiatric evaluation of these cases place current use of alcohol or any banned substance as an exclusion criterion and hence this aspect may be missed totally.

Any discussion on the status of refuge and asylum seekers is incomplete without discussing of the aspect of pediatric head injuries. Minors are a substantial portion of the refugee population around the world and trauma, in general, was more common among refugee children than in the locally residing population. Interestingly, minor closed head injury was much more common in local children as compared to refugee children who were more prone to open head injuries. This may be due to the fact that while local population children with concussions and emesis after closed head injury are primarily admitted and observed in a population to avoid a computed tomography of the head and the associated radiation exposure, refugee children are often given step-motherly treatment and discharged. Also, minor head trauma may not be perceived as a compelling reason to come to the hospital for evaluation by refugee families to the same extent as it is for resident parents, explaining the discrepancy observed.

Burden on state health resources and adoption by refugees [2]

One of the most critical aspects of treating a refugee population is the burden it places on the local health care system. While trauma admissions are actually a relatively small fraction of overall emergency admissions (a little over 2% for both refugees and local population), but their possible outcomes such as surgical procedures, extensive operations, longer hospital stays, repeated radiological and laboratory studies, control examinations as outpatients can cripple the existing health care system which may not be adequately geared up for the same. There is a risk of leaving permanent physical and more importantly mental damage in patients, which will increase health costs and thus emphasizes their importance to look at them more than just numerical values among other admissions. Refugees usually tend to admit to emergency clinic for various reasons such as relatively easier accessibility of the emergency clinic and abuse of health system to leave the camps more easily. This can potentially harm the local population emergency and thus lead to unintentional consequences.

Then there is the difficult aspect of adoption of

the local health care system. Entering and navigating a largely westernized healthcare system can be intimidating to someone with no knowledge of the procedures and mental trauma to boot. These individuals may place their own medical needs behind more dominant concerns of safety, securing food and clothing for their family, housing, utilities, or finding legal representation if seeking asylum. Again, opening to their past trauma is a painful aspect which many may not be willing to undergo. Two-thirds of refugees and asylum-seeking patients report not initiating discussion related to war injuries with their physicians. Reasons reported by refugees for withholding this information about a history of injury or trauma included feeling like they should be asked first before bringing anything up and "not wanting to think about it again". Even when medical encounters are successful, adherence to necessary care can prove inconsistent in refugees and asylum seekers. This problem is further magnified when they are finally granted asylum and the follow up has to be at a different hospital.

Eighty-six percent of the world's refugees and asylum seekers populations are resettled in poorer developing nations that may already be struggling to provide adequate resources for their own citizens. Even if some of these refugees make it to a developed nation healthcare costs become the prohibitive factor. Almost all the cases are uninsured and thus may have difficulty affording necessary care. In a focus group, one individual expressed frustration stating, "Doctors always tell us, 'don't worry about money, your health is more important.' But they do not understand our situation". Even after years of struggle and work health care costs at these places prevent from seeking treatment even for their progeny.

Table 1: Prospective problems and solutions for refugee head injury and health care[20, 43]

Problems	Possible solutions
Larger patient load and burden to local resources	Possible health centres near refugee camps set exclusively for the same Mobilization of international funds and international health agencies Possible incentives to health care personnel
Higher rates of open head injuries and emergency admissions	Better availability of minimum barebones setup Emergency services and imaging to be the focus of health care
Poor follow up and adherence	Improved local touch points and integrated health records
Mental health issues	Possible digital solutions to psychiatric care and assessment Increase training of health care personnel for psychiatric counselling
Paediatric head injuries	Specialized resources and specialists for the same Resuscitation fluids, medicines catered for the same.
Health care costs	Subsidized health care, universal funding

Conclusions

There is an urgent need to have a strong will to handle the root causes responsible for the generation of refugee population and at the same time it is necessary to identify the epidemiology, patterns, management challenges and consequences of injuries and barriers to seek and provide care in refugee population. The future not only focuses on the physical nature and its consequences but it should also address neuropsychological, financial and social sequel of the injuries. While taking care of the refugee population that we should be compromising care to local or hosting population as it may result in social imbalance and can create insecurity in the local population. There is a need to further confirm these findings and ascertain that these should be able to access regular services rather than emergency department visits and thus reducing the burden on emergency care services.

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