

Intervention Study On Knowledge of Prevention of Vesicovaginal Fistula Among Secondary School Girls in Osun State

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Abstract:

Vesico vaginal fistula (VVF) in Nigeria has been on increase in recent times. It has become a menace that plagues the lives of females. Women's health is one of the major health issues in Nigeria. VVF is the most common kind of acquired fistulae of the urinary tract and remains a major cause for concern in many developing countries. This demoralizing condition thus destroys the health and wellbeing of the victims. This study therefore was an intervention study on knowledge of prevention of vesico-vaginal fistula among secondary school girls in Ilesa-East LGA, Osun State preventive strategies of vesico-vaginal fistula among secondary school girls in Ilesa-East LGA, Osun State. A quasi-experimental research design pre-test and post-test two group was used, and a sample size of 176 respondents were available using convenient technique. A self-designed test question paper was used for data collection and it was validated and yielded a reliability coefficient (index) of 0.729. Two research questions and four hypotheses were formulated and tested. Analysis of data was done using descriptive statistics and t-test statistical analysis fixed at the .05 level of significance. The findings of the study on the pre-intervention mean score of participants on the prevention of vesico-vaginal fistula in the control group was 2.33 ± 0.76 (38.8%) and 2.31 ± 0.81 (38.5%) in the experimental group with a mean difference of 0.02; post-intervention skill mean

EASIJ

Accepted 18 May 2021

Published 18 May 2021

DOI: 10.5281/zenodo.4768540

score of participants on the knowledge of prevention of vesico-vaginal fistula in the control group was 2.57 ± 0.93 (42.8%) and 4.93 ± 1.01 (82.2%) in the experimental group with a mean difference of 2.36. It was revealed further that there was a significant difference in the knowledge of prevention (Mean difference = 2.36, $t_{(174)} = 4.57$, $p = .000$) mean scores of participants on vesico-vaginal fistula in the control and experimental groups. In conclusion the intervention was able to improve knowledge of the respondents on prevention of vesico-vaginal fistula. Therefore, it is recommended that health education and advocacy be implemented as an important strategy to enhance young people's sexual health knowledge.

Keywords: Knowledge, Prevention, Secondary School Girls, Vesico-vaginal Fistula,

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Introduction

According to the medical profession, the term “vesico” means the urinary bladder (Morhason-Bello, et al, 2020). Vesico-vaginal fistula (VVF) is the abnormal link between the urinary tract and the vagina such that there is an uncontrollable leakage of urine into the vaginal tract. According to WHO (2018), VVF is an abnormal link between the urinary bladder and the vagina that leads to continuous involuntary release of urine into the vaginal vault. VVF happens where there is pelvic contraction, prolonged and obstructed labour leading to ischemia of tissues between the bladder and vagina (Onyeugo, et al, 2019).

There are more than two million women around the world who are living with the problem of fistula, mostly in Asia and Africa, with an addition of 50,000–100,000 new cases yearly (WHO, 2019). In Africa alone, a recent estimates revealed that at least 33,000 new cases occur yearly in sub-Saharan Africa including Sudan, Ethiopia, Chad, Ghana, and Nigeria (Federal Ministry of Health, 2019; WHO, 2018). In Nigeria, out of over 100,000 deliveries at the teaching Hospitals, there is of 350 cases of VVF (Ezeonu & Okoye, 2017), accounting for 40% of the worldwide burden of VVF (Ezeonu & Okoye, 2017). The incidence rate of VVF in South-West, Nigeria is 3.9/1,000 deliveries (Fehintola, et al., 2017). VVF may also arise from violent rape, gynecological operations like hysterectomy, and radiation damage following radiotherapy for pelvic malignancy (Raji, et al, 2018).

Vesico vaginal fistula (VVF) in Nigeria has been on a huge increase in recent times. It has become a scourge that plagues the lives of females in this century. Women's health is one of the major health issues in Nigeria. VVF is the most common kind of acquired fistulae of the urinary tract and remains a major cause for concern in many developing countries. Estimates reveal that about three million women in disadvantaged countries have unrepaired VVFs and that 30,000–130,000 new cases each yearly in Africa alone (Stamatakis, et al, 2014). As a matter of fact, most authors submitted the challenge of inaccurate data. It is however, estimated that about 800,000–1,000,000 women are still waiting for repair (Milicevic, et al, 2013). The exact incidence or prevalence of VVF in Nigeria is unknown (Ojewole, et al, 2018).

Nigeria is reported to contribute 40% of the worldwide burden of the VVF with about 12,000 new cases per year (FMH, 2015). The underlying factors include early marriage, lack of access to quality healthcare poverty, illiteracy, cultural practices (Sunday-Adeoye, et al, 2016). Women with VVF suffer from social challenges and the physical injury like divorce, abandonment, exclusion from social activities, separation from their families, worsening poverty and excruciating suffering (Onyeugo, et al, 2019). Vesico-vaginal fistula (VVF) is preventable and of public health importance which is common among women in rural areas of the world where there is the low-income population.

The clinical experience of the researcher revealed that 4 out of 10 VVF cases reported at the clinics in the study area are young females aged between 10 and 19 years. VVF stands as a serious challenge among secondary school girls in Ilesa-East LGA, Osun State. It was observed also that from the obstetric fistulae that many resulted from prolonged obstructed labour with subsequent vaginal deliveries for patients between age 13 and 19. Studies have shown that there is still a dearth of research on knowledge of VVF prevention (Raji, et al, 2018).

The researcher observed that in the last 5 years, the highest frequency of VVF was seen among patients between ages 10–19, which are also their teenage period. Most of the patients are those who got pregnant while in school when, their pelvic not yet well developed for labour. Some never booked for antenatal care due to shame or family rejection, and so have unsupervised deliveries outside the regular hospital; many of these labour's become prolonged and obstructed leading to VVF and complications. Therefore there is a need to know how health and sexual education can help to preventive and reduce the rate of VVF among women (Onyeugo, et al., 2019; WHO, 2016).

This researcher therefore, conducted an intervention study on knowledge of prevention of vesico-vaginal fistula among secondary school girls in Ilesa-East LGA, Osun State. This study specifically:

1. assessed the pre and post intervention knowledge of prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group; and
2. determined the difference between pre and post intervention knowledge of prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group

Research Questions

The following research questions were raised for this study:

1. What is the pre-intervention knowledge of prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group?
2. What is the post-intervention knowledge of prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group?

Research Hypothesis

This hypothesis was postulated for this study:

1. There is no significant difference in the pre intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group
2. There is no significant difference in the post intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group

Methodology

A quasi-experimental research design pre-test and post-test two groups was used to conduct an intervention study on knowledge of prevention of vesico-vaginal fistula among secondary school girls in Ilesa-East LGA, Osun State. The study applied an intervention package on the study population and measured how this intervention impacts the knowledge of prevention of vesico-vaginal fistula on the study population.

The target population for this study was the female students from the 2 selected secondary schools in Ilesa East Local Government, Osun State. The sample size of 176 for this

study was determined using the Leslie Kish formula. Leslie Kish formula provides the sample size (n) using the known population size (N) and the acceptable error value (e). Convenient sampling technique was used for the selection of 176 students (120 students in the experimental group and 56 students in the control group).

The study made use of Test paper on knowledge of prevention of VVF. The instrument was used to measure the cognitive domain in order to determine female students' knowledge on the prevention of VVF. A self-constructed structured questionnaire was given to experts in nursing science who ensured the face and content validity of the instrument. Pre-test of the questionnaire was done with 10% of the respondents which was 27 in a community secondary school that did not participate in the study and not nearer to the study sites. The data collected was used to determine the reliability of the instrument using Cronbach Alpha (R) in order to bring out internal consistency which yielded coefficient value of 0.729. Data collection was in three major phases which include a pre intervention session, intervention Session and post-intervention session.

The data collected was analysed using Statistical Package for Social Science (SPSS) Version 23. Descriptive statistics and inferential statistics were used to analyse the data. Descriptive statistics includes; Frequency tables, percentage, mean and standard deviation for the research questions while inferential statistics of T-test was used in testing the hypotheses

Results

Research Question 1: What is the pre-intervention knowledge of prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group?

Table 1: Pre-intervention knowledge on prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group

Knowledge of prevention VVF	Category of scores	Control		Experimental	
		Freq.	%	Freq.	%
Below average	1-2	41	73.2	89	74.2
Average	3-4	15	26.8	31	25.8
Above average	5-6	-	-	-	-
Total		56	100.0	120	100.0
Mean \pm SD (%)		2.33 \pm 0.76 (38.8%)		2.31 \pm 0.81 (38.5%)	
Mean difference		0.02			
Maximum score		4.0		4.0	
Minimum score		1.0		1.0	

Table 1 shows the pre-intervention mean score of participants on the prevention of vesico-vaginal fistula in the control and experimental group. Forty-one (73.2%) participants

in the control group had below average score, 15 (26.8%) had mean scores at average on the prevention of vesico-vaginal fistula. In the experimental group, 89 (74.2%) had below average score and 31 (25.8%) had average score knowledge score on the prevention of vesico-vaginal fistula. The pre-intervention mean score of participants on the prevention of vesico-vaginal fistula in the control group was 2.33 ± 0.76 (38.8%) and 2.31 ± 0.81 (38.5%) in the experimental group with a mean difference of 0.02.

Research Question 2: What is the post-intervention knowledge of prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group?

Table 2: Post-intervention knowledge on prevention' mean score of participants on the vesico-vaginal fistula among female participants in the control and experimental group

Knowledge of prevention VVF	Category of scores	Control		Experimental	
		Freq.	%	Freq.	%
Below average	1-2	40	71,4	-	-
Average	3-4	16	28.6	42	35.0
Above average	5-6	-	-	78	65.0
Total		56	100.0	120	100.0
Mean \pm SD (%)		2.57 \pm 0.93 (42.8%)		4.93 \pm 1.01 (82.2%)	
Mean difference		2.36			
Maximum score		4.0		6.0	
Minimum score		1.0		3.0	

Table 2 shows the post-intervention mean score of participants on the knowledge of prevention of vesico-vaginal fistula in the control and experimental group. Forty (71.1%) participants in the control group had below average score and 16 (25.6%) scores at average on the knowledge of prevention of vesico-vaginal fistula. In the experimental group, 42 (35.0%) had average score and 78 (65.0%) had above average score on the knowledge of prevention of vesico-vaginal fistula. The post-intervention skill mean score of participants on the knowledge of prevention of vesico-vaginal fistula in the control group was 2.57 ± 0.93 (42.8%) and 4.93 ± 1.01 (82.2%) in the experimental group with a mean difference of 2.36.

Test of Hypotheses

Hypothesis 1: There is no significant difference in the pre intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group

Table 3: Independent t-test to show the difference in the pre intervention mean scores on the knowledge of prevention of vesico-vaginal fistula in the control and experimental groups

	N	Mean	Std. Deviation	Df	T	Mean diff	p value
Control	56	2.33	0.76				
Experimental	120	2.37	0.81	174	1.50	0.02	.154

The results presented in Table 3 indicated no significant difference in the pre intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group (Mean difference = 0.02, $t_{(174)} = 0.88$, $p = 1.50$). Based on this, the earlier set hypothesis is accepted. Therefore, there is no significant difference in the pre intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group.

Hypothesis 2: There is no significant difference in the post intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group

Table 4: Independent t-test to show the difference in the post intervention mean scores on the knowledge of prevention of vesico-vaginal fistula in the control and experimental groups

	N	Mean	Std. Deviation	Df	T	Mean diff	p value
Control	56	2.57	0.93				
Experimental	120	4.93	1.01	174	4.57	2.36	.000

The results presented in Table 4 indicated a significant difference in the post intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group (Mean difference = 6.70, $t_{(174)} = 4.57$, $p = .000$). Based on this, the earlier set hypothesis cannot be accepted. Therefore, there is significant difference in the post intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group.

Discussion

Participant's knowledge on the prevention of vesico-vaginal fistula in the control and experimental group revealed that over two-third had knowledge below average. (control group was 2.33 ± 0.76 (38.8%) and 2.31 ± 0.81 (38.5%) in the experimental group with a mean difference of 0.02). This could have been as a result of poor knowledge on what vesico-vaginal fistula is all about. This is in line with the studies conducted in Nigeria that out of about 100,000 deliveries at the teaching hospitals, there is a VVF rate of 350 cases (Ezeonu & Okoye, 2017) accounting for 40% of the global burden of VVF (Ezeonu & Okoye, 2017). In South-West, Nigeria the incidence rate of VVF is 3.9/1,000 deliveries (Fehintola, et al, 2017). VVF may also result from gynecological operations like hysterectomy, radiation damage following radiotherapy for pelvic malignancy and violent rape (Raji, et al, 2018). VVF is more common among young people, who are usually at risk of obstructed labour due to inadequate pelvis. Thus, support the need for this study that having adequate knowledge of VVF at the early adolescence stage may help in its prevention.

The post-intervention mean score of participants on the knowledge of prevention of VVF in the control group was 2.57 ± 0.93 (42.8%) and 4.93 ± 1.01 (82.2%) in the experimental group with a mean difference of 2.36. Thus, it could be said that after the intervention, the participants mean score on knowledge of prevention was high. This leads credence to the findings of Banke-Thomas, et. al. (2013) shows that, to the majority rural young women had good knowledge about the prevention of obstetric fistula. The nurse-led intervention was able to improve the participants' knowledge on prevention of VVF.

It was shown in the findings of this study that no significant differences in the pre-intervention knowledge mean score of participants on prevention of VVF in the control and experimental group, ($p = 1.50$). Based on this, the earlier set hypothesis in accepted. This agrees with the study conducted by Gabresilase, (2014) who found that majority of the respondents had poor knowledge on the prevention of obstetric fistula. They never knew that avoiding; early marriage, cultural practices, and immediate seeking and access to emergency obstetric care prevent obstetric fistula. Majority were very naïve about obstetric fistula prevention who only sought God's mercy to overcome the curse. Also, Mselle, et. al., (2013) reveals that majority of the participants had little knowledge about the prevention of obstetric fistula. This implies that the participant do not have adequate knowledge of prevention of vesico-vaginal fistula.

It was indicated in the findings of the above hypothesis that there is a significant difference in the post intervention knowledge mean score of participants on prevention of vesico-vaginal ($p = .000$). Based on this, the earlier set hypothesis cannot be accepted. Therefore, there is significant difference in the post intervention knowledge mean score of participants on prevention of vesico-vaginal fistula in the control and experimental group. This findings correlates with Kasamba, Kaye and Mbalinda, (2013) in a qualitative study using focus group discussion for males and females aged 18-49 years, to explore and gain deeper understanding of their awareness of existence, causes, clinical presentation and preventive measures for obstetric fistula, had right knowledge on the prevention of obstetric fistula. Majority knew that it could be prevented by early access to emergency medical care to avoid prolonged labour. Also, Marguerine, et. al. (2011) in a descriptive and multivariate analyses based on 2006 UDHS data found out that, majority of the respondents from the central region of Uganda knew that, older age (beyond 18 years) at first sexual intercourse and delayed pregnancy would prevent the risk of developing obstetric fistula. They revealed that, girl's sexual intercourse between 7-14 years was very risky for girls and would predispose them to obstetric fistula. However, majority mentioned that, even if one got pregnant at an age beyond 20 years and had earlier engaged in sexual intercourse before 18 years would also develop obstetric fistula. It could be said that the nurse-led educational intervention on prevention of VVF among secondary school girls in Ilesa East LGA, Osun-state, has significantly affected the knowledge of the teens positively on prevention of VVF.

Conclusion

It is concluded that the nurse-led intervention program improved the knowledge of prevention of vesico-vaginal fistula among secondary school girls.

Recommendations

Based on the conclusions of this study, the following recommendations are call for:

1. Secondary school girls should be taught about causes and prevention of vesico-vaginal fistula.
2. There should be increased campaign against practise of female genital mutilation which can leads to vesico-vaginal fistula by all stakeholders and the government at all levels.
3. Parents should not stigmatize pregnant teenagers rather help them to have regular ante-natal care services and delivery. It is very pertinent to orientate and re-orientate parents on how to handle their teens. Parents must come to the knowledge of how their teens grow and change; if they are to assist them through this important developmental stage of sexual exploration. Adequate parent-child interpersonal relationship and active listening to teens' languages and emotional concerns could be of great help.

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Cite this article:

Author(s), ABIOYE, Abigail Adebisi (RN, RM, RME, BNSc.), Dr. OWOPETU, C.A. (RN, RM, PhD), (2021). "Intervention Study On Knowledge of Prevention of Vesicovaginal Fistula Among Secondary School Girls in Osun State", **Name of the Journal:** Euro Afro Studies International Journal, (EASIJ.COM), P, 41 -52. DOI: www.doi.org/10.5281/zenodo.4768540, Issue: 5, Vol.: 3, Article: 5, Month: May, Year: 2021. Retrieved from <https://www.easij.com/all-issues/>

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