

The Application of Structural Equation Modelling Approach to Assess the Relationships between Psychosocial Elements and Intention to seek Therapy among Obstetric Fistula Women in North-west Nigeria

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Abstract—This study applied the structural equation modeling (SEM) approach to the study of obstetric fistula disease. The main objective of this study is to carry out a feasibility study of 321 OF patients to assess if there would be significant relationships between psychosocial variables and intention to seek therapy among the victims of fistula disease. A total of 321 questionnaires was administered, 302 were valid for further analysis. The result of the study indicated significant relationships between psychosocial elements and intention to seek therapy. Specifically, there was a meaningful positive relationship between decision-making and the plan to seek therapy ($\beta=0.18$, $t=4.33$, $p<0.01$). Conversely, the result indicated no significant relationship between the attitude of health personnel and the intention to seek therapy ($\beta=0.06$, $t=1.29$, $p<0.10$). Furthermore, the result of the study established a significant positive relationship between low-stigma and intention to seek therapy ($\beta=0.11$, $t=3.15$, $p<0.01$). Also, this study showed a significant positive relationship between social support and intention to seek therapy ($\beta=0.11$, $t=2.00$, $p<0.02$). Moreover, the finding of the study established that transportation is positively related to the intention to seek therapy ($\beta=0.29$, $t=3.91$, $p<0.01$). Furthermore, the study confirmed that there is a significant positive relationship between the quality of health and intention to seek therapy among obstetric fistula women ($\beta=0.35$, $t=4.31$, $p<0.01$). Thus, this study concludes that SEM is a more significant model, which performs estimations superior to first-generation and some other covariance based regression models for examining variables, and that the assessment based on the SEM approach did examine the latent variables and their relationship as well as tested the relationship between the latent variables. Consequently, this study recommends that for accurate predictions, attention should be focused on thorough data screening and preliminary data analysis of all the latent constructs that would be employed in future researches.

Keywords: Structural equation modeling; psychosocial elements; intention, therapy, obstetric fistula

I. INTRODUCTION

Nigeria is described to be one of the republics with the highest number of women living with Obstetric fistula

(OF) in the globe [14], [44]. The reference [14] and [44] global reports, which ranked Nigeria as having the highest prevalence of the OF worldwide, estimated that about 0.5-2% of the population of women of reproductive age in the country is afflicted with the disease. What perhaps made the disease incidence worse is that not many victims are ready to reveal their status in society so that they could receive medical attention [44]. Despite the enormous number of afflicted individuals with OF in Nigeria, only a few victims visit designated healthcare centers for therapy; this was compounded by the low rate of surgical therapy performed by health officials, in which only about 4000-5000 victims were treated every year [14].

Recently, a report from the National Strategic Framework for the elimination of fistula 2011-2012, country profile, Nigeria, indicated that the programs aimed at eradication of the OF in Nigeria have recorded failure perhaps because those providing the services are either unqualified or that those afflicted with the disease were reluctant to present themselves for at the designated hospitals for treatment, due to beliefs they held that the condition is not treatable [43], [14]. More significantly, OF perhaps have persisted because the victims of the disease were not Planning to participate in therapy at the designated healthcare facilities, possibly due sparse road networks, stigmatization, and poor quality of health among others [34], [25]. [22], [28].

Several studies [18], [34], [22], [28] have examined the reasons why sick individuals refused to make plans to participate in therapy. Concerning decision-making autonomy, reference [33] observed that due to decision-making independence among Bangladesh women, they were able. In contrast, reference [44] suggested that due to delay that women experienced at home before planning to seek for health care facilities, it constitutes a significant challenge affecting pregnant women and those with pregnancy-related diseases in emergent societies. This challenge restricts efforts to provide emergency medical intervention to the victims

when required [44]. Consequently, the next decision is essential to protect the lives of various patients by carrying them to the appropriate healthcare centers. Furthermore, concerning the attitude of health personnel, reference [16] reported that negative staff attitude dampens the plans of most pregnant women to participate in therapy in rural Pakistan. However, a study in Bangladesh suggests that because the perspective of health personnel is positive, in that, the staffs continuously monitor health conditions of their patients in the hospital; they administer prescription at the right time, and offer financial help occasionally to the sick; this explains why patients prefer to visit the health center for therapy [1]. Additionally, concerning stigma, references [18] and [28] reported that individuals with chronic diseases such as mental illnesses who were exposed to stigma from their friends and society at large refused to seek therapy. However, reference [36] argues that where people with challenges of sickness are treated with dignity, such individuals are more likely to be motivated to plan to seek therapy adequately. Moreover, about social support, reference [10] stated that people with poor social support tend to have worse physical and psychological disorders. In contrast, moral support from significant others encourages people to plan to seek therapy, as well as provide physical and psychosocial support to sick individuals [10]. Besides, with regards to transportation, references [34] and [22] observed that the weak public transportation system adversely affects the utilization of healthcare facilities. Additionally, a cross-sectional survey by reference [35] in the United States of America regarding access to healthcare facilities among adults showed that distance to treatment centers affects therapy. However, decent transportation fulfills the desire for mobility because it ensures that people, products, and information move from a place to another [35]. Furthermore, concerning the quality of health, reference [42] argued that among patients with mild glaucoma that did not cause severe physical, physiological, or psychological difficulties, the patients are more likely to plan to come back for follow-up care. In essence, moderately stable condition of health among patients inspires therapy seeking. Conversely, reference [14], [23] argued that low quality of health is detrimental to the health-seeking intention among patients, particularly those ravaged by Cancer, Tuberculosis and HIV/AIDS among others.

Based on the preceding discussion, the efforts of eradicating the OF by the National Strategic Framework for the elimination of fistula through encouraging the victims to participate in therapy has been intensified in Nigeria, in reaction to the imminent risks posed by the disease to the affected women [14], [39]. Nevertheless, as references [14], [39] observed, it is apparent that the programs embarked on to eradicate OF have not been effective owing to the high rate of the disease and coupled with the low repair rates in Nigeria.

Given the preceding observations above, there are few studies on the relationships between psychosocial elements and intention to seek therapy among OF patients utilizing a

structural equation modeling approach. Few studies emphasize testing the social and psychological variables in a single study. In short, most previous studies that examine the relationships between psychosocial variables and intention to seek therapy using path modeling technique focused on South-East Asia and other African countries. In the case of Nigeria, there is not a single study to the knowledge of these scholars that applied structural equation modeling (SEM) approach to assess the relationships between the independent variables and the dependent variable of interest to this research among OF patients in north-west Nigeria. Based on the preceding, these scenarios created gaps for this study to fill by conducting further investigation.

Therefore, this study consists of six (6) main sections. The first section introduced the study, followed by the literature review in the second section. Additionally, the third section focused on the research methodology, while part four focuses on the research findings. Also, the fifth section comprised of Discussion, which was followed by the conclusion and recommendation in the sixth section.

II. LITERATURE REVIEW

Behavioural intention to seek therapy

The behavioral therapy intention refers to the plans and actions executed by the individual or group with health challenges intended to promote health, prevent illness, or treat diseases [2]. Moreover, behavioral intention involves commitments from the personalities who are facing distinct challenges, in that, the individuals must be ready to accept the fact that they want to make progress or to accept cure for the ailment affecting them, by accepting recommendations from health professionals, to improve their health status [6]. In the main, the concept signifies sick individuals planning and in work together with other individuals to acquire support, which could be in the form of information, therapy, and general support grounded on a particular problem the sick person complaint about [2]. This meaning of intention by reference [2] shows that health professionals, mainly those responsible for the care of obstetric fistula patients, are beginning to appreciate the construct as an essential part of their medical culture. Furthermore, reference [6] highlighted that apart from analyzing behavioral intention, it is also imperative for the health personnel to understand various psychosocial elements that influence an individual's judgment to seek therapy.

Psychosocial Elements

The psychosocial elements or factors are the social and psychological components in the society and within the individuals that could have a direct or indirect influence on the behavior of the individuals, particularly the sick [14], [16]. Additionally, the concept of psychosocial elements is essential because it can positively motivate people with specific challenges to plan and subsequently participate in therapy. According to reference [36], the most noticeable perceived psychosocial elements that influence therapeutic behavioral

intention consist of but are not limited to decision-making (DM), attitude of health professionals (AHP), low-stigma (LSTM), social support (SSU), transportation (TRP), and quality of health (QOH). Accordingly, based on the many definitions of the concept of psychosocial elements in the preceding discussion, this study defined the psychosocial elements as those social and psychological factors that stimulate the intention and participation of the OF women to seek therapy. Thus, this study utilized the SEM approach to assess the relationship between psychosocial elements and therapeutic behavioral intention among OF women in north-west Nigeria,

Decision-making Autonomy

Decision-making refers to a state of affairs where women and men have relatively equal chances to engage in discussions about matters that affect them and the family [9], [31]. According to references [9], [31] the participation of women in decision-making has an advantage, in that, in a society where women participate in important decisions affecting their lives and families; there are likelihoods of improving the health and economy of that society. Conversely, lack of decision-making power available to women may result in the violation of their rights to health and other fundamental human rights [4]. Studies by references [4] and [31] have examined the influence of decision-making on the therapeutic behavioral intention of the sick individuals and have established some weaknesses in the works. So, for example, reference [4] reported that in Nigeria, only 10-12 percent of women in northern Nigeria participate in decision-making affecting their health, compared to 50 percent in southern Nigeria. Also, reference [31] reported conflicting findings in studies of decision-making in four countries, which indicated that women in India and Nepal possessed decision-making power to seek treatment. On the contrary, in Kenya and Namibia, the study shows that a majority of women in rural communities do not have decision-making power, which affects their participation in seeking health care services.

In line with the preceding studies, reference [9] in his examination of decision-making as a factor inhibiting health-seeking suggested that future studies should focus on how the problem of decision-making affects participation in health programs in another social context, as well as to assess the development in health inequalities in the new environments. Consequently, this study employed decision-making autonomy as one of its constructs, to assess its relationship with therapeutic behavioral intention among OF women within the context of some selected states in the north-west, Nigeria, because it is the conviction of these scholars that there is the scarcity of empirical evidence in previous studies regarding this area. Therefore, this study hypothesizes the following:

H1: Decision-making is positively associated with therapeutic behavior among obstetric fistula patients in north-west

Nigeria.

Attitude of Health Personnel

The attitude of health personnel is defined as the behavior of the medical professionals exhibited towards the patients; the behavior could be positive or negative [21]. The positive behavior of the health care personnel includes showing towards the patient kindness, respect, and politeness, among others, in the course of discharging their therapeutic responsibilities [21]. Conversely, the negative attitude of health personnel is shown to the patient by way of verbal abuse, disrespect, showing lack of empathy and sympathy, physical assault, and inadequate attention to confidentiality, among others [16]. Also, the concept of the attitude of health personnel is important because a positive attitude helps to promote interpersonal communication between the patient and the healthcare providers; this ultimately helps to offer quality health care services to the patients [21]. On the other hand, negative attitudes of health personnel create unhealthy gaps and barriers to health-seeking intention [21].

Numerous studies on the attitude of health personnel indicated some conflicting findings in their results. So, for example, the work of reference [16] indicated that the staff's negative attitude lowered the participation of pregnant women in therapy in rural Pakistan. Conversely, a study in some selected Zambian hospitals utilizing 86 sampled women for antenatal care, labor, and those undergoing abortion indicated that the attitude of most of the healthcare providers in the area is positive [26].

Based on the preceding discussion, the reviewed literature offered some gaps for further study. First, the analysis of the concept of the attitude of health personnel by the previous studies was mostly qualitative driven, which emphasizes on understanding the lived experiences of the participants; as such, the studies cannot be generalized to the universe, this assumption is in line with the views of reference [20]. Concerning the preceding discussion, reference [16] suggested further studies to focus on examining the attitudes of health personnel through the use of surveys. Also, most of the studies on the attitude of health professionals, for example, were conducted focused on diseases and problems such as antenatal and postnatal care, abortions, and HIV/AIDS among others, and were conducted in Bangladesh, Zambia, Ghana, South Africa, Pakistan and some European countries that are different from Nigeria in terms of culture and environment. For the reasons above, this study will employ the SEM approach to assess the construct in a new social context among obstetric fistula patients in north-west Nigeria. Then, this study examined the concept concerning OF using the path modeling method. Therefore, this study hypothesizes the following:

H2: Attitude of health personnel is positively associated with therapeutic behavior among obstetric fistula patients in north-west Nigeria.

Low-Stigma

Stigma is defined as the feeling of indignity or dishonor by a person facing certain challenging situations [38]. Stigma results in prejudgment and discernment [28]. In general, the term refers to showing lousy behavior to people arising from the difference in gender, race, socio-economic status, and health, among others. Though, because the construct signifies disapproval, this study uses the term to signify low-stigma. Therefore, this study operationally defined the concept as the profound feelings of dishonor and or humiliation displayed by OF patients that could raise their spirits to take part in healthcare-related programs to remedy disease conditions affecting them.

Several studies have investigated the role of stigma on health-seeking behavioral intention among individuals with acute and chronic diseases [28], [38], [36] and have found some conflicting results. So, for example, reference [28] in their work reported that clients with chronic diseases such as mental illnesses experienced stigmatization from the family, friends, and society, which affect treatment-seeking behavior due to seclusion. Conversely, studies by reference [38] indicated that most families and friends of patients do not stigmatize them. Similarly, a study by reference [36] indicates that the family and friends of fistula victims treat them nicely and that the significant others support the victims to seek competent healthcare services. Similarly, reference [32] in their study of stigma among Singaporeans, indicated that stigma does not impede treatment-seeking behavior. In essence, there is a positive relationship between low-stigma and treatment-seeking. Conversely, reference [3] in their study among urban Singaporeans, found that stigma impede health-seeking.

The reviewed literature on stigma provides some gaps for further study. In line with the [7] suggested that future studies on stigma should focus on ways community can provide support to stigmatized people through assessing the interpersonal relationships between the victims and the larger society. Additionally, the reviewed literature has methodological flaws because it relies heavily on qualitative methods. Thus, this researcher will assess the construct using a quantitative method, as well as an SEM approach, which is in line with the views of reference [19]. Consequently, this study hypothesizes the following:

H3: Low-stigma is positively associated with therapeutic behavior among obstetric fistula patients in northern Nigeria.

Social support:

The term social support is defined as the concrete and emotional support offered to an individual by the members of one's family, friends, and community among others [10]. Reference [13] stated that social support is significant in that support from family, relatives, friends among others, enhance satisfaction and psychosocial wellbeing. The same scholar maintained that support from the loved ones is even more

significant among women who are about to deliver in the health centers, in which the presence of their loved ones could boost the confidence and comfort of a woman, leading to reduce patient's anxiety. Conversely, lack of social support from friends, family, and community may lower an individual's level of confidence as well as cause damage to further damage to the physical and psychological well-being of the patient [13].

Several studies have examined social support about therapeutic behavioral intention among patients receiving treatment, and the results showed some inconsistencies. So, for example, a study by reference [10] on social support, gender, and treatment-seeking behavior for substance abuse found a significant positive relationship between social support through the company of significant others and seeking treatment. Conversely, reference [13] found a negative relationship between social support through multiple companies of significant others and treatment-seeking intention. In line with the preceding discussion, reference [10] suggested further studies that could add new sources of social support to the existing old ones, including examining support from religious organizations, employers, club support groups, religious organizations and philanthropist among others. Therefore, this study hypothesizes the following:

H4: Social support is positively associated with therapeutic behavior among obstetric fistula patients in north-west Nigeria.

Transportation

The concept of transportation is defined as the easiness with which information, properties, and individuals move from one place to another [35]. In this study, transportation refers to access to decent transportation services, including cars, buses, and other vehicles and facilities that could carry obstetric fistula patients from their place of residences to health care facilities for medical assistance. The primary purpose of transportation includes the satisfaction of mobility need because transportation happens only if people, product, and info can move from one place to different place; where this is not the situation, the concept is not significant [22], [35]. On the contrary, the absence of transportation weakens the capability of the individuals in a social setting to receive information, goods, and services as well as ensure movement from one place to another [24].

Several studies have examined the concept of transportation access to health-seeking behavioral intention [41], [22], and have found some conflicting results. So, for example, reference [22] observed that a shortage of public transportation adversely affects the utilization of healthcare facilities. On the other hand, reference [37] contends that transport only affects individuals under certain conditions. On the contrary, a descriptive study of driving distance and diabetes treatment by reference [35] utilizing cross-sectional design reported that distance from the homes of the sick individuals to health centers does not affect the consequent

utilization of healthcare facilities.

Studies on transportation and access to health care indicated some gaps. So, for example, reference [22] recommends future studies to focus on extensive sample data on people who use transport to health centers because the 60-dataset sample used in the previous study does not permit generalization of the findings to the universe. Additionally, future studies should identify other sources of transportation in the new social context [22]. Therefore, this study hypothesizes the following:

H5: Transportation is positively associated with therapeutic behavior among obstetric fistula patients in north-west Nigeria.

Quality of Health

The term Quality of health (QOH) is defined as the individual events that include freedom to express self, decent transportation, freedom of movement, happiness within one's immediate environment, upright health condition, life fulfillment, a living standard that is above average, decent housing condition, and educational attainment among others [23]. The concept also involves assessing clients to understand their past and present status of health [45]. On the contrary, reference [23] point out that poor quality of health represents the absence of complete physical, social, and psychological well-being of an individual. In this study, QOH refers to moderately sound physical, physiological and psychological health achieved by OF patients that enable them to plan and look out for healthcare facilities. Furthermore, it is pertinent to realize that low quality of health is a common characteristic among individuals living with chronic diseases such as Cancers, Tuberculosis, musculoskeletal pains (pains in the muscles and bones), HIV/AIDS, and other reproductive diseases [8]. On the contrary, reference [8] stated that decent QOH means when individuals in a given society live reasonably good socially, physically and psychologically.

Several studies on QOH by references [29], [25] and [30] have found some conflicting results in their findings. So, for example, reference [25] has established negative associations between sleep deprivation and quality of health. On the contrary, reference [29] found a positive association between inadequate sleep and quality of health as well as improvement in subsequent health-seeking behavior. On the contrary, reference [30] contends that among the County hospital population, most of the clients that reported for follow-up care are individuals with chronic illnesses. In essence, clients with less severe diseases did have lower health-seeking behavior, according to preceding scholars.

The studies on the quality of health and health care access show some gaps. For example, most previous literature focused more on the quality of health among individuals with chronic and communicable diseases such as liver diseases, HIV/AIDS, Tuberculosis, among others [8]. The construct was assessed only for related diseases, but not on OF disease.

Therefore, this justifies assessing the construct in different disease situations such as OF disease. Therefore, this study hypothesizes the following:

H6: Quality of health is positively associated with health-seeking behavior among obstetric fistula patients in Nigeria.

III. METHODOLOGY

This study employed a structured questionnaire using a 5-point Likert scale to gather data for the construct utilized in the research. The study targeted mainly the obstetric fistula patients (both Vesicovaginal and rectovaginal fistulae) in Sokoto, Kebbi, Zamfara, and Katsina states. The study is a cross-sectional one that gathered data once 4weeks from the end of 2017 to the beginning of 2018. A total of 313 responses were obtained from 321 questionnaires, and eight were discarded because they were not adequately filled, making the final response rate to be 97.5%. However, only 302 questionnaires were used for the final analysis following data screening and preliminary analysis, which led to the removal of outliers, in line with the views of reference [19]. Furthermore, the study employed SEM for the final data analysis.

IV. RESEARCH FINDINGS

This study analyzed the data through the use of a structural equation modeling approach to establish the relationships that the researchers hypothesized, in line with the suggestion of reference [19]. Precisely, in the data analysis, the study focused on a reflective measurement model and structural models.

Assessment of Measurement Model

The measurement model was assessed by focusing on establishing individual item reliability, internal consistency reliability, convergent validity, and discriminant validity of each reflective construct.

Individual Item Reliability

The individual item reliability was examined through assessing outer loadings of every construct's measure, which is in line with the recommendations of reference [19]. Adhering to the rule of thumb for items retention with loadings between 0.40 and 0.70 [19], it occurred that out of 72 items, 14 items were deleted due to loading problems. Therefore, in the current model, 43 items were retained because they had loadings between 0.42 and 0.97, as indicated in Table 1.

Table no.1: Measurement Model: Reliability and Convergent Validity

Constructs	Items	Loadings	CA	CR	AVE
Attitude of Health Personnel	AHP2	0.86	.93	.94	0.75
	AHP3	0.91			
	AHP4	0.92			
	AHP6	0.75			

	AHP7	0.86			
	AHP8	0.89			
Decision-making	DM1	0.96	.96	.97	.91
	DM2	0.95			
	DM3	0.95			
	DM4	0.96			
intention to seek therapy	INT10	0.86	.95	.96	.74
	INT11	0.95			
	INT2	0.77			
	INT3	0.95			
	INT4	0.95			
	INT5	0.75			
	INT6	0.95			
	INT7	0.95			
	INT8	0.86			
	INT9	0.54			
Low Stigma	LSTM1	0.93	.86	.90	.59
	LSTM2	0.96			
	LSTM3	0.95			
	LSTM4	0.93			
	LSTM5	0.52			
	LSTM6	0.43			
	LSTM8	0.42			
Quality of Health	QOH1	0.97	.96	.97	.91
	QOH2	0.95			
	QOH3	0.95			
	QOH4	0.95			
Social Support	SSU2	0.89	.90	.93	.73
	SSU3	0.89			
	SSU4	0.88			
	SSU5	0.90			
	SSU6	0.71			
Transportation	TRP2	0.70	.92	.93	.68
	TRP3	0.90			
	TRP4	0.88			
	TRP6	0.83			
	TRP7	0.85			
	TRP8	0.73			
	TRP9	0.89			

Note: CA= Cronbach’s Alpha; CR=Composite Reliability; AVE=Average Variance Extracted

Internal Consistency Reliability

The internal consistency reliability is the extent to which the entire items on a particular scale measure the same concept [19]. Cronbach’s alpha coefficient and composite reliability coefficient constitute the most commonly employed estimators of the internal consistency reliability of an instrument. In the present study, the composite reliability coefficient was selected to determine the internal consistency reliability of instruments adapted because it offers much fewer biased estimates of reliability than Cronbach’s alpha

coefficient. Thus, Table 1 indicates the composite reliability coefficients of the latent constructs of the current study ranged from 0.90 to 0.97, with each value above the minimum standard of 0.70. The other values recorded indicated that the measures used in this study have adequate internal consistency reliability, which is in line with the opinions of reference [5] and [19].

Convergent Validity

Convergent validity refers to the extent to which items accurately represent intended latent constructs and how they correlate with other measures of the same latent constructs [19]. In the current study, convergent validity was examined by assessing the average variance extracted (AVE) of each latent construct, as recommended by reference [15]. In order to attain satisfactory convergent validity, reference [11] suggested that AVE of every latent construct should reach 0.50 or above. Adhering to the values indicated by reference [11], the AVE values obtained in the present study (see Table 1) showed loading higher than 0.50 on each construct, signifying adequate convergent validity. Specifically, the least value of AVE in the current study is 0.59, while the highest value is 0.91.

Discriminant Validity

Discriminant validity refers to the degree to which a given latent construct varied from other latent constructs. In the current study, discriminant validity was established through using AVE, by comparing correlations amongst latent constructs with the square roots of the average variance extracted [15]. Table 2 shows correlations among latent constructs, which were compared with the square root of AVE (see the bold values in Table 2). Furthermore, Table 2 shows that the square roots of AVE are higher than correlations among the latent constructs, which implies the presence of sufficient discriminant validity.

Table no. 2: Measurement Model: Discriminant Validity

Constructs	1	2	3	4	5	6	7
AHP	0.87						
DM	-0.38	0.96					
INT	-0.58	0.57	0.86				
LSTM	-0.45	0.26	0.55	0.77			
QOH	-0.71	0.54	0.80	0.56	0.96		
SSU	-0.65	0.45	0.74	0.50	0.78	0.89	
TRP	-0.68	0.47	0.78	0.56	0.79	0.77	0.87

Note: The bolded diagonal values correspond to the square root of the AVE of the constructs

Assessment of Significance of the Structural Model

The assessment of the structural model focused on examining path coefficient significance, R-squared values, effect size (f²), and predictive relevance of the model utilized in this study. Specifically, the model focused on examining the

hypothesized relationships among variables, which was achieved through a standard bootstrapping procedure with 5000 bootstrap samples and 302 study cases. The preceding analysis helps to examine the significance of path coefficients of the direct relationships between the independent variables and the dependent variable of the study, which is in line with the recommendation of reference [19]. This researcher analyses the two distinct structural models.

Hypotheses Testing for Direct Relationships

Figure 1 and 2, showed the models that examined the direct relationships, which was based on the hypotheses developed from the literature. Specifically, H1: Decision-making is positively related to the intention to seek therapy among women in north-west Nigeria. H2: Attitude of health personnel is positively related to the intention to seek therapy. H3: Low stigma is positively related to the intention to seek therapy. H4: Social support is positively related to the intention to seek therapy. H5: Transportation is positively related to the intention to seek therapy, and H6: Quality of health is positively related to the intention to seek therapy.

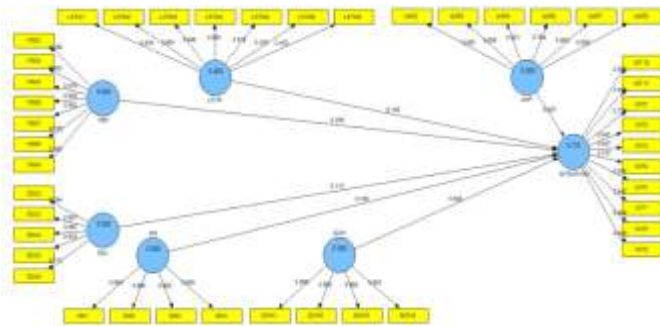


Figure no.1: Direct Relationships Algorithm

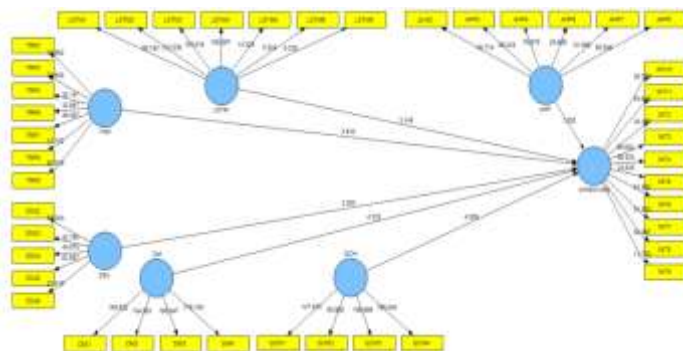


Figure no. 2: Direct Relationships Bootstrapping

Table 3 shows the result of the direct relationships between the independent and dependent variables of the current research. The findings are interpreted by using the coefficient (Beta) of path relationship, standard error (SE), and t-Value (T-Statistics). The asterisk sign (*) denotes the level of significance based on the value of alpha. Precisely the three asterisks show the level of significance at 0.01, while two asterisks denote significance at 0.05.

Table no. 3: Structural Model: Test of Significance for Direct Relationships

Hypothesis	Relationships	Beta	Std. Error	T-stat	P-value	Decision
H1	DM -> Intention	0.18	0.04	4.33** *	0.00	Supported
H2	AHP -> Intention	0.06	0.04	1.29	0.10	Not Supported
H3	LSTM -> Intention	0.11	0.03	3.15** *	0.00	Supported
H4	SSU -> Intention	0.11	0.06	2.00** *	0.02	Supported
H5	TRP -> Intention	0.29	0.08	3.91** *	0.00	Supported
H6	QOH -> Intention	0.35	0.08	4.31** *	0.00	Supported

***p < 0.01 (1 tail); **p < 0.05 (1 tail) (N=302)

As indicated in Table 3, based on the assumption of the developed hypotheses H1, Decision-making is positively related to the intention to seek therapy. Therefore, the previous hypothesis was supported ($\beta=0.18$, $t=4.33$, $p<0.01$). However, the result of H2 is inconsistent with the prediction, which stated that the attitude of health personnel is positively related to the intention to seek therapy. Therefore, this hypothesis was not supported ($\beta=0.06$, $t=1.29$, $p<0.10$). Additionally, H3 predicted the significant positive relationship between low-stigma and intention to seek therapy among OF women, which was supported ($\beta=0.11$, $t=3.15$, $p<0.01$). Similarly, consistent with the assumption of H4, which stated that social support is positively related to the intention to seek therapy, the hypothesis was supported ($\beta=0.11$, $t=2.00$, $p<0.02$). Moreover, H5 proposed that transportation is positively related to the intention to seek therapy, which was supported ($\beta=0.29$, $t=3.91$, $p<0.01$). Additionally, consistent with H6, which predicted that the quality of health is positively related to the intention to seek therapy, this hypothesis was supported ($\beta=0.35$, $t=4.31$, $p<0.01$).

In summary, 5 out of the six hypotheses developed for the direct relationships between the independent variables and the dependent variable were empirically supported. Explicitly, DM, QOH, TRP, STM, and SSU were supported, while AHP was not supported. Based on the result of the direct relationship, decision-making is the most crucial construct in increasing intention to seek therapy among OF women. The next in order of importance is the quality of health, transportation, low stigma, and social support. On the other hand, the attitude of health personnel does not positively influence the intention to seek therapy.

The testing of the hypotheses of direct relationship in this study is significant because the hypothesized direct relationships among the six individual psychosocial variables provided some gaps, as indicated in the concluding part of each of the variable that was reviewed through literature. This study filled these gaps. In line with the preceding, the testing of hypotheses for direct relationships in this study is significant because of the contributions the application of

SEM approach provided, which include prediction and superior power of estimations of the relationships between constructs and their related items as well as among constructs. The contribution of this method was not known among previous literature before this study.

Coefficient of Determination for Direct Relationships (R2)

The R-Squared measures the predictive accuracy of the model in research, determined as the squared correlations between the predicted and actual values of the endogenous construct [19]. R2, as a value, denotes a collective effect of the exogenous latent variables on the endogenous construct [19]. In this study, the R-squared value of the endogenous construct of the direct relation model is indicated in Table 4.

Several scholars have given specific values as a rule of thumb [19]. Precisely, reference [19] have recommended R2 values of 0.75 as substantial, 0.50 as moderate, and 0.25 as weak. However, reference [11] suggested R2 values of 0.67 as substantial, 0.33 as moderate, and 0.19 as weak in a model of PLS-SEM. Moreover, reference [19] stated that if a research model is to be used in making predictions for decision-making, a higher R2, which can explain the variance of up to 89.0%, is equally important.

Table no. 4: Coefficient of Determination for Direct Relationships: R-Squared

Construct	R-squared Value (R2)
Intention	.72

Table 4 indicated that the model of this study explains 72% of the total variance in intention to seek treatment. The value presupposes that the six exogenous latent constructs (decision-making, the attitude of health personnel, low stigma, social support, transportation, quality of health) have explained 72 percent of the variance in intention to seek treatment. Based on reference [11] suggestion, the R2 explained by the exogenous variables on an endogenous variable in a direct relationship is substantial.

Assessment of Effect Size (f2)

Apart from examining the combined contributions of exogenous variables upon endogenous latent construct, this study also considered the effect size. The effect size shows the relative influence of a specific exogenous latent variable on an endogenous latent construct by way of changes in the level of R-squared when a particular variable is excluded [11]. Effect size is calculated as an increase in the R-squared of the latent variable, to which the path has a connection with, relative to the proportion of latent variable’s unexplained variance [11]. Therefore, the effect size can be expressed using the following formula as suggested by reference [12].

$$\text{Effect size: } f2 = \frac{R2 \text{ included} - R2 \text{ excluded}}{1 - R2 \text{ included}}$$

According to reference [12], the f2 values of 0.02, 0.15, and 0.35 are considered as having effects that are weak, moderate,

and strong, respectively. The respective effect sizes of latent variables of the structural model in the present study are shown in Table 5.

Table 5: Assessment of the Effect Size for Direct Relationships: F-Square (f2)

R-squared	Included	Excluded	f-squared	Effect size
Decision-making	0.72	0.70	0.06	Small
Attitude of Health Personnel	0.72	0.72	0.00	None
Low Stigma	0.72	0.71	0.02	Small
Social Support	0.72	0.72	0.00	None
Quality of Health	0.72	0.69	0.09	Small
Transportation	0.72	0.71	0.05	Small

As shown in Table 5, the effect sizes of decision-making, the attitude of health personnel, low stigma, social support, quality of health, and transportation on the intention to seek treatment are 0.06, 0.00, 0.02, 0.00, 0.09, and 0.05 respectively. Therefore, adhering to the suggestion of reference [12], the effect sizes of the six exogenous latent variables on the intention to seek treatment are small, none, small, none, small, and small, respectively.

Predictive Relevance of the Research Model

The current study tested predictive relevance using the Stone-Geisser test of predictive relevance through the blindfolding process [17], [40]. Correctly, cross-validated redundancy measure (Q2) was used to examine the predictive relevance of the research model, which is in line with the suggestion made by Stone [40]; [17]; Q2 is a standard way to measure how adequate a model predicts data of omitted cases [19]. Reference [20] recommends that a research model that has a Q2 statistic greater than zero is regarded as having predictive relevance. Furthermore, the research model with more significant positive Q2 values indicates higher predictive relevance. The result of the cross-validated redundancy Q2 test was presented in Table 6

Table no. 6: Predictive Relevance for Direct Relationships: Q-Square

Total	SSO	SSE	1-SSE/SSO
Intention	3020	1502	0.50

As indicated in Table 6, cross-validation redundancy measure (Q2) for the endogenous latent variable is above zero, indicating that the model of this study has predictive relevance, based on the suggestion of references [11] and [20].

V. DISCUSSION

This study examined the relationships between psychosocial elements (DM, AHP, LSTM, SSU, TRP, & QOH) and intention to seek therapy among OF women in north-west Nigeria. Based on the preceding, this study developed six (6) hypotheses to assist the researchers in examining the influence of psychosocial elements on behavioral intention to seek

therapy.

Based on the previous studies on decision-making, this study hypothesized that decision-making is positively related to the intention to seek therapy among OF women in north-west Nigeria. Consistent with Hypothesis 1, the empirical result of the direct relationship shows there is a significant positive relationship between decision-making and intention to seek therapy ($\beta=0.18$, $t=4.33$, $p<0.01$). The result of the current study is consistent with previous studies, which shows that sick individuals, particularly women, plan to participate in treatment due to decision-making autonomy (Rahman et al. 2014). Also, the result signifies that OF women plan to seek therapy very early because of the autonomy that they have.

Furthermore, this study hypothesized that the attitude of health personnel is positively related to the intention to seek therapy among OF women. Conversely, inconsistent with the hypothesis developed, the study found no significant relationship between the independent and the dependent variables ($\beta=0.06$, $t=1.29$, $p<0.10$). The other result implies that the positive attitude of health personnel does not increase plans for women to seek therapy. Therefore, the finding of this study is at variance with our earlier predictions generated from the studies of references [26] and [1], who stated that positive attitude of health personnel motivates clients to strategize to seek therapy as well as visit the clinic for follow up care. Supporting the preceding argument, reference [21] suggest that the attitude of health personnel might be positive, but other factors associated with treatment-seeking, such as the inability of the victims to pay medical bills and the lack of confidence in the quality of healthcare services provided at the health center could dampen the idea of seeking for therapy on the part of the patients.

Also, as predicted earlier in our hypothesis, the result of this study shows a significant positive relationship between low-stigma and intention to seek therapy ($\beta=0.11$, $t=3.15$, $p<0.01$). The other result is consistent with the previous studies of references [32] and [36].

Moreover, based on the previous literature on social support, this study hypothesized that social support is positively related to the intention to seek therapy among OF women in north-west Nigeria. Consistent with hypothesis 4, the empirical result of the direct relationship shows there is a significant positive relationship between the constructs ($\beta=0.11$, $t=2.00$, $p<0.01$). Thus, the result of this study is consistent with several previous works, which suggested that clients plan to seek therapy as a result of physical and financial support from family, friends, and other community members [10].

Additionally, based on the previous studies on transportation, this study hypothesized that transportation is positively related to the intention to seek therapy among OF women in north-west Nigeria. Consistent with hypothesis 5, the empirical result of direct relationship shows there is a significant positive relationship between transportation and intention to

seek treatment ($\beta=0.29$, $t=3.91$, $p>0.01$). The result of this study is consistent with several previous studies that suggested most sick people participate in treatment due to the ease of access to transportation [41], [22], [35].

Moreover, in line with the previous studies on quality of health, this study hypothesized that the quality of health is positively related to the intention to seek therapy among OF women in north-west Nigeria. Consistent with hypothesis 6, the empirical result of the direct relationship shows there is a significant positive relationship between the quality of health and intention to seek treatment ($\beta=0.35$, $t=4.31$, $p>0.01$). The result of this study is consistent with several previous studies, which suggested that people participate in treatment, especially when their health has not severely deteriorated [23].

VI. CONCLUSION AND RECOMMENDATION

The main objective of this research was to apply the SEM approach to assess the relationships between psychosocial elements and intention to seek therapy among OF women in north-west Nigeria. In line with the other objective, the result of this study established that the majority of the psychosocial elements influence the intention to seek therapy among the victims of fistula disease. Expressly, the result indicated that DM, LSTM, SSU, TRP, and QOH have significantly, positively influenced the intention of the victims of the disease to seek therapy; however, AHP was insignificant. Therefore, the government of Nigeria should improve on the policies that promote quality of health, positive behavior among health personnel, good transportation, gender equality as well as enlightenment on the need for the community to support the women and not to humiliate them.

Consequently, there is a need for the government through the states and federal ministries of health and women's affairs to consider and improve upon these suggestions. Acting upon the above recommendations will have positive implications; by encouraging follow up visits to the hospital among those that were treated. Additionally, improving the programs based on the recommendations of this study could boost the morale of the OF women that earlier were unable to make plans to partake, now to be able to appreciate the importance of taking part in therapy at the designated healthcare centers.

Although this study had provided support for the numerous hypothesized relationships between the exogenous and endogenous variables, the results ought to be interpreted with attention given to the research's limitations. The current study provided a limited explanation of the process of data screening and preliminary analysis of psychosocial variables. Therefore, future studies should focus on a thorough screening of the data as well as an initial screening of the data, which should precede the assessment of measurement and structural models by utilizing OF samples or other health-related samples.

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