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GENDER, AGE, LEVEL OF EDUCATION AND TRIBE ON BODY-IMAGE ANXIETY AMONG LOWER-LIMB AMPUTEES

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Abstract

The study explored the influence of gender, age, level of education and tribe on manifestations of body-image anxiety among lower-limb amputees, and this was tested with four corresponding hypotheses. Purposive sampling technique was employed in the identification of 55 participants: in-patient and out-patients, drawn from prosthesis and orthotics centre of the National Orthopedic Hospital, Igbobi, Lagos. Their age ranged from 14-70 (mean age = 38 years). Participants were assessed with Amputees Body-Image Scale (ABIS), a 29-item questionnaire with likert-type responses. All participants indicated clear concern with body-image (anxiety) with the following mean and SD scores: ($X = 62.50$, $SD = 9.98$) for males and ($X = 76.72$, $SD = 10.4$) for females. Results showed that gender significantly affects manifestations of body-image anxiety among amputees while no statistically significant differences were recorded for age, level of education and tribe. It was recommended that management of amputees should take cognizance of the emotional component of the condition.

Key Words: *Body-image; Anxiety; Lower-limb; Amputation*

Introduction

This study provides insight on body image anxiety among lower-limb amputees. Motivation for this study arose from observations that amputation is largely viewed as negative, while surgery of any kind could be accompanied by despair, helplessness, loss of control, body image distortion, sense castration, rejection and death anxiety. Thus, the person who has lost a limb must confront not only the reality of reduced functionality and anatomical defect, but also the body image changes associated with it and the personal meanings they carry (Wilson & Brebs, 1983; Edomwonyi & Onuminya, 2014). Unfortunately, appearance-related concerns, specifically those that relates to amputation are often de-



emphasized in health care, chiefly because more emphasis is laid on the biomedical model of health and treatment. This model presents a patient as a body that is sick while treatment is independent of their mind or mental state. However, in its definition of health, the World Health Organization, 1946, stressed that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Thus the inclusion and understanding of the emotional dimensions of amputation will pave way to more holistic management of amputatees.

Body image is the term that has come to be widely accepted as the internal representation of the outer appearance. Cash (1997) referred to this as “the view from the inside”, which he contrasted with an external rating of appearance “the view from the outside”. Thompson, Heinberg, Altabe and Tantleff-Dunn (2002) noted the following variables associated with body image: weight satisfaction, size perception accuracy, body and appearance satisfaction, body esteem and concern. The concept of body-image therefore encompasses ways in which a person feels that his or her body-image will affect interactions, playing a significant role in social and interpersonal relationships (Bessell, Dures, Semple, & Jackson, 2012), as well as the mental picture people have of their physical self, and equally important, the mental picture they believe others have of them (Bessell, Dures, Semple, Jackson, 2012, Gilg, 2016). This mental image incorporates perceptions of and attitudes towards appearance, functionality, and sexuality (Gilg, 2016). Body image is not permanent but is characterized by constant change as a result of development, trauma and environment (McRobert, 2012). Thus these changes in appearance that many people endure as a result of trauma or disease can trigger body-image anxiety which is characterized by significant worries, fear and alarm about real or imagined defect in physical appearance with resultant challenges with psychological wellbeing (APA, 2000; Agbu, 2015).

Amputation is the removal of a body part. It also means a therapeutic or traumatic cutting off of an arm or leg or any part of the body: It could also be an accidental loss of a body part. Amputation occasionally involves an emergency surgical procedure performed due to irreparable traumatic damage to a part of the body but when possible, the level of the amputation is decided before operation so that the patient is informed of the extent of the loss (Watson, 2007). Lower limb loss is therefore defined as the parting with one or two limbs of the body and this can be caused by trauma due to different forms of accidents, diseases like diabetes, cancer, poor circulation, and conditions that are present at birth (Flannery & Faria, 1999).

Types of amputation includes: above knee amputation (amputation through the femur); knee disarticulation amputation (amputation through the knee joint); below knee amputation (trans-tibial amputation, which preserves the knee joint to make prosthetic fitting and ambulation easier). Others include foot amputation which comprise of syme's amputation (amputation through the ankle also called modified ankle disarticulation amputation); chopart amputation (amputation of the forefoot) and toe amputation (amputation of the toe as a result of disease condition or trauma) (Minter & Doherty, 2010).

Milani (1999) provided insight on the levels of amputation namely: toe amputation, mid-foot amputation (removal of forefoot as a result of trauma) Also inclusive is syme or foot amputation associated with the removal of the joint at the ankle, performed for extensive foot trauma which produces a painless durable extremity end that can withstand full weight bearing. Below knee amputation is a transitional amputation performed at a level of 12-15cm below the knee. This type of amputation is preferred in lower limb amputation because of the importance of knee joint and the energy requirements for walking. Other levels of amputation include knee disarticulation (removal of the lower leg from the knee joint); above knee amputation, hip disarticulation which is usually performed through the hip joint or lesser trochanter of femur due to trauma or neoplasm; hemipelvectomy which involves amputation of one half of the pelvis and the whole limb as a result of malignant disease and finally, hemicorporectomy which is the removal of the lower half of the body which involves the loss of the lower extremities, a urinary diversion and loss of sex organs usually performed for advanced pelvic cancer or sepsis.

Freud (1949) theorized that the better part of a person's psychological makeup was predicated by a primal fear of having his genital removed, as captured in his Oedipal Complex. Though Freud's theory continued to generate controversy even among psychoanalysts, its insight on the understanding of body-image anxiety is instrumental. Similarly, Adler (2002) presented the concepts of organ and psychological inferiority. Organ inferiority refers to the inferiority associated with defects in physical appearance, which could lead to and psychological inferiority, while psychological inferiority is associated with negative self-talk and thought processes. Self-objectification theory (Fredrickson & Roberts, 1997) is also a contemporary framework that offers a sociocultural perspective on perceptions of the body image. The theory posits that women especially, are commonly sexually objectified across interpersonal situations (Macmillan, Nierobisz & Welsh, 2000; Swim, Hyers, Cohen & Ferguson, 2001) and media-based encounters. Examples of sexually-objectifying situations include leering, sexually suggestive comments, sexual assault, and exposure to hypersexualized



media images of women. Over time, women who encounter recurrent sexual objectification come to view themselves as objects rather than subjects, prioritizing their external appearance over their internal experience. The adoption of this external vantage point on the self is theorized to manifest behaviorally in the habitual monitoring of one's appearance, which leads to body shame (Calogero, Borpugh & Thompson, 2007; Moradi & Huang, 2008; Schaefer, Burke, Calogero, Menzel, RossKrwaczyk, & Thompson, 2018).

Breakey (1997) using an Amputee Body Image Scale (ABIS) examined self-perception and psychosocial well-being among 90 male lower-limb amputees. Findings indicated significant positive correlations between physical appearance and self-esteem, anxiety and depression. This suggests that amputee's evaluation of his or her physical appearance can influence these variables in either a positive or negative manner. A significant correlation was also found between negative self-image and life satisfaction. Result of the study supports the hypothesis that a relationship exists in amputees between their perception of their physical image and their psychosocial wellbeing.

In a related study, Fishman (1956) studied 96 amputees, all war veterans, to determine whether a relationship existed between self-concept and adjustment to prosthesis. His findings indicated a significant relationship. In addition, he identified several human needs common to amputees and they include: economic security, status and respect of one's peers, physical functioning with prosthesis, visual and auditory consideration of prosthesis and achievement in various activities with the use of prosthesis. This affirms that once these needs cannot be completely satisfied, the consequences of the frustration that arises can result in psychological conflict and varying behaviour. Similarly, Goffman (1963) observed that some amputees experience psychic pain that translate into a stigma. As a consequence, they expect to be ostracized from the group as less acceptable human being. Fearing rejection, they may view themselves as revolting and project these feelings on relatives and friends. They may withdraw from and reject their friends to avoid the pain and anxiety of the anticipated rejection (Henker, 1979).

In a more recent study by Holzer, Sevelde, Fraberger, Bluder, Kickingrand Holzer (2014) comprising 298 patients with uni and bilateral lower-limb amputation. The patients received a 118-item questionnaire including the Multidimensional Body-Self Relations Questionnaire (MBSRQ), the Rosenberg Self-esteem (RSE) scale and the SF-36 Health Survey (QoL). Result indicates that unilateral lower-limb amputees showed a significant lower MBSRQ score of 3.07 ± 0.54 compared with 3.41 ± 0.34 in controls ($p < 0.001$) and a lower score in

the RSE compared to controls (21.63 ± 4.72 vs. 21.46 ± 5.86). However, differences were not statistically significant ($p=0.36$). Patients with phantom pain sensation had a significantly reduced RSE ($p=0.01$). The SF-36 health survey was significantly lower in patients with lower-limb amputation compared to controls. The conclusion drawn was that lower-limb amputations significantly influence patients' body image

Mugo (2010) in her thesis asserts that anxiety is a normal response to perceived stressors or threats and is manifested by feelings of nervousness or fear, recurrent and uncontrollable frightening thought, and a variety of physical responses (e.g increased heart rate, sweating, difficulty breathing, muscle tension. Horgan and MacLachlan (2004) noted that that body image distortion and body image anxiety occur among some people who have amputation. Thus anxiety has been found to be associated with depression, poorer perceived quality of life, lower level of self-esteem and higher level of general anxiety (Horgan & MacLachlan 2004; Mozumdar & Roy, 2010). Further, losing a limb has been found to dramatically change a person's sense of body image and consequently self-image, which has, in turn, been associated with a person's satisfaction with life (Saradjian, Thompson & Datta 2008, Mugo, 2010). Due to satisfaction with life, after lower limb amputation, men are more concerned with the restoration of function and women with regaining a feminine body image (Saradjian, Thompson & Datta 2008, Mugo, 2010). In the same vein, since depression is associated with increased physical disability in older adults, social discomfort and perceived stigma could therefore impact on reduced physical and social activities indirectly as well as directly (Horgan & MacLachlan 2004, Mugo, 2010). In addition, little is known about the threat of amputation to sexual activity. Gail and Walters (1996), in their study of 76 amputees showed that three fourths of the participants reported restriction in sexual activity due to amputation. Among the variables predicting more negative impact were, age, being unmarried, and greater feelings of amputation-fostered self-consciousness in intimate situations. However, few patients (less than 10%) reported having received advice from health care practitioners about how amputation might affect sexual activity. This therefore calls for intervention that is geared towards adjustment to limb amputation.

Objectives of Study

In order to contribute to knowledge in this area, the study presents the following objectives and corresponding hypotheses:

1. To ascertain the influence of gender on the manifestation of body-image anxiety among lower-limb amputees



2. To assess the influence of age on the manifestation of body-image anxiety among lower-limb amputees
3. To ascertain if level of education of lower-limb amputees will affect manifestations of body-image anxiety
4. To ascertain if tribe of lower-limb amputees will influence manifestation of body-image anxiety

Research Hypotheses

1. Female amputees will manifest higher level of body-image anxiety than males
2. Younger amputees (aged 14-40) will manifest higher levels of body-image anxiety than older ones ((41-70)
3. Amputees with higher level of education (diploma/University) will present more manifestations of body image anxiety than those with lower education (primary/secondary)
4. Igbos with lower limb amputation will have less body-image concerns than Yorubas

Method

Participants

Participants for this study were lower limb amputees who were in-patient and out-patients drawn from prosthesis and othoticscentre departments of the National Orthopedic Hospital, Igbobi Lagos. They consisted of all available patients with lower limb amputation (35 males and 20 females) and their age ranging from 14-70 (mean age = 38 years, SD = 12.78). Eleven of the patients are married while others were single. Data for this study was obtained in October 2015.

Instrument

Assessment was carried out with the Amputee Body Image Scale (ABIS) developed by Breakly (1997). It is a twenty nine-item likert-type scale designed to measure feelings towards the body image. Responses were extracted using the following format of (1) none of the time, (2) rarely, (3) some of the time, (4) most of the time, and (5) all of the time. Scores for this scale ranged from 0 to 116, where low scores indicate the relative absence of a body image concern, and higher scores indicate the presence of a more severe problem. In addition, three of the questions are reverse-scored. Breakey (1997) reported the following psychometric properties of: reliability of 0.88, and Cronbach's alpha of 0.92.

Procedure

After due hospital research protocol, purposive sampling method was used to select participants, who were subsequently clearly briefed about the research.

They were assured of utmost confidentiality of their responses while their consent was obtained. Thereafter, the copy of the instrument was administered to each, and was collected on completion. It took an average of 15 minutes to complete the questionnaire. The responses were collated and statistically analyzed

Data was chiefly obtained with the aid of test instrument, the Amputee Body Image Scale (ABIS). This data was supported with insight from some secondary data obtained from reviewed literatures. Respondents' interest was protected and relationship between researcher and respondents were also not exploited.

Research design

This is a between subject design; consequently, the independent t test statistic was used to analyze data.

Result

This section presents result of findings.

The first hypothesis which seeks to determine gender influence in the manifestation of body-image anxiety, was tested and findings are reported in Table 1

Table 1: Mean, SD and t-test scores of male and female participants

Measure	Male (no. 35)		Female (no. 20)		t-test	Critical t	Sig
ABIS	Mean	SD	Mean	SD			
	62.50	9.98	76.72	10.4	1.98*	1.67	.05

Note: *Significance <.05, df = 53, critical t = 1.67

Result in Table 1 shows that female amputees manifested higher levels of body-image anxiety than males with mean score of 76.72 while that of the male is 62.50. The independent t-test statistics was used to ascertain if the observed difference is significant. The calculated t-test reports a figure of 1.98, at the degree of freedom of 53, and significant level of .05. In addition, the critical t, usually extracted from the standard t-distribution table indicates a figure of 1.67. Generally a significant level is endorsed if the calculated t is higher than the critical or Table t, which is the case presently, thus we can safely conclude that the observed difference in mean score is significant. This indicated that hypothesis one that states that female amputees will manifest higher level of body-image anxiety than males is accepted.



Table 2: Mean, SD and t-test scores on influence of age on manifestation of body-image anxiety

Measure	14-40 (no. 19)		41-70 (no. 36)		t-test	Critical t	Sig
ABIS	Mean	SD	Mean	SD			
	71.63	9.74	73.56	10.42	.66	1.67	.05

Note: *Significance <.05, df = 53, critical t = 1.67

Result in Table 2 shows that older participants in the age range of 41-70 obtained higher mean scores than the younger ones. The scores were 73.56 and 71.63 respectively. In order to ascertain if the observed differences are statistically significant, a t-test was computed. Result indicates t-test score of .66 at degree of freedom of 53 and significant level of .05. Since the obtained t-test is lower than the critical t, it is safe to state that the observed differences are not significant, therefore hypothesis 2 that states that younger amputees (aged 14-40) will manifest higher levels of body-image anxiety than older ones ((41-70) is rejected.

Table 3: Mean, SD and t-test scores on influence of level of education on manifestation of body-image anxiety

Measure	Primary/Secondary(no.20)		Diploma/University (no. 20)		t-test	Critical t	Sig
ABIS	Mean	SD	Mean	SD			
	74.30	10.43	72.09	10.03	.76	1.67	.05

Note: *Significance <.05, df = 53, critical t = 1.67

Result on Table 3 shows that those with lower level of education manifested higher levels of body image anxiety (mean = 74.30) compared with those with higher level of education (mean = 72.09). t-test statistics was thereafter used to ascertain if this observed differences is statistically significant and result shows a non-significant finding of: t = .76, critical t = 1.67, significance level = .05. Therefore the third hypothesis that states that amputees with higher level of education (diploma/University) will present more manifestations of body image anxiety than those with lower education (primary/secondary) is rejected.

Table 4: Mean, SD and t-test scores on influence of tribe on manifestation of body-image anxiety

Measure	Yoruba (no.31)		Igbo (no. 18)		t-test	Critical t	Sig
ABIS	Mean	SD	Mean	SD			
	74.71	10.33	70.084	9.75	1.08	1.67	.05

Note: *Significance <.05, df = 53, critical t = 1.67

Result in Table 4 assesses the influence of tribe on the topic under study. Study was limited to Yoruba and Igbo tribes, which make up significant number of

patients studied. It was observed that Yorubas presented more levels of body-image anxiety than Igbos. However, the finding was not significant as attested by the t-test. We can then conclude that hypothesis four that states that Igbos with lower limb amputation will have less body-image concerns than Yorubas is rejected.

Discussion

This study aligns with contribution of knowledge in the area of psychological underpinnings and insight to amputations. Specifically it investigated body-image anxiety among lower limb amputees. It is important to note that a concern with the body-image is gradually gaining relevance in literature and in social media and this is somehow exacerbated by the appearance-fixated culture fuelled by the mass media. This therefore pre-disposed those that perceive themselves as unattractive to intense emotional and existential difficulties.

Four hypotheses guided the present study and they sought to ascertain the influence of gender, age, level of education and tribe on manifestations of body-image anxiety among amputees. Study population was extracted from an orthopedic hospital in Lagos state. From the findings in Table 1, it was observed that female amputees presented significant body-image anxiety concerns than males. Socio-cultural observations show that the female body is often objectified and evaluated more frequently than males. Thus, they are more likely than males to learn that their physical appearance is important to themselves and society. As a result, females consider and invest in their physical appearance often while mutilation in this regard could result in heightened anxiety. Self objectification can therefore provide insight on situations which heighten the awareness of an individual's physical appearance (Fredrickson, Barbara & Kristen, 2005). Primarily, objectification theory influences women and girls as a result of expected social and gender roles (Bartky, 1990). In the same vein, Ziad, Yasmin and Alaa(2008) corroborated that factors associated with high prevalence of psychological symptoms included female gender, lack of social support, unemployment, traumatic amputation, shorter time since amputation, and amputation below the knee.

Hypothesis two, as presented in Table 2 revealed that age do not significantly influence manifestations of body-image anxiety among participants. This is an interesting finding and an explanation could be that the trauma of amputation effects all equally, irrespective of age and background. In line with this explanation, Chapmen (2009) assert that irrespective of age, patients often experience psychological distress after undergoing an amputation, whilst among frequently reported problems were generalized sadness, anxiety, crying spell



and insomnia. However, Seymour (2002) revealed that adult patients with disabilities who cannot function effectively with their jobs presents still more adjustment needs and problems. Similarly, in an interesting report by Woods, Hevey, Ryall and Keeffe (2018), it was noted that adults who are sexually active could experience depression and anxiety due to body exposure self-consciousness during sexual activities

In Table 3, research sought to determine the influence of level of education on manifestation of body-image anxiety among amputees. No significant difference was discovered in this regard. Looking closely at the finding, participants with lower level of education presented higher mean scores than those with higher level of education. Though the t-test result was not significant but this slight difference in mean is all the same interesting to note. Observations show that those with higher education have slightly better opportunities and financial backing that aids adjustment, while this may be almost absent for those with lower levels of education. Thus the slight difference noticed in the scores could be as a result of tensions of lesser opportunities and re-adjustment after amputation.

From the findings in table 4, we observed that Yorubas presented higher levels of body-image anxiety than Igbos, however, the observed difference was not significant. In taking note of this slight difference, we could opine that cultural sentiments, belief and practices could influence responses in this regard. For some, amputation is taken as the will of God and as such, inevitable, while some could view it as a burden to the family, loss of mobility, loss of job and in extreme, a curse. Kohl (1984) assert that a person who has lost a limb must see himself or herself as a person recovering from a physical challenge and not a burden to the family. Thus positive attitude is key to psychological and physical adjustment.

Conclusion

In a bid to assessed body-image anxiety among lower-limb amputees, the study proposed four hypotheses of which only one was accepted. It was found that while gender significantly influenced manifestation of body-image anxiety among amputees, age, level of education and tribe had no significant impact in this regard, an insight to the fact that amputation experience is equally traumatic to all. However, in general, it was observed that all participants obtained high scores in the Amputee Body-Image Scale employed for eliciting responses in this area, as they scored more than average on this scale. This shows that worries with the body-image, is quite prevalent among amputees in this study, while such psychological difficulties is most often ignored in treatment and

rehabilitation. This study therefore calls for holistic management of patients in this regard. This study was without its limitations. A larger number of participants is recommended for further studies. Researcher could study others areas such as depression, death anxiety, religiosity in future studies. It would also be interesting to study other demographic variables such as marital and employment status in order to further enrich literature in this area.

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