



Assessment of Self-esteem and Quality of Life of Patients with Anogenital Warts: A Cross-sectional, Hospital-based study, Southwestern Nigeria

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Abstract: Background: Anogenital wart, a manifestation of infection with the Human papillomavirus, the commonest sexually transmitted infection globally. It affects not just the physical health, but also the psychological well-being, self-esteem and quality of life of patients. However, data on the psychological effects of this disease among Nigerians is limited. Objective: To assess the self-esteem and quality of life of patients with anogenital warts attending a tertiary healthcare facility in Southwestern Nigeria. Methods: A cross-sectional hospital-based study, was conducted among 97 patients with clinically diagnosed anogenital warts attending the Genito-Urinary Medicine Clinic of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria, between March 2018 and April 2023. Participants were recruited consecutively. Data were collected using a sociodemographic questionnaire, the Rosenberg Self-Esteem Scale (RSES), and the Dermatology Life Quality Index (DLQI). Data were analysed using descriptive and inferential statistics, with statistical significance set at $p < 0.05$. Results: The mean age of participants was 27.4 ± 9.4 years, and most were aged 20-29 years (71.0%). Low self-esteem was observed in 16.5% of participants. Anogenital warts negatively affected QoL in 80.9% of participants, with moderate, large, and extremely large effects observed in 23.4%, 18.1%, and 4.3%, respectively. Males demonstrated significantly greater QoL impairment than females (median DLQI: 8 vs. 4; $p = 0.022$). The most affected DLQI domain was symptoms/feelings. Conclusion: Anogenital warts exert a substantial negative impact on quality of life despite relatively preserved self-esteem in most patients. Comprehensive management should incorporate psychological assessment, counselling, and sexual health education alongside lesion-directed therapy.

Keywords: Self-esteem, sociodemographic, anogenital wart, infection, dermatology life quality index.

INTRODUCTION

Anogenital warts are a consequence of persistent human papillomavirus (HPV) infection afflicting the human race. HPV is the most common sexually transmitted infection (STI) and constitutes a significant public health challenge globally due to its high prevalence among other STI cohorts and tendency to cause various forms of penile, cervical, and anal cancers in humans [1,2]. Anogenital warts are epidermal proliferations signalling HPV infection, mostly caused by HPV serotypes 6 and 11 among more than 100 strains. The virus is transmitted through close contact, such as sexual intercourse. According to the World Health Organisation (WHO) 2020 global report, there were an estimated 604,127 cervical cancer cases, but unfortunately, 341,831 deaths in the year 2020 [3]. In many parts of Sub-Saharan Africa (SSA), there is no official registry for anogenital warts or a dedicated referral centre or clinic for the management of anogenital warts, making it difficult to estimate its actual prevalence. Most of the documented prevalence across SSA is from selected populations like pregnant women, commercial sex workers, and STI clinic patients [4]. However, the prevalence is likely to be on the rise due to high incidence of early sexual exposure and unprotected multiple sexual partners [4,5] and lack of political will to prioritise HPV preventive strategies like vaccination and distribution of condoms in SSA, and therefore contribute to the rise in anogenital warts. This low HPV vaccination was reported in studies, that only 3% of low- and middle-income countries between the ages of 10 and 20 years, as against 34% in developed nations, that have vaccine coverage [5,6]. Nigeria has a high burden of HPV, the virus responsible for anogenital warts infection, which varies from region to region [7-9]. The prevalence of HPV varies depending on the geographic location and study population. In a systematic review, the prevalence was shown to range between 24% and 45% among the reproductive age group [10]. Ashaka et al. (2022) in Lagos reported HPV prevalence of 81.8% in all women and 87.59% in women with normal cytology [11]. Anogenital warts also follow this varied pattern of HPV in Nigeria [8]. Madubuko et al, in Benin, Nigeria, reported a prevalence of anogenital warts to be 89.3% [12] while in the Abuja study, it was 1% among HIV-negative women [9]. Presence of other co-morbid conditions like HIV and other STDs can also increase the prevalence of anogenital warts by as much as 5 times [9,10].

Patients diagnosed with anogenital warts have been shown to have diminished quality of life [13], which is expressed in the form of stigmatization, anxiety, feelings of guilt, depression, sexual dysfunction, and sometimes suicidal ideations [2,13,14]. These psychological effects and shame, especially in sub-Saharan Africa, are largely due to the potentially non-curable nature of HPV, fear of transmission to partners, inadequacy of treatment modality, high recurrence rate, risk of cancers, and fear of vertical transmission to babies born by pregnant women with HPV or genital warts, low self-esteem, and impaired quality of life [2,5]. Despite many of the patients with genital warts suffering psychological effects, embarrassment, and anxiety during consultations [5,13,15], documented evidence of the effects of anogenital warts on quality of life and self-esteem is sparse in this environment.

The World Health Organisation (WHO) defines Quality of Life (QoL) as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns [16]. The QoL subjectively assesses both positive and negative aspects of life in a broad, complex, and

multidimensional way. The QoL evaluation considers individual health, psychological state, interpersonal relationships, personal beliefs, and relevant environmental factors [16].

For this study, the Dermatology Quality of Life Index (DQLI) questionnaire, developed in 1994 by Finlay and Khan was used to assess the quality of life [17], and the Rosenberg self-esteem scale (RSES) was used to evaluate the self-esteem [18]. The two instruments were used because of their high reliability and internal consistency. Both DQLI and RSES have been validated in Nigeria, where the research was conducted [17-19].

Studies investigating the emotional and psychosocial effects of patients with anogenital warts in this environment are rare. Therefore, this study met the objective of documenting the sociodemographic characteristics and impact of genital warts on sufferers by evaluating the quality of life and self-esteem of the patients.

MATERIALS AND METHODS

Study Design

This is a cross-sectional study nested within a larger ongoing research. Consecutive eligible patients were recruited for the study. All patients who fulfilled the inclusion criteria were selected consecutively between March, 2018 and April, 2023.

Study Setting

The study was conducted at the Genito-Urinary Medicine Clinic of the Department of Dermatology/Venereology of Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife, Osun State, Nigeria. OAUTHC is a Federal Government of Nigeria tertiary health facility and referral centre for many primary and secondary health care facilities.

Study Population

The study participants were all the 97 patients diagnosed clinically with genital or anogenital warts and receiving healthcare services at the Genito-Urinary Medicine Clinic of OAUTHC. Inclusion Criteria: 18 years or older, giving informed consent, and willingness to participate in the study. For participants under 18 years of age, informed consent was obtained from their parents or guardians. Exclusion criteria: patients who declined consent to participate in the study.

Sampling Technique

The patients were selected using a convenience sampling method. All patients who fulfilled the inclusion criteria were selected consecutively between March, 2018 and April, 2023.

Data Collection Method and Instruments

The investigators collected data from all 97 consenting participants using the following questionnaires for each of the patients:

- (1) Sociodemographic profiles, sexual behaviours, and social habits.
- (2) Dermatology Quality Life Index (DLQI).
- (3) Rosenberg Self-Esteem Scale (RSES).

Quality of Life Assessment

The DQLI consists of 10 questions (Q) in 6 domains focusing on anogenital wart problems over the last week. Q1 and Q2 belong to the 1st domain, which are symptoms and feelings; the 2nd domain is daily activities and has Q3 and Q4, the 3rd domain is leisure and has Q5 and Q6, the 4th domain is work and school linked to only Q7, 5th domain is personal relationship linked to Q8 and Q9, treatment over the past one week is the 6th domain is covered by Q10. Each question is scored as “very much”, “a lot”, “a little”, “not at all”, and each of these questions was assigned a numerical value or score of “3”, “2”, “1”, and “0” respectively. The summation of all the scoring for each patient's QoL is interpreted as follows: 0-1: No effect, 2-5: Small effect, 6-10: Moderate effect, 11-20: Very large effect, 21-30: Extremely large effect. The scores range from 0 to 30, with higher scores indicating greater impairment of QoL [9].

Self-esteem Assessment

Self-esteem is defined as a favourable or unfavourable attitude toward oneself [18]. The advent of information technology in the form of numerous social media, especially among youths and young adults, has placed a high premium on sexual health and body image [19]. The RSES instrument uses a 5-point scale that ranges from strongly agree to disagree to rate a series of 10 statements. The total score ranges from 0 to 30. Scores less than 15 suggest low self-esteem, while scores of 15 and higher indicate normal self-esteem [18,19].

Data Analysis

The data were entered into the IBM Statistical Package for Social Sciences version 25.0 using codes to keep the privacy of the patients. Thereafter, they were carefully checked and cleaned.

Data were analysed and represented using descriptive statistics such as frequency distributions, means, median, standard deviation, and percentages. Bivariate analysis, such as Chi-square, was used in finding any relationship between the variables of interest. The level of significance was set at $p < 0.05$.

Ethical Approval

Ethical clearance for the study was sought and granted by the Ethics and Research Committee of Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC/ERC), Ile-Ife (REGISTRATION NUMBER: IRB/IEC/0004553). Data entry was anonymous to ensure privacy and confidentiality. The data were stored in a dedicated computer, only accessible to the investigator and protected from unauthorised individuals using a password-protected computer.

RESULTS

Table 1 shows the sociodemographic characteristics of the participants. A total of 97 patients participated in this study, with a female-to-male ratio of 1.1:1. The age of the participants ranged from 17 years to 73 years, with a mean age of 27.4 ± 9.45 years. The age group 20 - 29 years was the most affected in 66 (71.0%) of the cases. The female participants were significantly younger ($p = 0.014$). Those with tertiary education and graduates were the most common participants in 83 (85.6%) of cases. The majority, 68 (70.1%) of the participants were single. The occupations mostly affected were the students, and unemployed categories in 55(56.7%).

Table 1: Sociodemographic characteristics of the participants (n=97)

Sociodemographic characteristics	Sex		Total	Statistical test and p-value
	Females	Males		
Age group				
< 20 years	5(5.4)	2(2.2)	7 (7.5)	LR= 5.128 $p = 0.024$
20 - 29 years	37(39.8)	29(31.2)	66 (71.0)	
>30 years	6(6.5)	14(15.0)	20(21.5)	
Total	48	45	93	Missing 4
Age range	17 - 52	18 -73	17 -73	
Mean age	25.08 ± 7.199	29.87 ± 10.918	27.4 ± 9.448	T-test: -2.509 $p = 0.014$
Education				
No formal education	0 (0.0)	2(2.1)	2(2.1)	
Primary	0(0.0)	1(1.1)	1(1.0)	LR = 5.910 $p=0.206$
Secondary	6(6.2)	5(5.2)	11(11.3)	
Undergraduate	25(25.8)	17(17.5)	42(43.3)	
Graduate	19(19.6)	22(22.7)	41(42.3)	
Total	50	47	97	Missing 0
Marital status				
Single	36(37.1)	32(33.0)	68(70.1)	
Co-habiting	0(0.0)	1(1.0)	1(1.0)	
Married	14(14.4)	13(13.4)	27(27.8)	LR= 2.952 $p=0.399$
Separated	0(0.0)	1(1.0)	1(1.0)	
Total	50	47	97	
Occupation				
Unemployed/schooling/retired	35(36.1)	20(20.6)	55(56.7)	
Unskilled worker (manual labour, cleaners, farmers etc)	3(3.1)	6(6.2)	9(9.3)	
Semi-skilled worker (artisans: tailors, barbers, carpenters)	6(6.2)	6(6.2)	12(12.4)	LR= 9.055 $p=0.029$
Skilled workers and professionals	6(6.2)	15(15.5)	21(21.6)	
Total	50	47	97	

LR= Likelihood Ratio, p = p-value, T-test = Student t test

Table 2 depicts the sexual behaviours and social habits of the participants. All the females, 48 (51.6%) and 30 (32.3%) males have 1-5 and greater than 5 sexual partners, respectively. Males with greater than 10 sexual partners were 16 (17.2%). Sixty-six (71.0%) of the participants only use a condom once in a while. Sixteen (17.2%) participants engaged

in sex without the use of a condom. It was noticed that 69 (75.0%) had their anogenital warts for 1-12 months. Thirty-one (33.7%) each of the women and men with anogenital warts were the early and late presenters to the physicians respectively. Females were significantly more likely to present earlier than males before 3 months (odds ratio: 4.3484, 95% CI: 1.810 - 10.453, $p = 0.001$). Smoking, alcohol use, and psychoactive substance use were mostly seen among men in 25 (25.8%), 38 (39.2%), and 9 (9.3%), respectively. All the sexual behaviours and social habits of the participants from Table 2 were significantly related to the gender of the participants, with $p < 0.05$.

Table 2: Sexual Behaviour and Social Habits of the Participants (n=97)

Sexual Behaviour and Social Habits	Sex		Total	Statistics and p -value
	Females	Males		
Number of sex partners				
1 - 5	48 (51.6)	15 (16.1)	63 (67.7)	
6 - 10	0(0.0)	14(15.1)	14(15.1)	$X^2 = 55.286$ $p=0.000$
>10	0(0.0)	16(17.2)	16(17.2)	
Total	48	45	93	
Condom use behaviours				
Never	15(16.1)	1(1.1)	16(17.2)	
Sometimes (once in a while)	27(29.0)	39(42.0)	66(71.0)	$X^2 = 14.514$ $p=0.001$
Always	5(5.4)	6(6.5)	11(11.8)	
Total	47	46	93	
Duration of symptoms				
<1month	4(4.4)	3(3.3)	7(7.6)	$LR=9.504$, $p=0.002$
1 - 3 months	27(29.3)	10(10.9)	37 (40.2)	
4 -12 months	13(14.1)	19(20.7)	32(34.8)	
Greater than 1 year	4(4.4)	12(13.0)	16(17.4)	
Total	48	44	92	Missing 5
Presentation to clinic				
Early presenters (≤ 3 months)	31(33.7)	13(14.1)	44(47.8)	$X^2=11.294$, $p=0.001$
Late presenters(>3 months)	17(18.5)	31(33.7)	48(52.2)	
Total	48	44	92	Missing 5
Smoking (cigarettes)				
No	46(47.4)	22(22.7)	68(70.1)	$X^2= 23.607$ $p=0.000$
Yes	4(4.1)	25(25.8)	29(29.9)	
Total	50	47	97	
Alcohol				
No	34(35.1)	9(9.3)	43(44.3)	$X^2 = 23.427$ $p=0.000$
Yes	16(16.5)	38(39.2)	54(55.7)	
Total	50	47	97	
Psychoactive substance use(weed)				
No	48(49.5)	38(39.2)	86(88.7)	$X^2 = 5.530$ $p=0.019$
Yes	2(2.1)	9(9.3)	11(11.3)	
Total	50	47	97	

X^2 = Chi-square, LR = Likelyhood ratio, p = p value

Table 3 shows the effects of anogenital warts on Rosenberg score and DQLI values of the participants. This study showed that RSES was affected in a total of 16 (16.6%) participants with low self-esteem, with males and females affected equally. The DLQI was also affected in the majority, 80.9% (n=76) of participants. The proportions of the

participants affected were small effect 33 (35.1%), which is also the most affected, moderate effects were 22 (23.4%), large effect 17 (18.1%), and extreme effect in 4 (4.3%). The symptom and feeling domains were the most strongly affected by anogenital warts, with DQLI median scores for the domain in both males and females being 1.50 and 1.00 respectively. Similarly, males were more likely to be affected in their personal relationships and daily activities with DQLI median score for the domain been 0.50.

Table 3: Genital Warts Effect on Rosenberg score and DQLI values of the participants (n=97)

Genital Warts Effects	Sex of the participants N (%)		Total Participants	Statistics and <i>p</i> - value
	Female 50 (51.6)	Male 47 (48.4)		
On RSES score				
Low self-esteem (0 - 14)	8 (8.3)	8 (8.3)	16 (16.6)	Chi ² = 0.018, <i>p</i> = 0.892
Normal self-esteem (15 - 30)	42 (43.3)	39 (40.2)	81 (83.5)	
Mean total RSES score	20.04 ±5.664	19.745 ±5.211	19.896± 5.423	T-test = 0.267, <i>p</i> = 0.790
On DLQ Index				
0 - 1 No effect	10 (10.6)	8 (8.5)	18 (19.2)	Chi ² = 9.381, <i>p</i> = 0.052
2 - 5 Small effect	22 (23.4)	11 (11.7)	33 (35.1)	
6 - 10 Moderate	9 (9.6)	13 (13.8)	22 (23.4)	
11 - 20 Large	4 (4.3)	13 (13.8)	17 (18.1)	
21 - 30 Extreme	2 (2.1)	2 (2.1)	4 (4.3)	
Total (Missing 3)	47	47	94	
DQLI Mean total score	5.851 ± 6.672	8.128 ± 6.344	6.989 ± 6.575	T-test = -1.695, <i>p</i> = 0.093
DQLI Median total value	4.000	8.000	5.000	MWUT <i>p</i> = 0.022
DQLI Median scores for the Sub- domain analysis				MWUT (<i>p</i> -value)
Symptom / Feeling (Question 1 & 2)	1.00	1.50	1.500	0.081
Daily activities (Question 3 & 4)	0.00	0.50	0.00	0.060
Leisure (Question 5 & 6)	0.00	0.00	0.00	0.067
Work / School (Question 7)	0.00	0.00	0.00	0.807
Personal relationship (Question 8 & 9)	0.00	0.50	0.50	0.426
Treatment over the past week (Question 10)	0.00	0.00	0.00	0.095

Chi²= Chi-square, LR= Likelihood ratio, *p* = *p*-value, T-test= Student t-test, MWUT= Mann-Whitney U Test

The relationships between sociodemographic profile, DLQI, and RSES are shown in Table 4. The participants with little or no effects DLQI were almost equal in proportion, 55.1% (27/49) versus 56.1% (27/41) between those ≤25 years and >25 years. The large effect was also observed more with those aged 25 years and older, 20.4% (10/49) versus 24.4% (10/41). Similarly, low RSES was noticed to be more in participants greater than 25 years of age and was seen in 19.5% (8/41) versus 15.4% (8/49).

Table 4: Relationship between Sociodemographic Profile, DLQI and RSES (n=97)

Variable	DLQI N (%)			RSES N (%)	
	No effect - Little effect	Moderate effect	Large - Extreme effect	Low	Normal
Age					
25 years and below	27(55.1)	12(24.5)	10(20.4)	8(15.4)	44(84.6)
Greater than 25 years	23(56.1)	8(19.5)	10(24.4)	8(19.5)	33(80.5)
Total	50(55.6)	20(22.2)	20(22.2)	16(17.2)	77(82.8)
Missing	7			4	
Statistics/p-value	Chi ² = 0.412, <i>p</i> = 0.814			Chi ² = 0.247, <i>p</i> = 0.601	
Education					
Graduate	15(37.5)	15(37.5)	10(25.0)	5(12.2)	36(87.8)
Undergraduate	27(65.9)	6(14.6)	8(19.5)	9(21.4)	33(78.6)
Secondary	7(70.0)	1(10.0)	2(20.0)	2(18.2)	9(81.8)
Primary	1(100.0)	0(0.0)	0(0.0)	0(0.0)	1(100.0)
No formal education	1(50.0)	0(0.0)	1(50.0)	0(0.0)	2(100.0)
Total	51(54.3)	22 (23.4)	21(22.3)	16(16.5)	81(83.5)
Missing data	3			0	
Statistics/p-value	LR=12.067, <i>p</i> = 0.148			LR =2.389, <i>p</i> = 0.665	
Occupation					
Unemployed/schooling/retired	30(56.6)	11(20.8)	12(22.6)	9(16.4)	46(83.6)
Unskilled worker (cleaners, farmers)	7(77.8)	1(11.1)	1(11.1)	1(11.1)	8(88.9)
Semi-skilled worker (artisans: carpenters)	6(54.5)	3(27.3)	2(18.2)	3(25.0)	9(75.0)
Skilled workers /professionals	8(38.1)	7(33.3)	6(28.6)	3(14.3)	18(85.7)
Total	51(54.3)	22(23.4)	21(22.3)	16(16.5)	81(83.5)
Missing	3			0	
Statistics/p-value	LR = 4.779, <i>p</i> = 0.572			LR = 0.849, <i>p</i> = 0.838	
Marital Status					
Single	32(47.1)	22(32.4)	14(20.6)	11(15.7)	59(84.3)
Married	19(73.1)	0(0.0)	7(26.9)	5(18.5)	22(81.5)
Total	51(54.3)	22(23.4)	21(22.3)	16(16.5)	81(83.5)
Missing	3			0	
Statistics/p-value	X ² = 11.096, <i>p</i> = 0.004			FE= 0.765, <i>p</i> = 0.476	
No of Sexual Partners					
10 or less	41(55.4)	19(25.7)	14(18.9)	9(11.7)	68(88.3)
>10 or more	6(35.7)	3(18.8)	7(43.8)	6(37.5)	10(62.5)
Total	47(52.2)	22(24.4)	21(23.3)	15(16.1)	78(83.9)
Missing	7			4	
Statistics	LR=4.082, <i>p</i> = 0.130			FE=0.020, <i>p</i> = 0.020	
Condom use					
No	9(47.4)	5(23.6)	5(23.6)	2(10.5)	17(89.5)
Yes	30(57.7)	11(21.2)	11(21.12)	11(20.8)	42(79.2)
Total	39(54.9)	16(22.5)	16(22.5)	13(18.1)	59(81.9)
Missing	26			25	
Statistics	LR = 0.597, <i>p</i> =0.742			FE= 0.491, <i>p</i> =0.267	
Time of Presentation					
Early presentation	24(57.1)	10(23.8)	8(19.0)	5(11.4)	39(88.6)
Late presentation	24(51.1)	10(21.3)	13(27.7)	11(22.9)	37(77.1)
Total	48(53.9)	20(22.5)	21(23.6)	16(17.4)	76(82.6)

Missing data	8	5
Statistics	$\chi^2 = 0.912, p = 0.634$	$\chi^2 = 2.133, p = 0.144$

χ^2 = Chi-square, FE= Fisher's exact test, LR= Likelihood ratio, p = pvalue,

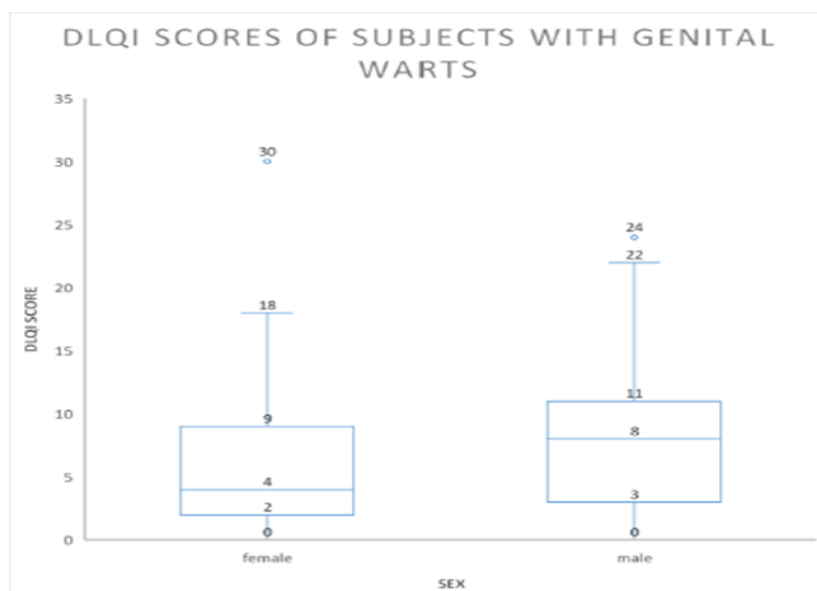


Figure 1: Box plot comparing DLQI scores between males and females. Males had a significantly higher DLQI score than females suggesting a higher negative impact of anogenital warts in males compared with females and this was statistically significant ($p = 0.022$).

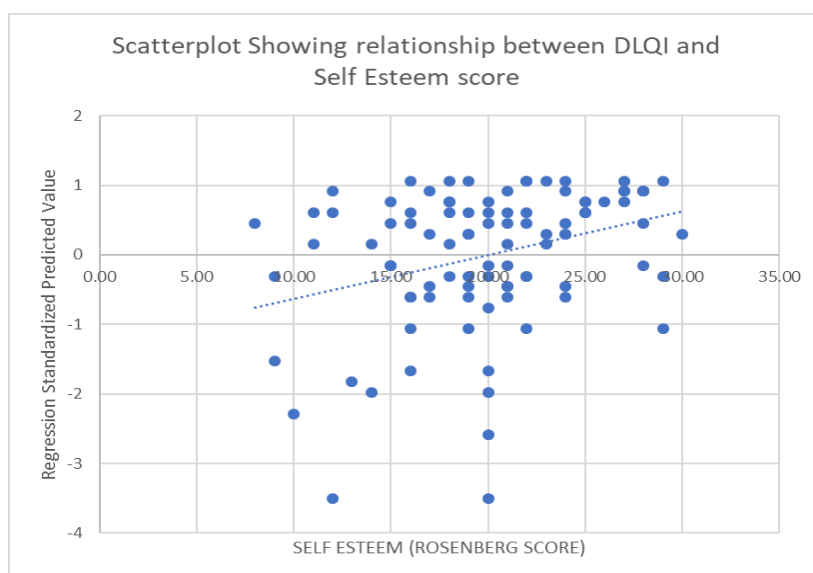


Figure 2: Scattered plot showing the relationship between DLQI and Self-esteem scores of participants ($n=97$)

Figure 2 suggests a slight or weak positive linear relationship between self-esteem and quality of life among the participants. This is demonstrated by the wide dispersion of observations around the fitted regression line in the scatter plot.

DISCUSSION

Anogenital warts, caused by infection with human papillomavirus (HPV), are the most prevalent sexually transmitted infection globally [20]; therefore, this study documented the sociodemographic characteristics of affected individuals and the impact of the disease on the quality of life and self-esteem of affected individuals in Southwest Nigeria. There were 97 participants in this study, with females slightly outnumbering males (Table 1). This could be as a result of the fact that women are more concerned about their physical appearance, the social stigma that is associated with this disease, and the possibility of malignancy associated with the infection. This gender difference is similar to observations from similar studies in Nigeria and sub-Saharan Africa [21-23].

Most of the participants in this study were under 30 years old, supporting the point that sexual activities are highest among young adults, during which risky sexual behaviours with multiple partners and use of psychoactive substances are common, thereby increasing the risk of acquiring sexually transmitted infections [20]. This finding was also observed in other similar studies where the majority of participants were in the young age group [9,13,15,21-26]. Consequent on the young age of most of the participants in this study, the majority of them were single. Another reason a significant proportion of participants in this study were unmarried may be fear of rejection, which may lead to difficulties initiating new relationships. This fear of rejection may be attributed to some degree of sexual dysfunction, as reported by Elhamady et al. (2025) among men with genital warts [13].

The males in this study reported significantly more sexual partners than the females. All the females had fewer than five sexual partners, while all the study participants with more than ten sexual partners were males. Only 11.8% of the participants in this study reported consistent condom use, highlighting risky sexual behaviours among young Nigerians. Multiple sexual partners seem to drive unprotected sexual intercourse among young people. This finding aligns with the study by Ogbolu et al. (2024) in Northern Nigeria, which reported that the majority of the participants with more than one sexual partner did not practice safe sex [21]. This is also consistent with the report by Afolabi et al. (2022), indicating that condom use is not common among unmarried Nigerians [27]. An Iranian study by Faramarzi et al. (2025) reported that 77.8% of patients with anogenital warts practice unprotected sexual activities [20]. Alcohol consumption, use of tobacco, and psychoactive substances were common among participants and significantly predominant among males compared to females in this study (Table 2). This further explains the reasons for the risky sexual behaviours, poor use of condoms, and increased multiple sexual partners, particularly among the male participants. The observation in this study is similar to the finding in the study by Onwuamah et al. (2023), who reported that smoking and alcohol use had a positive correlation with infection with HPV [28].

One of the major strengths of this study is that it evaluated not just the physical manifestations of anogenital warts, but also assessed the psychological impact of this disease on the affected individuals using two validated instruments: the Rosenberg self-esteem scale (RSES) and the Dermatology Life Quality Index (DLQI). This study found that 1 in 6 patients (16.5%) with anogenital warts had low self-esteem, this is clinically important because, while most patients adapt psychologically, an important minority still experience substantial emotional distress. This can tilt them into depression, anxiety, sexual dysfunction, social withdrawal and even suicidal tendencies. Studies have shown that sexual

dysfunction, especially erectile dysfunction, is prevalent among men with genital warts [13,29]. The finding in this study is further supported by previous research, which reported that adolescents and young adults with sexually transmitted infections usually experience some shame and stigma, and this has been linked to low self-esteem [25,30]. Data are scarce on the impact of anogenital warts on the self-esteem of patients affected with the disease in Nigeria, hence the importance of the findings in this study.

About half of the participants in this study had a moderate to large effect on their quality of life, while 4.3% participants had an extremely large effect. This depicts that anogenital warts are not merely cosmetic lesions; they negatively impact an individual's social interactions, daily functions, and sexual relationships. This is consistent with the findings in previous studies [15,26,31-33]. An interesting finding in this study is that the males reported a higher impact on their quality of life than the females (Table 3). This is in contrast with the report from previous similar studies, where female gender was found to have a greater impact on their quality of life [15,32]. This suggests that males are becoming more concerned about their sexual health and attractiveness. The greater use of psychoactive substances (weed), tobacco, and alcohol among the male participants in this study puts them at a greater risk of more severe infection with HPV, which can negatively impact their quality of life.

The DQLI domain mostly affected in this study is the symptom and feelings domain. This is because patients frequently experience shame, embarrassment, and fear of societal or partner's judgement. This is consistent with the findings in previous studies, where this domain showed the highest impairment [15]. Personal relationship is the next domain affected, this is of clinical importance because anogenital warts have a great negative impact on marital and sexual relationships, and several studies have reported sexual symptoms leading to some erectile dysfunction in men with anogenital warts [13,34].

The daily activities, leisure activities, work and school, and treatment domains had a median score of 0 each. This is in line with the report by Sagar et al (2024), who also found lower scores in these domains [15]. This implies that the disease does not significantly impact activities like shopping, routine house tasks, sporting activities, or occupational activities among participants in this study. This is so because the lesions are located in areas of the body that are hidden and not easily noticeable to the public. This shows that the burden of anogenital warts is more psychological, rather than physical, hence the importance of properly evaluating the impact of the disease on the patients' psychology.

In Nigeria, particularly in the Southwest, where sexually transmitted infections are judged to be associated with promiscuity, infidelity and moral failure, most patients with STIs experience shame, embarrassment, fear of disclosure, social stigma and relationship anxiety. Therefore, the findings in this study align with the reports of international studies on the damaging effect of anogenital warts on patients' self-worth, self-confidence and future relationship prospects. This societal judgmental attitude if unchecked, can encourage silent transmission within the communities.

CONCLUSION

This study found that few participants had low self-esteem, however, anogenital warts had a substantial negative impact on their quality of life, with about half of them experiencing

a moderate to extremely large impact. This further reiterates the global finding that anogenital warts are not just a benign dermatological condition, but a disease of important psychological, sexual and social consequences. This burden is even worse in Nigeria, where STI-related stigma is exaggerated; therefore, management of genital warts should go beyond lesion clearance, but incorporate psychological assessment, counselling, and sexual health education.

Limitation: Recall bias and social desirability bias

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Data Availability: All data supporting the findings of this study may be made available by the corresponding author upon request.

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