

PSYCHOLOGICAL CORRELATES OF TRAUMATIC EXPERIENCES AND COPING STRATEGIES OF POST AMPUTATION: A CASE STUDY OF MULAGO SPECIALIZED NATIONAL HOSPITAL , KAMPALA UGANDA.

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Abstract Background: The study assessed the effect of psychological correlates of traumatic experiences on coping strategies of post-amputation basing on evidence from Mulago specialized national hospital, Kampala-Uganda. It specifically analyzed the personality styles that enhance coping among amputees, assessed the psychological consequences among amputees, and examined the psychological interventions among amputees.

Methodology: The study adopted a hospital-based prospective post-treatment design employing a quantitative research approach. The quantitative data were collected using questionnaires from 72 patients who were admitted for amputations and attending weekly amputee clinics and those using prostheses and orthosises. The data was processed at both the descriptive and inferential levels using SPSS version 20.0.

Results: The study found extraversion as a statistically positive correlate with the confrontational form of coping style ($r = 0.279$, $p = 0.031 < 0.05$). It found a significantly positive correlate that enhanced planful problem solving ($r = 0.278$, $p = 0.032 < 0.05$) and positive reappraisal ($r = 0.301$, $p = 0.019 < 0.05$) compared to conscientiousness as a negative correlate of coping styles particularly self-control ($r = -0.326$, $p = 0.011 < 0.05$) and escape avoidance ($r = -0.263$, $p = 0.043 < 0.05$). Results showed abnormal depression (46.7%), suffering abnormal anxiety (45.0%) alongside demonstrating symptoms of at least 2 Post-Traumatic Stress Disorders (46.7%) as the psychological consequences. The psychological interventions study found included specialized physician services (60.0%), primary care provision (45.0%) and financial assistance (46.7 among others

Conclusion and discussion: Personality styles of extraversion, agreeableness, and conscientiousness are crucial in the coping styles among amputees and therefore need to be well established and aligned with supporting initiatives. Administrative staff of specialized units needs to put in place workable measures like avoiding unfair self-blame and inculcating a belief that they are still worth as to help amputees to improve their self-esteem thereby minimizing adverse psychological consequences.

1

Background

Over the years, Uganda has been experiencing the heaviest burden of Orthopedic and head injuries from road traffic accidents (Balikuddembe *et al.*, 2017). At present, over 28.9 deaths per 100,000 populations occur annually due to road traffic accidents (WHO, 2013). Although victims survive, many of them however remain with severe damages and injuries on their bodies. Nevertheless, shared experiences due to traumatic events and after amputation, gave insight into the kind of life amputated victims are going through including, psychological torture, loss of employment, body image loss among others. To have a deeper insight, efforts were made to dedicate a scheme to the lives of individuals after amputation.

In the present society, several people have experienced limb loss for one or more reasons resulting in a total change of body image (Okello *et al.*, 2019). Loss of a limb is a tragic event and in many circumstances, amputation cannot be avoided. Amputation involves a change in the body structure (Burger & Marincek 2007). At the same time, amputation has got a great influence on many activities; participation in various activities that people used to do can be retarded hence affecting the quality of life of victims economically, socially, and psychologically. Peoples' lifestyles are forced to change; due to disability caused by amputation, sources of earning a living are partially or badly affected (Mugo, 2010). Although stump problems disrupt the day-to-day use of artificial limbs, (Salawu *et al.*, 2006) urge that good clinical practices and psychoeducation services aid continued use of prosthetic limbs with a significant reduction in psychological illness observed in various studies (Srivastava, 2010; Mugo, 2010; Bessell *et al.*, 2012).

According to (Dieter *et al.*, 2017) Amputation entails the removal of various body parts that leaves an individual physically incapacitated. An early researcher such as Padula and Friedmann (1987) asserts that amputation practices have been proficient since 43,000 BCE mainly for ritualistic and vocational reasons. However, amputation practices with prostheses made of fiber, wood, bone, and metals, often lined with rags, started as early as 1,500 BCE to cater for punitive and curative reasons, about ritualistic and vocational reasons.

Worldwide, more than 900,000 people are living with minor limb loss (Amoah, 2018), as a result of ways of life, amputation continues to be a major health problem among adults (Kathryn *et al.*, 2018). According to (Kakra *et al.*, 2018), more than 2 million people in the United States live with amputations equivalent to 185,000 amputations occurring each year. In the US, 54% of amputations are due to non-traumatic reasons, such as diabetes, peripheral artery disease, and Less than 2% of amputations are related to cancer (Ramirez & Menaker, 2017). While 45% is a result of trauma which is one of the leading causes of death and disability in many LMICs, Uganda is no different (Amputee Coalition of America, 2014).

Although persons with physical disabilities have been assisted to participate in society through the provision of technologies such as prosthetic limbs and orthotic bracing devices, the relationship between coping in the present trauma and they're psychological well-being has not induced keen interest to care providers, while amputation also leads to emotional and physical distress (Srivastava *et al.*, 2010).

Amalraj *et al.*, (2017) highlight a direct connection of one's' body image with psychological adjustment. According to Anna *et al.*, (2016), the changes in appearance that many people endure as a result of trauma or disease can completely alter one's pre-existing body image and take him or her far from his ideal body image (Anna, 2016). Independent of the cause of amputation, whether it is due to vascular, traumatic, or orthopedic causes, it is a mar surgery that affects the lives of these patients. According to Kalpana *et al.*, (2014), the dynamic construction is subject to revision and reconstruction in response to both internal and external stimuli. In Uganda, several amputees have failed to appreciate the use of prostheses as a perfect answer to their challenge of lacking a limb or limbs. This is attributed to psychological problems associated with their use (Orthopedic report, Kiruddu General Referral Hospital, 2017). The affected individuals have abandoned the prosthetic devices due to the discomfort. Therefore, this research sought to assess the relevance of clinical counseling on post amputated individuals using prostheses and orthosises.

Study Scope

Geographical scope

The study was carried out at the orthopedic ward in Mulago Specialized National Hospital in Kampala district Uganda.

Content Scope

The study focused on Psychological correlates and Coping strategies. The independent variable is Psychological correlates being characterized by personality style, psychological consequences; anxiety, depression levels, and PTSDs while the dependent variable which is coping strategies being reflected by Confrontation, distancing, self-control, seeking social support, positive reappraisal, escape avoidance, and planful problem solving

Time Scope

The study was carried out for a period of 4 months from March 2019 to July 2019. simply because the researcher intended to accomplish this study within the institution's academic calendar.

2 Limitations of the study

The researcher focused mainly on adult amputees not considering children who are also victims.

However, this was due to the failure of children to express their feeling as they were considered in the pre-test.

3 METHODOLOGY

Study design

The study was a hospital-based prospective post treatment study employing quantitative research approaches with descriptive and correlative research design for collecting and analyzing data. This was done for data description and interpretation of information. The data collection and research activities tend to narrow to particular sites, subjects, materials, topics, questions, and themes, to study extensively the background, current status, and environmental interactions of a given organizational unit; an individual, group, institution, or community.

The study was quantitative in that the researcher sought inquiries on the problem based on testing the variables, measure with numbers, and analyzing with statistical procedures. It was also correlative because it sought to establish the relationship between personality styles and coping strategies among amputees in Mulago National Specialized Hospital (MNSH) Kampala District, Central Uganda.

Study site

This study was conducted in Mulago National Specialized Hospital (MNSH) located in Kampala District, Central Uganda. Mulago National Specialized Hospital has been selected for this study because it is the major hospital where orthopedic rehabilitation services are provided in Uganda. Secondly, Mulago National Specialized Hospital has a cosmopolitan population being the country's capital city and surrounded by densely populated districts of Wakiso and Mukono. This makes Mulago handle numerous amputations. Approximately 90% of the country's amputations are attributed to motorbike accidents in the city locally known as Boda Bodas which people use to avoid city traffic jams.

Study population

The study population in this case comprised of patients who have undergone amputation in Mulago National Referral hospital. A total of 89 clients are amputated annually per 1500 patients received annually (Gakwaya, 2005).

Inclusion criteria

These included patients who had been clinically examined and were amputated, patients attending weekly amputee clinics, and amputees fitted with prostheses and orthosises.

Exclusion criteria

Patients who do not want to participate in the study after being explained about the nature and purpose of the study. Patients with a history of psychiatric disorders and associated physical disabilities other than amputation were excluded from the study.

Sample size determination

From the study population of 88 patients who are amputated annually, a sample of 72 patients was obtained and recruited into the study as shown below. From the study population, the sample size was estimated using the formula $n=4pq/L^2$ (Krejcie and Morgan 1970).

Where:

n = sample size required

p =estimated number of amputees

q =1- p

L =desired errors (required precision).

Estimated value of p = 81%

Desired error = 10% =0.1

$$n=4 \times 0.81(1-0.81) \\ 0.12$$

$n=72$

Thus a sample size of 72 was used.

Sampling techniques

The study used a simple random sampling technique to select 72 respondents (male and female) to collect data. At the same time, consecutive sampling of patients was also used for those attending weekly amputee clinics and those using prostheses and orthosises until the required number was obtained.

3.1 Sampling frame

Research Instruments

These are tools used for data from the field. In this study, the researcher used the questionnaire (Performa sheet) to elicit for socio-demographic characteristics of respondents and assess for the psychological intervention. On another hand, standardized tools were used to assess for other independent variables in the study including anxiety, depression, and PTSD. This study used the Big five inventory for the personality test, Hospital Anxiety, and Depression Scale (HADS), DSM V, and Ways of Coping Questionnaire for data collection.

Table 1.

Category of respondents	population	sample	Sampling technique
Male amputees	64	52	Simple random/ consecutive sampling
Female amputees	24	20	Simple random & consecutive
Total	88	72	

Self –administered Performa Sheet

This sheet was designed by the investigator to collect data relevant to socio-demographic characteristics such as age, sex, marital status, cause of amputation among others. Data were collected postoperatively within 2-3 weeks

Big five Personality Inventory (BFI)

Personality traits were measured based on the Big Five model, using the Big Five Inventory (BFI). This questionnaire was developed by McCrae and Costa (1995) as a guide to discovering one’s personality traits. This method comprises 44 items (adjectives) referring to specific individual characteristics, e.g., extraverted, enthusiastic. Respondents had to evaluate each item using a 5-point scale ranging from 1 = Disagree strongly, to 5 = Agree strongly. Each of the five personality dimensions (Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience). A score of 5 indicates “Yes”, you strongly agree with the statement, and 1 indicates “No”, you strongly disagree with it

Hospital Anxiety and Depression Scale (HADS)

The study used the Hospital anxiety and depression scale (HADS) to determine anxiety and depression levels among amputees. The HADS has two subscales: the anxiety subscale (HADS-A) and the depression subscale (HADS-D). Each subscale contains seven items for a total of 14 items in the HADS. The reliability of HADS was found to have Cronbach’s α for the total HADS, the HADS-A and HADS-D of 0.78, 0.73, and 0.76 respectively. It has cutoff point ≥ 8 for each subscale to be positive for anxiety and depression

Ways of Coping Questionnaire (WCQ):

This tool was developed by Lazaus and Folkman (1988). It was designed to assess the patient thoughts and actions in dealing with stressful incidents in their social life. It consists of 66 items designed to measure 8 different coping strategies namely; confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape avoidance, planful problem solving, and positive reappraisal. The first four coping methods measure emotion-focused coping and the rest measure problem-focused coping. The original scale, responses were measured on a 4-point Likert scale with response options of doesn’t apply/not used at all (1), used somewhat (2), used quite a bit (3), and used a great deal (4). It was modified in this current study WCQ into three-point Likert Scale: with the following responses scoring doesn’t apply/not use at all (1), used a little bit (2), and always used (3). The current study followed the same system, a high score indicates greater use of that particular coping strategy.

Quality Control

Pretest

In this present study, the researcher pre-tested the questionnaire before data collection to enhance its validity. The pretest was done to determine the comprehensibility of the questions, the ability of the questions to elicit the required data and to detect any ambiguity in the questions.

Validity

Validity refers to the appropriateness of the instrument or validity is the extent to which research results can be accurately interpreted and generalized to other populations. The researcher with the help of the supervisor used the content validity index (CVI) which was a scale developed by computing relevant items in the questionnaire. This was done by employing the following formula:

$$CVI = \frac{\text{Number of valid items}}{\text{Total of number of items}} \times 100$$

3.1.1 $I = 66/66, = 1/1 = 100 = 0.99$

The results obtained a 0.99 which was above 0.6 figured by the researcher which was then taken as a valid instrument as considered valid by (Amin, 2005)

Reliability

Reliability of data refers to whether repeating the same measurement under similar conditions yields the same results (Kumar 1990). The reliability of the questionnaires was improved through pretesting of pilot samples from the field by issuing 20 questionnaires which enabled the rephrasing of some questions. Data were entered into a statistical package for social scientists (SPSS) to determine the reliability of a tool. Cronbach alpha coefficient (2004) was used to assess internal consistency. The score turned out to 0.8 and then the instruments were considered reliable for the study.

Reliability table

Cronbach's alpha

No of items

.8222

66

Data collection procedure

The student got an introduction letter from the dean school of the postgraduate which was presented to the management of the Mulago orthopedic department through the Mulago research management team. Upon authorization, the student was issued an acceptance letter that introduced him to staff and clients at the orthopedic wards.

With the help from the management at the orthopedic ward, the student-constructed a sampling frame that helped him identify patients to be contacted during data collection.

The student then embarked on data collection with the help of three research assistants (staff) from the orthopedic department having sought consent from respondents and explaining to them the purpose of the study while ensuring confidentiality. Since a given portion of the target population was illiterate and semi-literate, consideration was made in such cases and the questionnaires were administered and Patients were interviewed individually by the researcher and the trained health professional (research assistants) and questionnaires were filled on behalf of the respondents, to elicit data on the requires socio-demographic factors, available interventions and other variables about the study objectives.

Statistical Data Analysis

After collecting data, it was edited, coded, and entered into the computer using the statistical package for social scientists (SPSS) version 16. Editing was done during and after data collection, whereby the student had to make sure that the exact number of questionnaires administered are returned to detect abnormalities that could have risen.

Coding was done by assigning numerical and alphabetical numbers to responses in the questionnaire. Pre-coding was done by assigning numbers in some sections of the questionnaire. Post coding was done after fieldwork to assign numbers to open –ended responses in form of suggestions from respondents.

Data entry was done using a statistical package for social scientists (SPSS) to put responses for the possibility of producing necessary statistics during analysis.

Data cleaning was done by removing irrelevant information from the questionnaire to minimize mistakes in statistical output.

Descriptive statistics such as Frequencies and percentages were used to analyze objectives 2 and 3. Inferential statistics; Pearson's correlation coefficient was used for objective 1 to test for the relationship between personality style and coping strategies of post-amputation. The study took 0.05 as a standard level of rejecting or accepting the hypothesis.

Ethical Considerations

Permissions

Before going into the field to collect data, the researcher first obtained an introductory letter from the Faculty of Health Sciences, Uganda Martyrs University through Uganda Martyr's university ethical review committee. Authorization was then obtained from the Mulago Department of Orthopaedics.

Table 2.

Demographic characteristic		Frequency(N = 60)	Percentage (%)
Age in years	18-25	14	23.3
	26-35	24	40.0
	36-45	11	18.3
	Above 45	11	18.3
Gender	Male	39	65.0
	Female	21	35.0
Marital status	Married	20	33.3
	Not married	30	50.0
	Divorced/separated	3	5.0
	Widowed	7	11.7
Education level	None	4	6.7
	Primary	8	13.3
	Secondary	24	40.0
	Tertiary	24	40.0
Current working status	Yes	21	35.0
	No	39	65.0

Study Benefits and Risks

The participants were informed of the benefits related to this study. The participants were informed that the study had no risks associated with one’s participation.

Informed Consent

Informed consent of the study participants was sought before data collection by verbal consent in both English and Luganda. The objectives of the study were discussed with participants.

The information obtained from the participants was kept with the utmost confidentiality. The names of the participants were not included in the questionnaire but rather unique codes were considered.

The Right to Self-Determination

The principle of self-determination means that prospective participants have the right to decide voluntarily whether to participate in a study, without risking any penalty or prejudicial treatment (Polit& Beck, 2008). In this research, respondents were treated as ‘autonomous agents’

Justice

In this study, the selection of the sample was conducted according to the eligibility criteria where the researcher ensured that the respondents have the right to fair treatment before, during, and after they participate in the study. The researcher also ensured that the respondents’ privacy was maintained throughout the study.

4 RESULTS AND ANALYSIS OF FINDINGS

Response Rate

The study as was the original plan targeted a total of 72 amputees as respondents but received complete responses from 60 who were patients admitted for amputations. This meant that the study received an 83.3% response rate which was considered sufficient to address the research objectives.

Demographic characteristics

The demographic characteristics considered included sex, formal education level, age, and marital status of the patients attending to amputee clinic. The descriptive results in this regard were as presented in Table 3 below.

4.1 Table 4.1: Demographic characteristics of the amputees

Source: Primary 2019

Table 3.

Traumatization and amputation aspects		Frequency(N = 60)	Percentage (%)
Time period when Traumatic event occurred	Months ago	26	43.3
	1-3years ago	26	43.3
	More than 3 years ago	8	13.3
Time period of amputation	Months ago	31	51.7
	1-3years ago	24	40.0
	More than 3 years ago	5	8.3
Type of amputation	both lower limbs	2	3.3
	left arm	1	1.7
	lower limb	47	78.3
	Right arm	1	1.7
	upper arm	1	1.7
	Upper Limb	8	13.3
Cause of amputation	Accident	43	71.7
	Amunition(Bomb, Land mine)	2	3.3
	Chronic Illness(Diabetes, Cancer)	11	18.4
	Others(Infection, Mob Justice, Extraction machine, Bite)	4	6.7

Table 4.1 above shows that most of the amputees were aged in the youthful age of 26 to 35 years 24(40.0%) compare to the minority who were either aged 36 to 45 years 11(18.3%) or above 45 years 11(18.3%). The results also show that most of the respondent amputees were male 39 (65.0%), not married 30(50.0%), and with the highest education level of either secondary 24(40.0%) or tertiary 24(40.0%). As presented in the table above, most of the amputees were not working 39(65.0%). These demographic results show how adequate the study has addressed the various psychological situations manifested since the varied views representative of all categories found in the population were included.

The descriptive results about when the traumatic events occurred, when amputation took place, and their respective causes are presented in table 4.2 below;

4.2 Table 4.2 Traumatic events, types and their causes

Source: Primary 2019

Results about the traumatic events show that most of the amputees had experienced traumatic events that occurred to them 1 to 3 years ago 26(43.3%) compared to the minority who had experienced the event more than 3 years ago 8(13.3%). Most of the amputees as seen in the table above were of the lower limb 47(78.3%) followed by the upper limb 8 (13.3%) with the least in the left arm 1(1.7%), right arm 1(1.7%), and upper arm 1(1.7%).

Results additionally show that as accidents 43 (71.7%) as the most common cause of the amputation, followed by chronic illnesses like Diabetes and Cancer 11 (18.4%) with the least cause as ammunition particularly the bomb and or land mines 2(3.3%). This finding shows that a diversity of causes explains amputations and while some can be unavoidable some have to show at some later times of life specifically the chronic conditions.

4.3 The personality styles that enhance coping among amputees in Mulago specialized national hospital, Kampala-Uganda

The first objective of this study was to analyze the personality styles that enhance coping among amputees in Mulago Specialized national hospital, Kampala-Uganda. To attain this objective, descriptive results about

Table 4.

Personality styles		Frequency (N = 60)	Percentage (%)
Extraversion	Less	12	20.0
	Fair	41	68.3
	More	7	11.7
Agreeableness	Less	9	15.0
	Fair	30	50.0
	More	21	35.0
Conscientiousness	Less	11	18.3
	Fair	37	61.7
	More	12	20.0
Neuroticism	Less	12	20.0
	Fair	31	51.7
	More	17	28.3
Openness	Less	6	10.0
	Fair	44	73.3
	More	10	16.7

the personality styles alongside coping among amputees in Mulago specialized national hospital were first presented as shown in table 4.3 and table 4.4 below. Thereafter the personality styles and coping approaches were subjected to Pearson Correlational analysis and results were presented in table 4.5 below.

4.4 Table 4.3: The personality styles among amputees attending Mulago specialized national hospital

Source: Primary 2019

above shows most of the amputees attending Mulago specialized national hospital scoring moderately on all the personality styles that extraversion 41(68.3%), agreeableness 30(50.0%), conscientiousness 37(61.7%), neuroticism 31(51.7%) and openness 44(73.3%). The study results however show that personality style of most manifested as agreeableness 21(35.0%) followed by Neuroticism 17(28.3%), then openness 10 (16.7%) as compared to extraversion 7(11.7%) as the least amongst the amputees attending Mulago specialized national hospital.

The study was a way of establishing the personality styles that enhance coping among amputees in Mulago specialized national hospital additionally established the coping styles adopted by the respondent amputees. The descriptive results in this regard were as presented in table 4.5 below;

4.5 Table 4.4: The coping styles demonstrated among amputees attending Mulago specialized national hospital

Source: Primary 2019

The study results show the often demonstrated coping styles amongst amputees as positive appraisal 17(28.3%) then followed by distancing 15(25.0%). The other coping styles often include seeking social support 12(20.0%), planful Problem solving 10 (16.7%), accept responsibility 8(13.3%) and escape avoidance 8(13.3%). The study results show confrontational coping style 6(10.0%) as the least demonstrated amongst the amputees attending Mulago Specialized Unit. This means that a diversity of coping styles manifest amongst the amputees.

Table 4.5 Correlational Results for the personality styles that enhance coping among amputees in Mulago specialized national hospital

above shows that openness and neuroticism are not statistically significant correlates that enhance coping styles amputees in Mulago specialized national hospital ($p > 0.05$). The results in Table 4.4 suggest

Table 5.

Coping styles		Frequency (N = 60)	Percentage (%)
Confrontational	Rarely	24	40.0
	Sometimes	30	50.0
	Often	6	10.0
Distancing	Rarely	31	51.7
	Sometimes	14	23.3
	Often	15	25.0
Self-control	Rarely	33	55.0
	Sometimes	20	33.3
	Often	7	11.7
Seeking social support	Rarely	28	46.7
	Sometimes	20	33.3
	Often	12	20.0
Accept responsibility	Rarely	33	55.0
	Sometimes	19	31.7
	Often	8	13.3
Escape avoidance	Rarely	30	50.0
	Sometimes	22	36.7
	Often	8	13.3
Planful Problem solving	Rarely	28	46.7
	Sometimes	22	36.7
	Often	10	16.7
Positive reappraisal	Rarely	35	58.3
	Sometimes	8	13.3
	Often	17	28.3

that extraversion as a personality style has got a statistically positive correlate with the confrontational form of coping style demonstrated among the respondent amputees in Mulago specialized national hospital ($r = 0.279$, $p = 0.031 < 0.05$). The result implies that amputees who score high on extraversion as a personality style are mostly confrontational in copying with situations than those who score less on extraversion.

above shows that agreeableness as a personality style has similarly got a significantly positive correlate with planful problem solving ($r = 0.278$, $p = 0.032 < 0.05$) and positive reappraisal ($r = 0.301$, $p = 0.019 < 0.05$) as a coping strategy. The result means that amputees who score high on agreeableness as a personality style mostly demonstrate planful problem solving alongside reappraisal and vice versa.

Lastly findings shown above indicates that conscientiousness as a personality style significantly a negative correlate with coping styles particularly self-control ($r = -0.326$, $p = 0.011 < 0.05$) and escape avoidance ($r = -0.263$, $p = 0.043 < 0.05$). The finding means that demonstration of high conscientiousness as a personality style lowers self-control and escape avoidance and vice versa.

4.6 The psychological consequences among amputees in Mulago specialized national hospital, Kampala-Uganda

The second objective of the study was to determine psychological consequences among amputees in Mulago specialized national hospital, Kampala-Uganda. In the study, the amputees were asked as to rate the different aspects of the psychometric tools for psychological conditions as it applies to them. The descriptive results in this regard were as presented in table 4.4 below.

Table 6.

Personality styles	Coping Styles							
	Con-frontational	Dis-tanc-ing	Self-Control	Seeking social support	Accept responsi-bility	Escape avoid-ance	Planful Problem solving	Positive reap-praisal
Pearson Correlation	0.279*	0.219	-0.085	-0.068	-0.060	-0.055		-0.092
Sig. (2-tailed)	0.031**	0.093	0.518	0.608	0.650	0.674	0.075	0.487
N	60	60	60	60	60	60	60	60
Pearson Correlation	0.061	0.059	-0.003	0.207	0.018	-0.110	0.278*	0.301*
Sig. (2-tailed)	0.645	0.655	0.980	0.113	0.894	0.403	0.032**	0.019**
N	60	60	60	60	60	60	60	60
Pearson Correlation	-0.029	0.014	-0.326*	0.140	-0.153	-0.263*	0.083	0.105
Sig. (2-tailed)	0.825	0.916	0.011**	0.285	0.245	0.043**	0.527	0.423
N	60	60	60	60	60	60	60	60
Pearson Correlation	-0.015	-0.019	0.017	-0.143	0.190	-0.010	-0.007	0.189
Sig. (2-tailed)	0.907	0.883	0.897	0.277	0.146	0.937	0.960	0.149
N	60	60	60	60	60	60	60	60
Pearson Correlation	-0.192	-0.005	-0.016	-0.161	0.082	0.160	-0.218	-0.225
Sig. (2-tailed)	0.141	0.970	0.905	0.219	0.535	0.223	0.095	0.084
N	60	60	60	60	60	60	60	60

** Correlation is significant at the 0.05 level (2-tailed).

Table 7.

Psychological consequences	Frequency(N = 137)	Percentage (%)
Depression	Normal	11 18.3
	Borderline case	21 35.0
	Abnormal	28 46.7
Anxiety	Normal	13 21.7
	Borderline case	20 33.3
	Abnormal	27 45.0
PTSDs	None	21 35.0
	Atleast 1	11 18.3
	Atleast 2	28 46.7

Table 8.

Psychological interventions	Poor N(%)	Satisfactory N(%)	Excellent N(%)	Unavailable & needed	Unavailable & unneeded
Support groups	18(30.0)	16(26.7)	1(1.7)	19(31.7)	6(10.0)
Financial assistance	23(38.3)	28(46.7)	1(1.7)	7(11.7)	1(1.7)
Counseling Services	28(46.7)	3(5.0)	0(0.0)	26(43.3)	3(5.0)
Primary Care Provider	23(38.3)	27(45.0)	1(1.7)	7(11.7)	2(3.3)
Specialized Physicians	12(20.0)	36(60.0)	8(13.3)	0(0.0)	4(6.7)
Therapy Providers	13(21.7)	16(26.7)	0(0.0)	26(43.3)	5(8.3)

4.7 Table 4.6: The psychological consequences among amputees in Mulago specialized national hospital

Source: Primary 2019

The study results are presented in the table above shows that most of the respondents amputees were abnormally depressed 28(46.7%) followed by a significant proportion of them that were at the borderline of suffering depression 21(35.0%). From the table only 11 (18.3%) of the respondent amputees who constitute the minority was found to be normal.

Other results as presented from the table above indicates that most of the amputees were suffering abnormally from anxiety 27 (45.0%) followed by a significant proportion of them that were at the borderline of suffering an anxiety disorder 20 (33.3%). As can be seen in the table, only 13(21.7%) of them were free of anxiety as a psychological consequences.

The study results lastly show that only 21(35.0%) of the respondent amputees who constituted the minority had no symptoms of Post-Traumatic Stress Disorder. Table 4.2 however indicates that the majority of the respondent amputees that were attending Mulago specialized national hospital had symptoms of at least 2 Post-Traumatic Stress Disorders 28(46.7%). Results additionally show that up to 11(18.3%) of the amputees that were attending Mulago specialized national hospital had symptoms of at least 1 Post-Traumatic Stress Disorder. The forgoing results illustrate how unaware the amputees are in as far as controlling feeling which could worsen their quality of life and demonstrates the need for programs that minimize such psychological consequences.

4.8 The psychological interventions among amputees in Mulago specialized national hospital, Kampala-Uganda

This study as its third objective was set to examine the psychological interventions among amputees in Mulago specialized national hospital, Kampala-Uganda. To address this objective, descriptive results were processed and presented as illustrated in Table 4.5 below.

4.9 Table 4.7: The psychological interventions among amputees in Mulago specialized national hospital, Kampala-Uganda

Source: Primary 2019

Findings in table 4.5 above shows specialized physicians as the most satisfactorily provided psychological interventions among amputees in Mulago specialized national hospital 36(60.0%). This was closely followed by the other psychological intervention provided specifically primary care provision which was indicated by the majority of the amputees as satisfactory 27(45.0%)

The results in table 4.5 above indicate financial assistance 28(46.7%) and also therapy providers 16(26.7%) as the satisfactorily provided psychological interventions among amputees in Mulago specialized national hospital. The study findings as per table 4.5 above shows support groups as the other psychologi-

cal intervention provided to the amputees in Mulago specialized national hospital rated as poor by the majority 18(30.0%) but with a significant proportion of them indicating it as satisfactory 16(26.7%).

The study findings also show counseling services as the other psychological interventions provided among amputees in Mulago specialized national hospital but reported as poor by the majority 28(46.7%). This result show how much gap exists in as far as improving the counseling services are concerned and is suggestive of the need for improvement programmes in this regard.

5 DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

6 Discussion of the findings

The personality styles that enhance coping among amputees in Mulago specialized national hospital, Kampala-Uganda

The current study established openness and neuroticism as not being statistically significant correlates that enhance coping styles amputees in Mulago specialized national hospital ($p > 0.05$). This study however found extraversion as a personality style has got a statistically positive correlate with the confrontational form of coping style demonstrated among the respondent amputees ($r = 0.279$, $p = 0.031 < 0.05$). The latter results are similar to one earlier established by (Lazarus *et al.*, 1980) that emotion-focused coping within a person-environment relationship was altered by instrumental actions.

The results in this study also showed that agreeableness as a personality style had a significantly positive correlate that enhanced planful problem solving ($r = 0.278$, $p = 0.032 < 0.05$) and positive reappraisal ($r = 0.301$, $p = 0.019 < 0.05$) as a coping strategy. These results are much comparable to those established by (Rianne *et al.*, 2014) just like Lakkin and Knowlton (2015) who found a significant role that social networks played in facilitating coping.

This study in addition found conscientiousness as a negative correlate of coping styles particularly self-control ($r = -0.326$, $p = 0.011 < 0.05$) and escape avoidance (Lazarus *et al.*, 1980) that the relationship between the person and environment evolves as a result of a dynamic interplay between coping strategies, changes in the environment, and changes in the individual.

The psychological consequences among amputees in Mulago specialized national hospital, Kampala-Uganda

This study established the psychological consequences among amputees as abnormal depression (46.7%) and suffering abnormal anxiety (45.0%). These results are much similar to those earlier established by (Ziad *et al.*, 2008) just as Srahbzu *et al.*, (2017) that after an amputation the prevalence of depression and anxiety is as high as 41 percent. The results equally compare well with those earlier established by Sahu *et al.*, (2016) that amputations are associated with a significantly decreased quality of life compared to lower extremity amputations because of substantial functional defects. These results are similarly comparable to those by Rybarczyk *et al.* (1992) that amputation is associated with depression, anxiety, and disturbed body image.

The current study also found the psychological consequences among amputees as demonstrating symptoms of at least 2 Post-Traumatic Stress Disorders (46.7%) and symptoms of at least 1 Post-Traumatic Stress Disorder (18.3%). These findings are much similar to those established by (Mountany *et al.*, 2009) that the use of prostheses and orthosises in both lower and upper limb amputees can lead to restlessness and also post-traumatic stress disorder among others. These are similarly comparable to those earlier established by Atherton and Robertson (2006) that amputation can trigger psychological distress in an individual. They are also similar to those by Mischel *et al.*, (2014) who found experiencing trauma as resulting in the development of PTSD.

The psychological interventions among amputees in Mulago specialized national hospital, Kampala-Uganda

The current study found psychological interventions towards the amputees in Mulago Specialized hospital as specialized physician services (60.0%), primary care provision (45.0%), and financial assistance (46.7%). This study established the other psychological interventions as therapy provision (26.7%), support groups (26.7%) alongside counseling services but reported as poor by the majority 28(46.7%). These

results are quite comparable to those earlier established by Srivastava (2010) that family therapy may be indicated to assist in reaching the proper balance between the legitimate support amputees need and the independence that they must regain. The current findings are as well similar to those earlier established by (Rianne *et al.*,2014) who found a significant role that social networks play in facilitating coping.

7 Conclusions

The personality styles of extraversion, agreeableness, and conscientiousness are crucial in the coping styles demonstrated amongst individuals who have had traumatic experiences and therefore need to be well established and aligned supporting amputees.

The amputees who have had traumatic experiences are bound to suffer abnormal depression, anxiety with at least 1 or 2 Post-Traumatic Stress Disorders that need to be controlled in supporting the patients' wellbeing.

The psychological interventions particularly specialized physician services, primary care provision, financial assistance, therapy provision, and support groups are crucial in enhancing the wellbeing of the amputees that need to be supplemented with satisfactory counseling services.

Recommendations

Basing on the study objective, the study recommends health care providers in collaboration with the caregivers to institute mechanisms which help the amputees learn the approaches to embracing positive thinking about their present situations as minimizing the negative psychological consequences.

The administrative staff of specialized units needs to put in place workable measures like avoiding unfair self-blame and inculcating a belief that they are still worth as to help amputees to improve their self-esteem thereby minimizing adverse psychological consequences

The management of psychological consequences such as depression, anxiety, and PTSD after amputation needs to be incorporated in the services provided to patients so as to enable them to cope comprehensively despite the challenges they go through.

The clinicians extending care to amputees need to seek training programs that improve their counseling support skills if they are to contribute significantly to improving patients' wellbeing at satisfactory levels.

8 Suggestions for Further Research

The current study was carried out in only Mulago Specialized national hospital, Kampala-Uganda. The results would vary if other hospitals were to be involved. In addition, a bigger sample would be attained resulting in more generalizable findings. It is therefore recommended that future studies consider a census if not more health units and individuals that have had traumatic experiences.

The current study made use of quantitative research approaches only which does not bring out why some results are the way they are. It is thus recommended that future studies consider triangulating quantitative with qualitative research approaches like focus group discussion or interviews for clearer views based on in-depth opinions.

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