



Coping Mechanisms of Patients Suffering from Vesico-Vaginal Fistula (VVF) In South-East Nigeria

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Abstract

Background: Vesico-Vaginal Fistula (VVF) is an abnormal communication between the woman's urinary bladder and the vagina leading to continuous leakage of urine through the vagina. Adjustment difficulties have been reported frequently in association with highly stigmatized and discriminated illnesses; subjects afflicted with VVF may have difficulties in coping. Aim: Assess the Coping Mechanisms in women with Vesico-Vaginal Fistula (VVF) in South East, Nigeria; determine the socio-demographic profile of the participants with VVF and find out the relationship between their socio-economic profile and their coping mechanisms.

Method: Descriptive survey design was used in this study. A total of 100 women with Vesico-Vaginal Fistula (VVF) and another 100 Women of Childbearing Age (WCA) without VVF were selected through a non-probability sampling technique. Consecutive and consenting participants with VVF that met the inclusion criteria were recruited from the National Obstetric Fistula Centre, Abakaliki, South-East Nigeria. They were interviewed using the modified version of the Mental Adjustment to Cancer scales to measure coping, in five sub-scales: Fighting Spirit (FS), Hopelessness/Helplessness (HH), Anxious Preoccupation (AP), Fatalism (FA) and Avoidance (AV). A socio-demographic and clinical history questionnaire was also used to assess the socio-demographic and clinical characteristics of the participants. Data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 17.

Results: The study revealed that VVF subjects have a significantly higher fighting spirit and anxious pre-occupation compared with WCA subjects. They also have more emotional distress. In the socio-demographic variables, participants with VVF compared with controls were more likely to be in

polygamous marriages ($\chi^2=48.42$, $p=0.0001$) and to be separated or divorced after the onset of their illness ($\chi^2=26.67$, $p=0.0001$) while WCA were more likely to be educated ($\chi^2=83.02$, $p<0.0001$). WCA reported a statistically significant greater level of social support compared with VVF respondents ($\chi^2=93.54$, $p=0.001$).

Conclusion: Chronic ailments tend to break down innate coping mechanisms. A strong fighting spirit will enhance a positive coping mechanism. There is a need for good social support in cases of chronic ill-health. Mental health support should be extended to this category of patients as this will make the sufferers bear the problem with positive coping. Public enlightenment on the need for moral and psycho-social support for women with VVF is advised.

Keywords: Coping; Vesico-Vaginal Fistula (VVF); Women of childbearing age

Introduction

Adjustment difficulties have been reported frequently in association with highly stigmatized and discriminated illnesses; afflicted subjects may have difficulties in dealing with the problem. Vesico-Vaginal Fistula (VVF), one of these illnesses imposes enormous challenges on those affected. Because of the peculiar physical health consequences of their condition, they are isolated, avoided and probably ostracized. This is due to their malodorous nature emanating from their continuous leakage of urine. As a result, affected people may seek a way of coping with the problem.

Coping is a psychological process of dealing with the external or internal stress that is reflected as difficult or exceeding a person's resources. As a part of the personal equipment, human coping strategies represent the efforts made by an individual to deal with internal and external stress [1]. The way people cope with stress may affect short-term functioning and long-term adaptation to physical or mental disorders.

What constitutes negative or positive coping strategies may be difficult to state. It depends on the context of the situation. The authors of the stress coping style questionnaire (Stressverarbeitungsfragebogen SVF-78 questionnaires) divided coping strategies into positive and negative based on the maladaptive or adaptive potential in solving a stressful situation [2].

Depending on individuals, the strategies which are flexible and efficient for managing the stress situation are considered positive. Maladaptive and inflexible strategies are considered to be negative.

Coping mechanisms play a significant role in one's ability to adapt to stressful life conditions, such as VVF. Pregnancy-related stress plays an important role in the onset and course of vesicovaginal fistula illness. Individual dissimilarities in coping mechanisms and emotional traits, variables associated with the control and experience of stress, may play a significant role in symptom exacerbation [3]. Avoidance coping mechanisms are linked to psychological distress, and self-distancing among patients with stigmatizing ill-health has been positively related to social diversion [4]. People with VVF illness are confronted with stigma regularly. They have been discriminated against in several ways throughout the centuries and people still tend

to be very negative towards them [5]. They are also often seen as being deviants, and less competent than others [6]. The stigma associated with VVF is known to have a tremendous impact on the daily life and the life satisfaction of affected people; it also contributes to unemployment and low income among them [7]. Furthermore, people with VVF illness often experience a reduction in social contact and an increase in social rejection, which may lead to social isolation and diminished self-esteem [8].

These prejudicial societal attitudes and behaviors toward individuals affected by VVF can be internalized as self-stigma, with additional deleterious effects [9].

Self-stigma occurs when affected individuals endorse and apply the negative public stereotypes associated with their condition to themselves, leading to diminished self-esteem [10]. Even in the absence of direct discrimination, an individual's experiences, perceptions, or anticipation of negative social reactions to their stigmatized condition may give rise to a negative self-concept, maladaptive behavior, identity transformation, and/or stereotype endorsement [11]. Numerous outcomes can follow, including increased social anxiety, reduced social networks, lowered self-efficacy, psychological adversity, demoralization, feelings of hopelessness, and compromised quality of life [12]. Coping mechanisms for a stigmatized condition include secrecy through hiding the condition from others, withdrawal from social interactions and social support [13]. Secrecy and withdrawal appear to be the most common coping mechanism used by those with VVF problems [14].

This study assessed the coping mechanisms among participants and demographic factors in patients with VVF in a health facility in Abakaliki, South East, Nigeria.

The hypotheses were:

- Positive coping strategies are negatively related to the severity of the disorder.
- Negative coping strategies are positively related to the severity of the disorder.

Aim: The purpose of this study was to find out the coping mechanisms among participants with VVF; determine the socio-demographic profile of the participants with VVF and find out the relationship between their socio-economic profile and their coping mechanisms.

Method: A total of 100 women with Vesico Vaginal Fistula (VVF) and another 100 Women of Childbearing Age (WCA) without VVF were interviewed; Consecutive and consenting subjects with VVF that met the inclusion criteria were recruited from the National Obstetric

Fistula Centre (NOFC) (formerly south east fistula centre), Abakaliki. A socio-demographic and clinical history questionnaire was used to assess the socio-demographic characteristics of patients and control. The modified version of the Mental Adjustment to Cancer (MAC) scales measures coping in five sub-scales: Fighting spirit (FS), Hopelessness/Helplessness (HH), Anxious Preoccupation (AP), Fatalism (FA) and Avoidance (AV) was used to evaluate coping. Correlation analyses were performed to discover contributing factors to coping.

Statistical Analysis

The statistical Package for Social Sciences (SPSS) version 17 was used for statistical analysis. Data were summarized using measures of central tendency (mean). Patients' demographic and clinical characteristics were analyzed using column statistics. For analysis of categorical data, the χ^2 or Fisher's exact test was used. Interactions between variables with a normal distribution were calculated using Pearson's correlation analysis. The level of significance was set at 5%.

Result

Socio-demographic characteristics: The socio-demographic characteristics of the VVF and WCA groups are shown in the table below.

Age: Mean age of the participant was (36.36±10.95) 71% of VVF participants were still in marriage, the rest having been divorced or separated. Of those divorced 39% of VVF participants were in a monogamous marriage.

There were significant differences when the socio-demographic parameters of the two groups were compared in terms of age, family set-up, and marital status, and educational status, number of children and duration of illness. VVF subjects were however more likely to be in polygamous marriages ($\chi^2= 48.42, p=0.001$) and to remain unmarried after they became ill ($\chi^2=26.67, p=0.0001$) than WCA subjects. In the age group, the mean age for the subjects with VVF was 36.39 ± 11.0 years. This significantly differs from 29.78 ± 5.70 years for the subjects of WCA ($\chi^2=5.36, p=0.001$). Among the unmarried subjects, 5% of the VVF subjects were divorced compared with none of WCA subjects, while 9% of VVF subjects were separated compared with 5% of subjects without VVF. Fifteen (15) percent of VVF patients are widows compared to none of the WCA. The WCA subjects were, however, more likely to be gainfully employed compared with subjects with VVF ($\chi^2= 47.10, p=0.001$)[Table 1].

Variable	VVF N (%)	WCA N (%)	χ^2/t -test	p-value
Age				
Mean age	36.39	29.78	5.36	0.001
16-25	14 (14)	29 (29)	31.3	0.001
26-35	40 (40)	57 (57)		
36-45	27 (27)	14 (14)		
>45	19 (19)	0 (0)		

Marital status				
Married	86 (86)	89 (89)	0.411	0.521
Not married	14 (14)	11(11)		
Separated	9 (9)	5 (5)		
Divorced	5 (5)	0 (0)		
Widowed	15 (15)	0 (0)		
Family type				
Monogamous	37 (37)	85 (85)	48.42	0.0001
Polygamous	63 (63)	15 (15)		
Religion				
Christianity	98 (98)	98 (98)		
Islam	1 (1)	0 (0)	1.33	0.51
Traditional	1 (1)	2 (2)		
Educational status				
No formal education	54 (54)	9 (9)		
Formal education	46 (46)	91 (91)	46.92	0
Comparison of socio-demographic characteristics of VVF and WCA subjects continued				
Variable	VVF	WCA		
	N (%)	N (%)	χ^2/t -test	p-value
Occupational status				
Unemployed	93 (93)	49 (49)	47.01	0.001
Employed	7 (7)	51 (51)		

Table 1: Comparison of socio-demographic characteristics of VVF and WCA subjects.

Social support in women with VVF and WCA

significant level of perceived social support ($\chi^2= 63.29$, $p=0.000$) compared with those with VVF [Table 2].

The table below depicts the level of perceived social support of the subjects. Subjects of Childbearing age have a higher and more

	VVF	WCA		
Social support	N (%)	N (%)	χ^2	p-value
Yes	33 (33)	88 (88)	63.29	0
No	67 (67)	12(12)		
Total	100 (100)	100 (100)		

Table 2: Social support in women with VVF and WCA.

MAC scores of women with VVF and WCA

The table below shows the mean MAC sub-scale scores of the two groups. The mean value of Fighting Spirit (FS) is higher for VVF (106.37) compared with WCA (67.10). Also, Anxious Preoccupation

(AP) was higher for VVF subjects (25.28) compared with WCA subjects (15.47). The differences in the mean value of both FS and AP in VVF and WCA subjects were statistically significant ($\chi^2=18.73$; $p=0.000$) and ($\chi^2=31.82$; $p=0.001$) respectively. There were no statistically significant differences in the other coping parameters of MAC (Hopeless and Helpless (HH), Fatalism (FA) and Avoidance (AV) [Table 3].

Coping subscales	Group	N	Mean	SD	Df	t-test	p-value
Fighting spirit (FS)	VVF	100	106.37	5.831	198	18.73	0
	WCA	100	67.1	1.623			
Hopeless/Helpless (HH)	VVF	100	15.03	4.37	198	12.9	0
	WCA	100	9	1.67			
Anxious Preoccupation (AP)	VVF	100	25.58	2.9	198	31.82	0
	WCA	100	15.47	1.298			
Fatalism (FA)	VVF	100	21.25	2.634	198	34.67	0
	WCA	100	11.08	1.292			
Avoidance (AV)	VVF	100	2.62	0.546	198	29.65	0
	WCA	100	1	0			

Table 3: Mean MAC sub-scale scores of women with VVF and WCA.

The table below shows the correlation between coping sub-scales among the VVF and the normal population. In the VVF group, Fatalism (F) style of coping is negatively and significantly correlated with mental distress ($r = -0.304$, $p = 0.002$), while in the WCA group,

mental distress was significantly and positively correlated with Hopeless/Helpless (H/H) ($r = 0.815$, $p = 0.000$) and Anxious Pre-occupation (AP) ($r = 0.814$, $p = 0.000$). This is probably because of the small population size of WCA which made the overall percentage of psychiatric morbidity to be very high [Table 4].

	Status			
	VVF(N=100)		WCA(N=100)	
Coping subscales	Pearson(r)	p-value	Pearson(r)	p-value
Fighting Spirit (FS)	0.803	0	0.684	0
Hopeless/Helpless(HH)	0.428	0	0.815**	0
Anxious Preoccupation (AP)	0.678	0	0.814*	0
Fatalism (F)	615**	0	0.817	0
Avoidance (AV)	0.035	0.732		

Table 4: Relationship between coping mechanisms in VVF and WCA subjects.

Mitochondrial activity measurements

Four 25 cm² Nunclon delta surface flasks with EMEM complete medium were seeded with cultures of CCD 841 CoN cells and kept in an incubator at 37°C and 5% CO₂ until 70 % confluence was reached.

Next, in 2 flasks (control group) the medium was replaced with fresh medium. For another 2 flasks (treatment group) the medium was replaced with fresh medium containing 0.15 μM Lithium carbonate and 0.25 mM glycyrrhizic acid.

All flasks were kept in the incubator for an additional 12 hours. All flasks were then stained with mito tracker deep red FM (Cat. No. M22426, Thermo Fisher Scientific, Waltham, MA), which highlights active mitochondria, according to the manufacturer’s protocol. Cells were counterstained with DAPI and analyzed with a fluorescence microscope.

Discussion

This study investigated coping mechanisms in women with VVF and WCA. It also explored the relationships between coping mechanisms, socio-demographic characteristics in the study groups. The strength of this study lies in the application of a coping instrument; the Mental Adjustment to Cancer Scale.

Response rate: The study showed a response rate of 100% from both groups. Subjects from the VVF group were more cooperative and receptive to interviewers compared with the WCA group who, some of them felt that the duration of the interview was rather too long. The attitude of the VVF subjects may reflect a heightened desire for help and an appreciation that someone had shown some concern for their ailment.

Socio-demographic characteristics

Prior studies suggest that women mostly affected by VVF are young women [15-17]. The socio-demographic details of some of the

participants tend to suggest otherwise. The VVF subjects were dissimilar in age, educational status, and more likely to be separated or divorced than WCA. The minimum age of onset in this study was 16 years and fistulae majorly were caused by prolonged labour. The remaining cases were attributable to female genital mutilation (FGM). Previous studies conducted in south-east Nigeria had identified prolonged labour and FGM as some of the leading causes of VVF accounting for 84.4% of the cases studied [18,19]. FGM, a practice characterized by the excision of the clitoris is rampantly practised in southeast Nigeria.

The effect of public enlightenment on the dangers of FGM may have contributed to its absence as a cause of VVF in this study among younger subjects.

In this study, 40% of the VVF cases occurred in women between the ages of 26-35 years. This is similar to the results obtained from other studies in southeast Nigeria [18,19]. Most of the VVF cases seen here were longstanding and could explain the older age at presentation which does not necessarily translate to an older age at acquisition. Delay in the presentation was mainly informed by ignorance, superstitious beliefs and poverty as well as earlier unavailability of fistula repair services within the environment.

In a similar study conducted in northeast Nigeria in 2009, Igwe showed that the pattern of age distribution differed [20]. He reported that 46% of his VVF cases occurred in women between the ages of 14-24 years.

The majority of the VVF subjects (54%) had no formal education, while 91% were unemployed subsistence farmers and artisans. The low literacy level and poor socio-economic status of the VVF group are similar to previous studies [20]. The low literacy level is a reflection of poor school enrolment in Southeast Nigeria, especially for the girl-child. In many instances, lack of education hinders VVF prevention. Most rural dwellers see obstetric complications as due to the sins of the pregnant woman, the anger of the gods, The dead baby Witchcraft, God's will, Spiritual attack, a curse, evil spirits, or heredity [19].

The VVF subjects differed from the WCA subjects in their marital status, family type (in a monogamous or polygamous marriage), and employment status. WCA subjects were more likely to have come from a monogamous family ($\chi^2=48.42$, $p=0.0001$) and both groups have equal chances of retaining their marriages ($\chi^2=0.411$, $p=0.521$) after the onset of their illness. The majority of the patients in Southeast Nigeria lived with their husbands and continued with their reproductive careers in the presence of the fistula. This is similar to the findings in South-East Nigeria by Agwu where 60% were married and 57.1% in polygamous marriages [19]. This was contrary to the findings in Sokoto, North-West Nigeria where 50.5% of the subjects were married and 57.4% of VVF were in monogamous marriages while 42.6% were in polygamous marriages [21].

Some studies including women's dignity project, Tanzania have shown that women in polygamous marriages have significantly higher psychological distress [22]. But judging from the lack of association between marital status and marriage type with mental distress in this study, being married or being in a monogamous marriage does not appear to protect the VVF subjects from developing psychological distress. Also in this study, a larger but not significant proportion of VVF subjects were widows compared with the WCA group. This could be attributed to age-related mortalities as the duration of VVF in

most subjects is long-standing. Their status also was not found to increase their likelihood to become distressed.

Conversely, control subjects (WCA) were more likely to be gainfully employed compared with subjects with VVF ($\chi^2=47.01$, $p=0.0001$). Unemployment is an important risk factor for psychiatric morbidity and being gainfully employed has been noted by previous authors to ameliorate psychological distress [23]. Considering the effect of employment status on mental health, the lower prevalence of mental distress found in the WCA subjects (28%) compared with VVF subjects (95%) in the present study could be linked to their better employment state. Significant proportions of respondents of subjects with VVF lacked social support and suffered discrimination ($\chi^2=63.29$, $p=0.000$) when compared with control respondents (WCA).

This was similar to findings by Igwe, Makanjuola, et al. who reported a lower rate of social support and discrimination among patients with VVF and infertility respectively [20,24]. Age, marital status, social support and education may serve to identify groups of individuals at high risk for poor mental health.

Social support

In this study, the level of reported social support was negatively correlated with distress. In other words, subjects with high social support were less likely to have psychological distress. The WCA group had significantly higher perceived social support when compared with the VVF group. This is in agreement with the findings of Grierson & Batos, who reported that a higher rate of distress was related to lower social support in HIV-positive subjects [25]. Similar studies have demonstrated an association between poorer levels of social support with dysthymia, poorer quality of life and higher levels of overall morbidity [26]. Unlike other highly stigmatizing diseases like HIV, VVF patients do not have a support group. Support from their relatives is mainly in the form of material provision which is often insufficient and short-lived. The majorities of the afflicted were observed to have been abandoned by their spouses and were often divorced. Appreciable support comes from a health worker in form of consolation and encouragement only when they make contact with a health facility that was not continuous.

The coping mechanism in women with VVF and WCA without VVF

This study revealed that VVF subjects have a significantly higher fighting spirit and anxious pre-occupation compared with WCA subjects.

A fighting spirit seems to have a vital impact on coping. As their condition appears hopeless, the spirited effort put up to cope becomes overwhelmed by hopelessness making them fight harder psychologically. This is in contrast with WCA who have fewer things to worry about. This finding is corroborated by findings in other studies, reporting that patients who show a good fighting spirit have a better quality of life physically and psychologically [20,27,28]. Patients responding with Anxious Pre-occupation (AP) and Fatalism (F) react to the news of their diagnosis with excessive anxiety and/or depression which connote distress. Because there are some elements of information seeking in VVF subjects that did not apply to WCA subjects, the lower rate of coping strategy in WCA may be attributable to these items. Therefore, patients who have a positive attitude towards the outcome of their illness seek appropriate information

about the disease and take an active part in their recovery process, are less likely to suffer emotional distress.

A correlation analysis was further conducted to ascertain the association between the coping sub-scales and mental distress. Hopeless/Helpless (HH) was positively correlated with mental distress in WCA subjects ($r=0.815$, $p=0.000$), similarly, Anxious Preoccupation (AP) was positively correlated with negative coping styles in WCA subjects ($r=0.814$, $p=0.000$), while Fatalism (F) was negatively correlated with mental distress in VVF subjects ($r=-0.36$, $p=0.720$). These would suggest that VVF subjects whose coping style consisted mostly of hopeless/helpless and anxious pre-occupation were likely to develop mental distress, while subjects with WCA who utilized fatalism coping style were less likely to develop mental distress. Fatalism is a belief that events are controlled by external forces and humans are powerless to influence them.

In addition to Anxious Pre-occupation and Hopeless/Helpless, the Fatalism coping style was also described as impacting negatively psychologically [20,29]. However, other authors have reported that the role of fatalism as a coping strategy has been shown to differ depending on gender (females more than males), socioeconomic class (more in poor and less educated than high socioeconomic class) and cultural and religious background (more in blacks, Asians and Hispanics than in whites). When white and black persons who had similar education and economic status were paired, the difference in fatalism scores based on ethnicity or race was markedly diminished.

In this study, the majority of the VVF subjects were Christians of poor socio-economic status with little or no formal education; features which according to literature are favorable to fatalism developing as a way of coping. But one may argue that the comparison group (WCA group) did not show any marked difference between the cases and non-cases in the fatalism construct of the MAC scale. From the results, the comparison group had a greater perception of social support from friends, family and the community compared with the VVF group. VVF patients continue to experience severe psycho-social problems. Because of bad odour from constant urine leakage and difficulties in sexual intercourse, persons with VVF may be divorced by their husbands and ostracized by the community. Facing familial and social rejection and being unable to make a living by themselves, without any financial or social support, many may resign to fate. They turn to divine forces and the power of fate, as found in this study where the majority of subjects are Christians. This position was also reported by Balogun, who observed that some VVF patients used cultural and religious explanations to give meaning as well as seek social support to cope with their condition [30]. They may turn to religious organizations, like churches, that are sympathetic to their situation. According to Gbola, some of these churches give the free accommodation and feeding, as well as prayers for miraculous healings [31]. Some of these general observations may contribute to the use of fatalism by this group as the predominant coping strategy.

Conclusion

A strong fighting spirit will enhance a positive coping mechanism. There is a need for good social support in cases of chronic ill-health. Mental health support should be extended to these categories of patients as this will make the sufferers bear the problem with positive coping. There is also a need for more public enlightenment on the need for moral/ psychosocial support for women with VVF. Further research on religious coping and fatalism, in particular, may prove

useful in this environment considering the therapeutic effect it may have had on patients with VVF.

Ethical Consideration

Ethical approval for this study was granted by the research and ethics committee of the national fistula centre, Abakaliki. Informed consent was also obtained from individual participants.

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