Socio-demographic factors as correlate of post-traumatic stress disorder and social adjustment among amputees receiving treatment at the Federal Medical Centre, Keffi, Nasarawa State, Nigeria

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Abstract: **The study investigated socio-demographic variables (age and gender) as correlates of post-traumatic stress disorder (PTSD) and social adjustment among amputees at the Federal Medical Centre, Keffi. Adopting an ex- post factor research design, 50 amputee patients (M=33; F=17)- aged 17-72 years with a mean age of 40.02 and standard deviation of 14.213 - were recruited by means of purposive sampling technique to participate in the study. Data was collected using the PTSD scale and the Social Adjustment Scale. Four hypotheses were formulated and tested in the study. Findings indicated that there was a positive relationship between age and PTSD (r (48) = 0.327, P < 0.05). This implies that age has an influence on individual responses to traumatic events with an indication that the event of amputation tends to be more traumatic among younger age than older age individuals. The finding further indicated that there was a statistically significant relationship between older age and social adjustment (r (48) = 0.289, P < 0.05). The analysis further revealed a statistically significant difference between Males and Females (t (48) = -4.200, P < 0.05) on PTSD. Finally, results indicated that Males and Females socially adjust differently to traumatic situations (t (48) = -2.018, P < 0.05). The findings suggest that age and gender significantly predict post-traumatic stress disorder and social adjustment. The study therefore recommends that Government and NGOs as well as other care providers should manage the mental health of amputees and individuals with similar conditions based on their demographic factors in addition to presenting signs and symptoms.**

Keywords: **Post-traumatic Stress Disorder, Social Adjustment, Age, Gender**

I. INTRODUCTION

Exposure to trauma and stressful situations has become a common experience in the lives of many individuals around the world. According to the World Bank (2018), over 180 civilians have lost their lives in suicide bomb attacks in North East Nigeria since late 2016. Furthermore, Amnesty International has reported that clashes between farmers and herders have claimed at least 268 lives in 2018 alone leaving a lot more people with various degrees of life changing injuries in North Central Nigeria (Amnesty International, 2018). A simple reflection brings to mind many recent examples of these kinds of traumas occurring both at the local and international levels - leading to various degrees of injuries and amputations of various parts of the bodies of victims of these traumatic situations. Chief among these various traumatic exposures is the one related to road traffic accidents, which is one of the least studied traumatic events that can impact on individuals and families in Nigeria.

Casual observation of happenings in Nigeria has shown that beside the recent killings and destruction of properties by the insurgents in the North-east and by militants in the Niger-Delta region, farmer/herder crisis in the North Central, road traffic accident is the most common cause of unintended injuries and fatalities to individuals and families in Nigeria (Luka, 2017).

Most trauma research has focused on mental health outcomes after the experience of trauma, while comparatively fewer studies have focused the roles of demographic variables and social factors that make a person more resilient in the face of adversities (Mastin, 2001).

The impact of mass disasters or man-made trauma on the individual is a composite of two elements: the catastrophic event itself and the psychological vulnerability of those affected by the event. Traumatic limb amputation is a catastrophic injury and an irreversible act. Limb loss due to a traumatic injury is sudden and emotionally devastating. The loss of the limb may cause distress in amputees not only due to the loss of a body part but also due to the role limitation and the need for adjustment to the changed lifestyle options (Sahu, Sagar, Sarkar & Sagar, 2016). Many researchers highlighted that traumatic loss of a limb is typically equated with loss of spouse (Sahu, Gupta, Sagar, Kumar & Sagar, 2017) and even loss of one's perception of wholeness (Kingdon& Pearce, 1982). This may result in the patient being severely affected emotionally and resulting in a poor quality of life (Sinha & Van Den Heuvel, 2011). Terrible events that occur in an individual's life, affect the individual and people around him/her; some people respond to these events by having nightmares, re-experiencing the event when awake

and/or avoiding people, places or things that remind of the disasters. These are symptoms of post- traumatic stress disorder (Brewin 2016). It is pertinent to identify and examine the social adjustment of amputees who are at the risk of developing symptoms of post-traumatic stress disorder (PTSD) following the tragedy that leads to such amputation (Byrnes, 2005).

Evidence suggests that posttraumatic stress disorder appears to be more common in amputees following combat or accidental injury (Breslau, 2001). Indeed, research findings support the notion that the presence of a disability puts a person at higher risk for post-traumatic stress disorder (Polsky, Doshi, Marcus, Oslin, Rothbard, Thomas and Thompson, 2005). In addition, literature suggests that people experience mitigated social interaction and relationships, which can further contribute to depressive symptoms (Fitzpatrick, Newman, Archer and Shipley, 1991). Results from a study by Şimsek, Öztürkand Nahya (2020) showed that individuals with post-traumatic lower limb amputation changed their emotions and behaviors after amputation, their body image and self-esteem were negatively affected, their families and the society differentiated themselves, they had negative feelings about their future, and they needed mental support to develop coping skills. The researchers concluded that after amputation, individuals have severe mental problems such as anger, introversion, helplessness, and decreased self-esteem.

Post-traumatic stress disorder (PTSD) is an anxiety disorder that occurs following an event in which the individual perceives that his life or another's is in danger (Akwash, 2014; Kansa, 2009). It is a debilitating, long-standing, and pervasive disorder, with risk of morbidity, chronic physical and psychiatric disturbances and impairment to interpersonal and occupational functioning following exposure to trauma (DSM-III). This disorder is unique among the classification of disorders because all of the criteria (risk of morbidity, chronic physical and psychiatric disturbances, and impairment in interpersonal and occupational functioning) must be present before making the diagnoses, where by no symptom overlap may occur between two cases despite the fact that they both meet the requirement for diagnoses (Foaand Meadow, 1997).

The loss of limb is a life-changing event that has a significant physical, psychological and social impact on a person's day-to-day existence. There has been growing interest among researchers in the psychological and social consequences of amputation, with great diversity are being observed in how people come to terms with their limb loss. Adjustment following amputation involves intricate physical, psychological, and social processes (Gallagher and McLachlan, 2001). The amputation of an individual's body part initiates a process of continuous appraisal and reappraisal through which the individual adjusts to the requirements and limitations imposed by the amputation. Physically, the body has to adjust to amputation setback, phantom pain, achieve functional abilities and his/her functional expectations to be able to perform activities of daily living, resume work and other activities with respect to his/her roles responsibilities and expectations; psychologically, they have to come term with the changed life situation, cope with the amputation and its consequences, accept the changed body- image and also get use to the physical and the mechanical demands of the artificial limb; and socially perform social roles and maintain social contacts (Sinha, 2013). Thus, adjustment to amputation encompass the physical functioning, the psychosocial functioning, and satisfaction with the artificial part of his/her body (Gallagher and McLachlan, 2004) at the individual level as well as in the society with respect to physical changes brought about by amputation and the challenges posed by the changed state, which truly reflects the degree to which the individual is adjusted to amputation. However, the focus in this study will be on social adjustment.

Successful adjustment allows the individual to deal with the amputation related changes in ways that facilitate health (Michael, 1996) because research has shown relationship between individual's adjustment to amputation and improved metabolic control (Akcaand Cinar, 2010).

Being socially adjusted to amputation is important for functioning and quality of life (Sinha, 2013) and to enable social participation of amputees. Adjustment has mostly been implied as limiting and the negative consequences of amputation. Based on the forgoing, this study focused on the influence of age and gender on post-traumatic stress disorder and social adjustment among amputees given thatdemographic variables may be related to post-traumatic stress and social adjustment. Researchers examined demographic variables and found them to influence post-traumatic stress; for instance, studies have found gender differences in PTSD and the female are more likely than male to develop PTSD (Johnson and Thompson, 2008; Lazaratou, Paparrigopoulos, Galanos, Psarros, DikeosandSaldatos, 2008). A possible explanation to this is the specific reactions that result from feminine characteristic to a traumatic event (Chou, Tsai, and Wu, 2006). Additionally, there various studies that have associated old age with increased risk of developing PTSD (Lewin, Carrand Webster, 1998). However, a study by Lazaratou et al (2008) have suggested a contradictory result.

This study sought to examine whether demographic variables influence PTSD and social adjustment among amputees.

Statement of problem

The prevalence of post-traumatic stress disorder and poor social adjustment occasioned by the increase spread of the nefarious activities of the Boko Haram sect, marauding herdsmen, and bandits and ethno-religious conflicts which have resulted in the destruction of lives and property is a serious issue that has caught the attention of international community in 2009 (Alhassan , Akukiand Ajayi, 2019), just as the impact of communal conflicts, complications of diseases such as diabetes mellitus and cancer and auto crashes etc. on victims and sufferers have become of great concern to individuals, families, the general public as well as

the researcher. All these provides the basis for which this study seeks to investigate the subject matter.

Clashes between herders and farmers in Adamawa, Benue, Taraba, Ondo, Kaduna has resulted in 168 deaths and various types of life-threatening injuries in January 2018 alone (Amnesty International, 2019).Nasarawa state has witnessed some forms of political and ethnic violence in the past, which have resulted in the loss of lives and properties, leaving some victims with various degrees of injuries, while others were amputated. How they make adjustment to physical, social and psychological demands of these adversities becomes a problem. This is because amputation is a distressing experience that is likely to pose considerable challenges in terms of psychological and social adjustment. Not only does the procedure incur permanent physical loss, but it may also lead to restrictions in many other important life domains (Desmond and McLachlan, 2002).

Amputees will likely experience economic hardship, decreased level of medical treatment effectiveness and decreased level of treatment compliance (Byrnes, 2005). The prevalence of post-traumatic stress disorder and associated poor social adjustment outcomes demand research.The present study therefore, set out to examine the influence of age and gender on post-traumatic stress disorder and social adjustment among amputees in Keffi.

Empirical review of literature

Several studies have been conducted on the correlates of demographic factors (age and gender) on PTSD and social adjustment. For instance, Joseph, Benedick, Flanagan, Breslin and Vallier (2021) reported in their study that age less than 45 years (younger age) was an independent risk factor for the development of PTSD. Similarly, Yohannes, Gebeyehu, Adera, Ayano and Fekadu (2018) also reported in their study that females experience PTSD more than males. The result indicated that females were 2.23 times more likely developed PTSD than males. In the same vein, Khodadadi-Hassankiadeh, Nayeri, Shahsavari, Yousefzadeh-Chabok and Haghani (2017) found out that age and gender significantly predict PTSD. The results of their study showed that females experience more PTSD than males. Also, the result further indicated that age especially younger age had a significant relationship with PTSD among accident victims.

In a bid to examine the socio-demographic factors (Age and Gender) as correlates of PTSD among amputees, there are mixed findings regarding the relationship between age and social adjustment to amputation. Some researchers have explained these findings by arguing that older adult may not react as strongly to amputation as younger individuals, because they view changes in mobility and body image resulting from limb loss as undesirable but somewhat expected at their age (Horgan and MacLauchlan, 2004).

Lastly, Phelps, Williams, Raichle, Turner and Ehde (2008) noted that women in their study sample reported significantly greater levels of PTSD symptomology six months after amputation.

Based on the review of relevant literature, a close look at the correlates of age, gender, post-traumatic disorder and social adjustment of amputees has not been consistently studied especially among amputees receiving treatment at Federal Medical Centre, Keffi, Nasarawa State, Nigeria. Hence, the study.

Hypotheses

Based on the literature reviewed, the following hypotheses were tested:

1. There will be a significant relationship betweenage and post-traumatic stress disorder among amputees receiving treatment at Federal Medical Centre, Keffi, Nasarawa State, Nigeria.
2. There will be a significantrelationship betweenage and social adjustment among amputees receiving treatment at Federal Medical Centre, Keffi, Nasarawa State, Nigeria.
3. Gender will differ significantlyon post-traumatic stress disorder among amputees receiving treatment at Federal Medical Centre, Keffi, Nasarawa State, Nigeria.
4. There will be a significant difference between males and females' social adjustment among amputees receiving treatment at Federal Medical Centre, Keffi, Nasarawa State, Nigeria.

II. RESEARCH METHODOLOGY

Research design

The study adopted an ex-post factor research design. This is because none of the variables in the study was be manipulated. An ex-post factor design is a method in which groups with qualities that already exist are compared on some dependent variable. In ex post Factor research design, the investigator cannot directly manipulate the variables.

Sample and Sampling Techniques

A total of 50 participants (amputees), comprising of 33 males and 17 females, age ranged between 17 to 72 years with a mean aged at 40.02 and standard deviation at 14.213, and who were willing and interested to participate in the study were selected studyfrom Federal Medical Centre Keffi. The participants were selected using convenient sampling method which cut across all gender, tribes, marital status, age and religion.

Instruments for data collection

A questionnaire designed to collect information on demographic variables (age, gender, marital status and level of education), post-traumatic stress disorder and social adjustment was used for data collection.

The Post-traumatic Stress Disorder Scale developed by Davidson, Malik and Travers (1997) is a 17-item scale which

measures each DSM-IV symptoms of PTSD on a five-point frequency and severity scales. The scale has a good test-retest reliability (r =0.86), internal consistency (r = 0.99). For the frequency items alone, it was 0.97 and for severity items alone it was 0.98. The scoring format includes: scores of 1-3 signifies 'minimal'i.e., within the range of normality;scores of 4-6 signifies 'subclinical' PTSD;score 7-9 signifies 'clinical PTSD';scores 10-12signifies severe PTSD; and score 13-15 signifies very severe PTSD.A pilot study was conducted to establish the reliability coefficient of the instrument and a reliability coefficient of .82 was established.

To measure social adjustment, the Social Adjustment Scale-Self-Report developed by Zweig and Turkel (2007) was used. It is a 10-item scale, scored on a 5-point Likert Scale. They reported a Cronbach alpha coefficient of .62. The result of the pilot study yielded a Cronbach alpha coefficient of .71.

Statistical analysis

Statistical analyses were carried out using the statistical package for the social sciences (SPSS version 23). Descriptive statistics and inferential statistics (Pearson Product Moment Correlation and T-test) were used to analyze data collected.

Procedure

A letter of permission was taken to the management of the Federal Medical Center Keffi, permission was granted; the researcher met with amputees and explained himself and purpose of the study, obtained their consent to participate, they were assured that information provided will only be used for the purpose of the study and will be treated with utmost confidentiality. Participants were also at liberty to pull out of participation at any time they felt uncomfortable participating. For proper response to the items on the questionnaire, the PTSD scale was domesticated into Hausa language by an expert in the field of languages. The domesticated version was subsequently given to an independent expert who translated it back to English language. Both translated versions were administered to amputees who were receiving treatment at the facility involving the researcher asking questions based on the items of the scale and their responses were recorded by the help of the researcher.

III. DATA ANALYSIS AND RESULTS

Table 1: Frequency and Percentages of the Demographic Characteristics of Participants

Demographic Variables		Frequency	Percentages
Gender	Male	33	66.0
	Female	17	34.0
	Total	50	100%
Marital Status	Single	14	28.0
	Married	30	60.0
	Divorced	1	2.0
	Widowed	5	10.0
	Total	50	100%
	No Education	15	30.0
Education	Primary	3	6.0
	Secondary	15	30.0
	Tertiary	17	34.0
	Total	50	100%
Socio-Economic Status	Low	27	54.0
	Middle	21	42.0
	High	2	4.0
	Total	50	100%

Table 1 shows the frequency and percentages of the demographic characteristics of 50 participants (33 males and 17 females) in Keffi. Age ranged from17-72 years with a mean age of 40.02 and standard deviation of 14.213. Marital status: single (N=14, 28%), married (N= 30, 60%), divorced (N= 1, 2%) and widowed (N= 5, 10%). Education: no education (N= 15, 30%), primary (N= 3, 6%), secondary (N= 15, 30%) and tertiary (N= 17, 34%). Socio-economic status: low (N= 27, 54%), middle (N= 21, 42%) and high (N= 2, 4%).

Hypothesis One

The hypothesis stated that there will be a statistically significant relationship between age and post-traumatic stress disorder among amputees in Keffi. This hypothesis was tested using Pearson Product-Moment Correlation as displayed in Table 1.

Table 2: Summary Results of the Relationship between Age and Post-Traumatic StressDisorder (PTSD) among Amputees in Keffi

Independent Variables	M	SD	df	r	P
Age	40.02	14.213	48	0.327	0.05
PTSD	29.38	17.238			

Table 2 shows the summary results of the Pearson Product-Moment Correlation between the scores for age (M= 40.02; SD= 14.213) and PTSD (M= 29.38; SD= 17.238). Further analysis revealed an indication of a significant [$r(48)=0.327$, $P< 0.05$] relationship between participants' age and PTSD. In other words, the stated hypothesis was confirmed in this study. This implies that age has a significant influence on individual responses to traumatic events.

Hypothesis Two

This hypothesis that there will be a statistically significant relationship between age and social adjustment among amputees in Keffi was tested using Pearson Product-Moment Correlation as displayed in Table 3.

Independent Variables	M	SD	df	r	P.
Age	40.02	14.213	48	0.289	0.05
Social Adjustment	25.84	9.719			

Table 3: Summary Results of the Relationship between Older age and Social Adjustment among Amputees in Keffi

Table 3 shows the summary results of the Pearson Product-Moment Correlation between the scores for participant's age (M= 40.02; SD= 14.213) and social adjustment (M= 25.84; SD= 9.719). Furthermore, the analysis revealed a significantrelationship between participants age and social adjustment in Keffi [r(48)= 0.289, *P*< 0.05]. In other words, the stated hypothesis was confirmed in this study. This result implies that age of amputees tends determine the social adjustment of amputees to adjust traumatic situation in life.

Hypothesis Three

This hypothesis, which stated that there will be a statistically significant difference between males andfemales in their experience of post-traumatic stress disorder among amputees in Keffi, was tested using Independent Sample t-test as displayed in Table 3.

Gender	N	M	SD	df	t	P.
Male	33	23.03	14.611	48	-4.200	0.05
Female	17	41.71	15.442			

Table 4: Summary Results of the Difference between Male and Female on PTSD among Amputees in Keffi

Table 3 shows the summary results of the sample t-test of the mean and standard deviation scores of male amputees (M= 23.03; SD= 14.611) and female amputees (M=41.71; SD= 15.442). Furthermore, the analysis revealed a statistically significant difference [t(48)= -4.200, *P*< 0.05] between male and female amputees' experience of PTSD in Keffi. This result implies that female amputees tend to be more traumatised than their male counterparts in such a traumatic life situation.

Hypothesis Four

The hypothesis stated that, there will be a statistically significant difference between males and females' social adjustment among amputees in Keffi. This hypothesis was tested using Independent Sample t-test in table 5.

Gender	N	M	SD	df	t	P.
Male	33	23.91	9.645	48	-2.018	0.05
Female	17	29.59	8.980			

Table 5: Summary Results of the Difference between Male and Female Social Adjustment among Amputees in Keffi

Table 5 presents the summary results of the t-test analysis of the mean and standard deviation scores of male amputees (M= 23.91; SD= 9.645) and female amputees (M=29.59; SD= 8.980). Further analysis revealed a statistically significant, t(48)= -2.018, *P*< 0.05 difference between male and female amputees' social adjustment in Keffi. The outcome of the result indicates that in an event of traumatic situation like amputation, males are less socially adjustable than female individuals.

IV. DISCUSSION OF FINDINGS

Amputation following trauma is emerging as a major health burden on the families of the affected, to the victims and the society as well. Loss of limbs causes inability to support self and the family that further leads to various psychiatric disorders in many patients. The study examined the correlates of socio-demographic factors (age and gender difference) on PTSD and Social Adjustment among Amputees at the Federal Medical Centre, Keffi. The result of Hypotheses One indicated that younger age amputees have a significant relationship with PTSD - indicating that younger amputees tend to be more traumatised than older ones. The result corroborates the results of Joseph et al., (2021); Yohannes et al., (2018); and Khodadadi-Hassankiadeh et al., (2017) whose results indicated that younger people tend to have PTSD more than their older counterparts after a traumatic event.

The result of Hypothesis Two revealed that there was a statistically significant positive relationship between participants age and social adjustment in Keffi. In other words, the stated hypothesis was confirmed in this study. The result which implies that older age individuals will adjust after a traumatic event than the younger aged individuals is in dissonance with the results of Horgan and MacLauchlan (2004) which indicated that older adult cannot socially adjust to traumatic event compared to their younger aged counterparts.

The result of Hypothesis Three showed that there was a significance gender difference in the experience of PTSD. The result indicated that female amputees tend to be more traumatised than their male counterparts in such a traumatic life situation. The result of the present finding is in agreement with the results of Yohannes et al, (2018); Khodadadi-Hassankiadeh et al (2017); and Phleps (2008) whose results indicated that females were 2.23 times more likely developed PTSD than malesin the same traumatic event.

Lastly, the results of Hypothesis Four showed that female adjust to traumatic event than their male counterparts.

V. CONCLUSION AND RECOMMENDATIONS

The study was conducted toadd to knowledgeregarding the existence of relationship between social demographic factors, PTSD and social adjustment of in the literature regarding the relationship between the social demographic factors (age and gender), post-traumatic stress disorder and social adjustment among amputees in Keffi by exploring and understanding how these variables impact on post-traumatic stress development and social adjustment.

Based on the findings of the study, the study concludes that age and gender correlate with post-traumatic stress disorder

and social adjustmentamong amputees receiving treatment at Federal Medical Centre, Keffi, Nasarawa State, Nigeria. The study also found out that there was a significant difference between male and female in the experience of post-traumatic stress disorder and social adjustment.The study found out that female amputees experience PTSD than their male counterparts who are receiving treatments at the centre and surprisingly, theyadjust better than their male counterparts. With this finding, government and NGOs as well as other care providers should manage the mental health of amputees and individuals with similar conditions based on their demographic factors in addition to presenting signs and symptoms. Lastly, there is a need to investigate and discover other factors that may influence post-traumatic stress disorder and social adjustment among amputees receiving treatment at the facility.

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