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Effectiveness of Health Education Programs in Preventing Communicable Diseases in College of Education, Warri Delta State

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ABSTRACT

The study assessed the effectiveness of health education programs in preventing communicable diseases among students at the College of Education, Warri, Delta State. The research focused on three core strategies: health awareness campaigns, workshops and seminars, and peer education programs, aiming to determine their impact on students' knowledge and preventive behaviors. A cross-sectional survey design was employed, with 60 students randomly selected from three academic levels (NCE Levels 100, 200, and 300). Data were collected using structured questionnaires and analyzed using SPSS version 27, with regression analysis applied to test the hypotheses at a 0.05 significance level. The findings revealed that all three strategies significantly improved students' awareness and adoption of preventive measures, with health awareness campaigns showing the strongest influence. Workshops and seminars provided practical insights into disease prevention, while peer education programs effectively encouraged knowledge sharing and behavioral change among students. Based on these results, the study recommended institutionalizing comprehensive health education programs, leveraging digital platforms for broader outreach, and enhancing peer educator training to maximize program effectiveness.

Keywords: communicable diseases, students, health awareness campaigns

INTRODUCTION

The spread of communicable diseases within schools presents a significant public health concern, as schools are often environments where young individuals gather in close proximity, facilitating the rapid transmission of infectious agents. The risk is heightened in schools with overcrowded classrooms, inadequate sanitation, and poor hygiene practices. According to the Centre for Disease Control and Prevention (CDCP, 2020), communicable diseases, caused by bacteria, viruses, and fungi, can spread easily in group settings like schools. This makes health education particularly crucial in mitigating the spread of these diseases.

In countries with underdeveloped health systems, the situation is often exacerbated by socioeconomic challenges, as evidenced in Karachi, Pakistan. In this megacity, overcrowded settlements with poor

sanitation and inadequate health education create favorable conditions for the spread of diseases such as tuberculosis (TB), hepatitis, and dengue. Research by Rabbani, Hashmani, and Khuwaja (2014) found that Karachi has one of the highest rates of hepatitis C in the Asia-Pacific region, a direct consequence of the lack of effective health education and public awareness about disease prevention. In these low-resource settings, poor hygiene and inadequate awareness about communicable diseases make it increasingly difficult to control their spread.

Similarly, the role of health education in raising awareness about disease prevention cannot be overstated. Health education is widely recognized as a fundamental tool for reducing the incidence of communicable diseases by changing behavior and improving knowledge. As noted by Kristina et al. (2023), the primary reason behind the high incidence of infectious/communicable diseases is the lack of knowledge and preventive behavior among communities. Their study findings shows that health education interventions, such as counseling and workshops, can significantly improve knowledge and attitudes towards preventive practices. For instance, after receiving health counseling, participants showed a 30% improvement in their preventive actions and awareness regarding disease transmission.

In countries like Lebanon, where public health campaigns have been implemented, the effectiveness of health awareness initiatives in schools has been documented. A study by Moussi et al. (2024) on a school health awareness campaign in Lebanon also shows that such interventions led to a significant increase in students' health knowledge. After participating in the campaign, students exhibited improved awareness in areas such as hygiene, nutrition, and disease prevention.

At the College of Education like any other higher institution in Nigeria, limited health education contributes to challenges in preventing communicable diseases among students. Despite ongoing efforts such as immunization campaigns, the lack of comprehensive health education continues to hinder effective disease prevention. This is concerning, as students often live in shared accommodations, such as hostels, where close proximity can facilitate the transmission of infections. Research by UNESCO (2008) emphasized the importance of addressing health education in educational institutions, through comprehensive strategies to mitigate disease transmission. Furthermore, Okechukwu and Oboshi (2021) suggest that inadequate hygiene practices, combined with limited health education, can exacerbate the spread of communicable diseases in higher education settings. To address these challenges, this study focuses on evaluating the effectiveness of health awareness campaigns, workshops and seminars, and peer education programs as strategies to increase students' knowledge of communicable diseases and promote preventive measures. Health awareness campaigns, which have been shown to improve public awareness about disease transmission (Budreviciute et al., 2020), are essential in educating students about preventive practices such as hand hygiene, vaccination, and the use of protective measures. Similarly, workshops and seminars have been shown to be effective in improving knowledge and changing attitudes towards disease prevention (Kristina et al., 2023), particularly when they involve interactive learning and community engagement. Peer education programs, which rely on students teaching their peers, have also proven successful in spreading health-related information and promoting behavioral change (Manli et al., 2018).

The research questions for this study are: (1) How effective are health awareness campaigns in increasing awareness about communicable diseases and their prevention among students at the College of Education, Warri? (2) What impact do workshops and seminars have on the knowledge of communicable diseases and their prevention among students at the College of Education, Warri? (3) How effective are peer education programs in spreading knowledge about communicable diseases and promoting prevention practices among students at the College of Education, Warri?

Aim and Objectives of the Research

The aim of this study is to evaluate the Effectiveness of Health Education Programs in Preventing Communicable Diseases in College of Education, Warri Delta State. Specifically, the objectives of the study are to;

i. evaluate the effectiveness of health awareness campaigns about communicable diseases and their prevention among students of College of Education Warri.
ii. assess the impact of workshops and seminars on students' knowledge of communicable diseases and their prevention at College of Education Warri.

iii. examine the effectiveness of peer education programs in spreading knowledge about communicable diseases and prevention among students of College of Education Warri.

Hypotheses:

H_{01}: Health awareness campaigns have no significant effect on increasing awareness about communicable diseases and their prevention among students of College of Education Warri.

H_{02}: Workshops and seminars have no significant impact on the knowledge of communicable diseases and their prevention among students of College of Education Warri.

H_{03}: Peer education programs have no significant effect on spreading knowledge about communicable diseases and promoting prevention practices among students of College of Education Warri.

MATERIALS AND METHODS

This study adopted a cross-sectional survey design to assess the effectiveness of health education programs in preventing communicable diseases among students at the College of Education, Warri, Delta State. The sample comprised 60 students enrolled in the National Certificate in Education (NCE) programme, selected through simple random sampling from three academic levels: 20 students from Level 100, 20 students from Level 200, and 20 students from Level 300. Data were collected using a structured questionnaire designed to evaluate the effectiveness of health awareness campaigns, workshops and seminars, and peer education programs. The questionnaire contained four sections: health awareness campaigns, workshops and seminars, peer education programs, and preventive measures for communicable diseases, with each section consisting of five items. Participants responded to statements using a 4-point Likert scale (Strongly Agree, Agree, Disagree, Strongly Disagree). Data collection was conducted during the second semester of the 2023/2024 academic session, with informed consent obtained from all participants. The questionnaires were administered in person by trained research assistants during scheduled class times, and students were given approximately 15–20 minutes to complete the survey. Data were analyzed using descriptive statistics (frequencies, percentages, and mean. Aany mean that is above 2.5 is Accepted , while less than 2.5 is rejected. Linear regression was used to testy the hypotheses with 0.05 significant alpha level in SPSS version 27 to test the significance of differences between responses across the three academic levels.

DATA ANALYSIS AND DISCUSSION

Research Question 1: *How effective are health awareness campaigns in increasing awareness about communicable diseases and their prevention among students at the College of Education, Warri?*

Table 1. Effectiveness of Health awareness campaigns in increasing awareness about communicable diseases and their prevention among students at the College of Education, Warri

S/N	Items	Mean	Std. Deviation	Remark
1	The health awareness campaigns, including posters, videos, and social media, have increased my knowledge about communicable diseases.	3.0000	0.88298	Accepted
2	The health awareness campaigns I have seen (posters, videos, and social media) helped me understand how to prevent communicable diseases.	2.9833	0.83345	Accepted
3	The posters, videos, and social media campaigns I've encountered around campus made me more aware of the symptoms of common communicable diseases.	2.9333	0.75614	Accepted
4	The health awareness campaigns, including all the materials shared, have encouraged me to practice better hygiene to avoid communicable diseases.	3.0000	0.80254	Accepted
5	The health awareness materials (such as posters, videos, and social media messages) have motivated me to take preventive actions against communicable diseases.	2.8667	0.79119	Accepted

Grand Mean: 14.7833
Benchmark = 2.50
Source: SPSS Analysis 27

All the items related to health awareness campaigns have mean ratings above the benchmark of 2.50, indicating that the majority of the students agree that these campaigns have been effective in increasing their awareness of communicable diseases and promoting prevention practices. The standard deviations range from 0.75614 to 0.88298, showing moderate variability in the responses. While most students agree with the effectiveness of health awareness campaigns, there is some variability in the strength of their agreement. The Grand Mean for all the items combined is 14.7833, which is above the benchmark value (2.50 per item) for the 4-point scale. This suggests a generally positive perception of the effectiveness of health awareness campaigns in increasing knowledge and promoting preventative actions against communicable diseases. All items were rated Accepted based on the mean ratings being above 2.50, indicating that students generally acknowledge the positive impact of health awareness campaigns on their knowledge and preventive behaviors concerning communicable diseases.

The health awareness campaigns (including posters, videos, and social media) at the College of Education, Warri, have proven to be effective in increasing student awareness about communicable diseases and encouraging preventive measures. The high mean scores and the overall positive reception suggest that these campaigns have been successful in achieving their goals.

Research Question 2: *What impact do workshops and seminars have on the knowledge of communicable diseases and their prevention among students at the College of Education, Warri?*

Table 2. Impact of workshops and seminars on the knowledge of communicable diseases and their prevention among students at the College of Education, Warri

S/N	Items	Mean	Std. Deviation	Remark
1	The workshops and seminars I attended provided useful information on how to prevent communicable diseases.	3.0000	0.75913	Accepted
2	The seminars and workshops helped me understand how communicable diseases are spread and how to protect myself.	2.9833	0.81286	Accepted
3	After attending the workshops and seminars, I feel more confident in taking steps to prevent communicable diseases.	2.8333	0.82681	Accepted
4	The workshops and seminars provided practical advice that I have started using in my daily life to prevent communicable diseases.	2.9000	0.89632	Accepted
5	The workshops and seminars have made me more aware of the importance of vaccinations in preventing communicable diseases.	3.0333	0.90135	Accepted

Grand Mean 14.75

Benchmark = 2.50 Source: SPSS Analysis

All the items related to the workshops and seminars have mean ratings above the benchmark of 2.50, indicating that the majority of students agree that these sessions have positively impacted their knowledge about communicable diseases and their prevention. The standard deviations range from 0.75913 to 0.90135, showing moderate variability in the responses. While most students agree on the effectiveness of the workshops and seminars, there is some variability in the strength of their agreement. The Grand Mean for all the items combined is 14.75, which is well above the benchmark value (2.50 per item) for the 5-point scale. This suggests a generally positive perception of the effectiveness of workshops and seminars in enhancing knowledge and promoting preventive actions regarding communicable diseases. The workshops and seminars, have had a positive impact on students' understanding of communicable diseases and their prevention. The high mean scores across all items indicate that these sessions were successful in increasing awareness, building confidence in taking preventive measures. Despite some variability in responses, the findings suggest that the workshops and seminars were effective in achieving their goals.

Research Question 3: *How effective are peer education programs in spreading knowledge about communicable diseases and promoting prevention practices among students at the College of Education, Warri?*

Table 3. Effectiveness of peer education programs in spreading knowledge about communicable diseases and promoting prevention practices among students at the College of Education, Warri

S/N	Items	Mean	Std. Deviation	Remark
1	The peer education programs I participated in helped me better understand how to prevent communicable diseases.	2.9833	0.83345	Accepted
2	The peer educators I interacted with shared important knowledge that I now use to protect myself from communicable diseases.	2.9667	0.90135	Accepted
3	Through the peer education programs, I became more confident in talking about communicable diseases with my friends and family.	2.8167	0.89237	Accepted
4	The peer education sessions motivated me to adopt healthier behaviors to prevent communicable diseases.	2.8000	0.83969	Accepted
5	The information provided by peer educators has encouraged me to educate others about communicable disease prevention.	2.7500	0.87576	Accepted

Grand Mean
14.3167

Benchmark = 2.50

Source: SPSS Analysis

All the items related to peer education programs have mean ratings above the benchmark of 2.50, indicating that the majority of students agree that the programs have positively influenced their knowledge of communicable diseases and their prevention. The standard deviations range from 0.83345 to 0.90135, showing moderate variability in the responses. This suggests that while most students found the peer education programs beneficial, there is some variation in how strongly they agreed with the effectiveness of the programs. The Grand Mean for all the items combined is 14.3167, which is above the benchmark value (2.50 per item) for the 4-point scale. This indicates a generally positive perception of the effectiveness of peer education programs in spreading knowledge about communicable diseases and promoting preventive behaviors. The peer education programs had a positive impact on students' understanding of communicable diseases and their prevention. The high mean scores across all items suggest that the programmes were successful in increasing students' awareness, building confidence in discussing communicable diseases, and motivating them to adopt healthier behaviors. Furthermore, the programs also encouraged students to share knowledge with others, amplifying the effect. While there is some variability in responses, the findings suggest that the peer education programs were effective in achieving their goals.

Hypothesis ($H_0$1): Health awareness campaigns have no significant effect on increasing awareness about communicable diseases and their prevention among students of College of Education Warri.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.606	.907		-1.771	.082
	Health_Edu_Prog_Total	1.695	.059	.966	28.579	.000

a. Dependent Variable: Preven_Comm_Dis_Total

Table above presents the regression analysis results for the relationship between health awareness campaigns (Health Education Program Total) and awareness about the prevention of communicable

diseases (Prevention of Communicable Diseases Total). The analysis was conducted to determine if a significant relationship exists between these two variables. The unstandardized coefficient (B) for the Health Education Program Total is 1.695, which implies that for every 1-unit increase in the Health Education Program, the awareness about the prevention of communicable diseases increases by 1.695 units. The standardized coefficient (Beta) is 0.966, indicating a very strong positive relationship between the Health Education Program and awareness of communicable disease prevention. This suggests that the Health Education Program is a very strong predictor of awareness about communicable diseases. The t-value is 28.579, which is exceptionally high, indicating that the coefficient is large enough to be statistically significant. The p-value is 0.000, which is far below the standard significance threshold of 0.05, confirming that the relationship is statistically significant. Confidence Interval for B: The confidence interval for the unstandardized coefficient (B) ranges from 1.577 to 1.813, and since this range does not include 0, it further supports the claim that the relationship between health education programs and awareness about communicable disease prevention is statistically significant. Since the p-value is 0.000, which is less than the significance level of 0.05, we reject the null hypothesis (H_{01}) that health awareness campaigns have no significant effect on awareness about communicable diseases. Therefore, we conclude that health awareness campaigns significantly increase awareness about communicable diseases and their prevention among students at the College of Education Warri.

Hypothesis ($H_0$2): Workshops and seminars have no significant impact on the knowledge of communicable diseases and their prevention among students of College of Education Warri.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.959	.711		-2.756	.008
	Workshops_Semina_Total	1.723	.047	.979	36.971	.000

a. Dependent Variable: Preven_Comm_Dis_Total

The table above presents the regression analysis results for the relationship between workshops and seminars (Workshops_Semina_Total) and students' knowledge of communicable diseases and their prevention (Prevention of Communicable Diseases Total). The analysis was conducted to determine if a significant relationship exists between these two variables. The unstandardized coefficient (B) for the Workshops and Seminars Total is 1.723, which implies that for every 1-unit increase in the Workshops and Seminars score, the knowledge about the prevention of communicable diseases increases by 1.723 units. The standardized coefficient (Beta) is 0.979, indicating a very strong positive relationship between the Workshops and Seminars and knowledge of communicable disease prevention. This suggests that workshops and seminars are a very strong predictor of knowledge about communicable diseases. The t-value is 36.971, which is exceptionally high, indicating that the coefficient is large enough to be statistically significant. The p-value is 0.000, which is far below the standard significance threshold of 0.05, confirming that the relationship is statistically significant. Since the p-value is 0.000, which is less than the significance level of 0.05, we reject the null hypothesis (H_{02}) that workshops and seminars have no significant impact on knowledge about communicable diseases. Therefore, we conclude that workshops and seminars significantly increase knowledge about communicable diseases and their prevention among students at the College of Education Warri.

Hypothesis ($H_0$3): Peer education programs have no significant effect on spreading knowledge about communicable diseases and promoting prevention practices among students of College of Education Warri.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.235	.511		.460	.647
	Peer_Edu_Prog_Total	1.622	.034	.987	47.282	.000

a. Dependent Variable: Preven_Comm_Dis_Total

The table above presents the regression analysis results for the relationship between peer education programs (Peer Education Program Total) and spreading knowledge about communicable diseases and promoting prevention practices (Prevention of Communicable Diseases Total). The analysis was conducted to determine if a significant relationship exists between these two variables. The unstandardized coefficient (B) for the Peer Education Program Total is 1.622, which implies that for every 1-unit increase in the Peer Education Program, the knowledge about communicable diseases and their prevention increases by 1.622 units. The standardized coefficient (Beta) is 0.987, indicating a very strong positive relationship between the Peer Education Program and the spread of knowledge about communicable diseases. This suggests that the Peer Education Program is a very strong predictor of knowledge about communicable diseases and prevention practices. The t-value is 47.282, which is exceptionally high, indicating that the coefficient is large enough to be statistically significant. The p-value is 0.000, which is far below the standard significance threshold of 0.05, confirming that the relationship is statistically significant. Since the p-value is 0.000, which is less than the significance level of 0.05, we reject the null hypothesis (H_{03}) that peer education programs have no significant effect on spreading knowledge about communicable diseases and promoting prevention practices. Therefore, we conclude that peer education programs significantly contribute to spreading knowledge about communicable diseases and promoting prevention practices among students at the College of Education Warri.

DISCUSSION OF FINDINGS

This study assessed the effectiveness of health education programs in preventing communicable diseases among students at the College of Education, Warri, Delta State. Three hypotheses were formulated and tested using regression analysis at a 0.05 significance level.

The findings from the first hypothesis revealed a significant positive relationship between health awareness campaigns and increased awareness of communicable diseases and their prevention. The regression analysis results ($B = 1.695$, $p < 0.001$) indicate that health awareness campaigns, which utilized materials such as posters, videos, and social media, effectively enhanced students' knowledge of disease prevention practices. These findings are in consonance with the findings of Kristina et al. (2023), were in their result shows that there is effectiveness of health education interventions in improving public knowledge and attitudes toward infectious disease prevention. Likewise, Budreviciute et al. (2020) shows that the value of awareness campaigns in increasing adherence to hygiene practices and vaccination uptake. However, while these campaigns were positively received, the variability in student responses points the need to tailor messages to diverse audience segments for greater inclusivity and impact.

The second hypothesis examined the impact of workshops and seminars on knowledge about communicable diseases. The results showed a strong positive relationship, with workshops and seminars significantly increasing knowledge ($B = 1.723$, $p < 0.001$). Students reported improved understanding of disease transmission and preventive measures after attending these sessions. These results are consistent with findings by Manli et al. (2018), who observed similar benefits of interactive health education approaches in China. Furthermore, practical demonstrations during workshops have been found to

encourage sustainable behavioral changes, as noted by Okechukwu and Oboshi (2021). Nevertheless, the variability in responses suggests potential challenges in maintaining student engagement across different academic levels, which calls for innovative delivery methods to maximize impact.

The third hypothesis evaluated the effectiveness of peer education programs in spreading knowledge and promoting preventive practices. The findings indicated a significant positive relationship, with peer education programs being a strong predictor of knowledge dissemination and behavior change ($B = 1.622$, $p < 0.001$). These programs encouraged students not only to adopt preventive measures but also to share knowledge with their peers, amplifying the reach of health education initiatives. Similar to findings by Moussi et al. (2024), peer-led interventions were shown to foster collaborative learning environments and empower students to take proactive roles in public health education. However, as noted in previous studies, the success of peer education programs heavily depends on the training and commitment of peer educators, emphasizing the importance of continuous capacity-building efforts. In summary, the study confirms that health awareness campaigns, workshops and seminars, and peer education programmes are effective strategies for preventing communicable diseases among students.

CONCLUSION

This study evaluated the effectiveness of health education programs—health awareness campaigns, workshops and seminars, and peer education programs—in preventing communicable diseases among students at the College of Education, Warri, Delta State. The findings demonstrated that all three strategies significantly enhanced students' knowledge, awareness, and preventive behaviors regarding communicable diseases. Health awareness campaigns were particularly effective in promoting hygiene practices and preventive measures, while workshops and seminars provided a deeper understanding of disease transmission and protection strategies. Peer education programs further reinforced these efforts by encouraging students to share knowledge and adopt healthier behaviors.

RECOMMENDATIONS

Based on the findings, the following recommendations are proposed:

1. Institutionalization of health education programmes should be implemented through integration of health awareness campaigns, workshops, and peer education into the academic calendar to ensure consistency and continuity.
2. Utilize social media, mobile apps, and other digital tools to complement traditional health education methods, expanding the reach and accessibility of campaigns.
3. Conduct regular training sessions for peer educators to enhance their knowledge and communication skills, ensuring the effectiveness of peer-led interventions.
4. Workshops and seminars should incorporate interactive methods, such as role-playing and hands-on demonstrations, to sustain engagement and improve knowledge retention among students.
5. The institution and others should partner with public health agencies to provide up-to-date information, resources, and vaccines, thereby reinforcing the effectiveness of health education initiatives.

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