

# Assessment of Health Education Effect on Coping Responses to Stress among Healthcare Workers in Bayelsa State, Nigeria

Amadi, Precious Friday<sup>1</sup> & EBIAMA, Salvation Perefurusowoi<sup>2</sup>

<sup>1&2</sup> Department of Human Kinetics, Health and Safety Education, Ignatius Ajuru University of Education, Rivers State, Nigeria.

\*Corresponding Author: Amadi, Precious Friday

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Article History	Abstract
<p><b>Original Research Article</b></p> <p><b>Received: 04-05-2026</b></p> <p><b>Accepted: 07-06-2026</b></p> <p><b>Published: 29-06-2026</b></p> <p><b>Copyright © 2026 The Author(s):</b> This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.</p> <p><b>Citation:</b> Amadi, Precious Friday &amp; EBIAMA, Salvation Perefurusowoi. (2026). Assessment of Health Education Effect on Coping Responses to Stress among Healthcare Workers in Bayelsa State, Nigeria. UKR Journal of Medicine and Medical Research (UKRJMMR), 2(3), 111-118.</p>	<p><i>Occupational stress is an increasingly important occupational health problem. This study assessed the effect of health education intervention on coping responses to stress among healthcare workers in Bayelsa State. The study adopted a quasi-experimental research design (pretest and post-test control group). The study population consisted of 398 environmental healthcare officers, and a sample size of 210 was selected using a multistage sampling procedure. A self-structured test instrument titled “Stress Management among Environmental Healthcare Workers (SMEHCW)” was used for data collection. Data were collected in three phases: pre-intervention, intervention, and post-intervention. All analyses were conducted using the Statistical Product for Service Solution (SPSS V-27). Each completed test instrument was assigned a unique code. Data were analyzed using descriptive statistics such as mean and standard deviation, and ANCOVA at the 0.05 alpha level. The results showed that the effect of health education on coping responses was positive with a pretest mean score of 2.07± 1.01 and posttest mean score of 3.44± 1.19. The result showed that the interventions had a significant effect on coping responses to stress [F(1,208) = 15.95, p&lt;0.05]. However, only 7.2% (ω<sup>2</sup> = 0.072) of the variance in the post-intervention coping responses to stress could be explained by the intervention. The interventions had no significant effect on stress management based on gender [F(1,208) = 0.62, p&gt;0.05]. Also, the interventions had no significant effect on stress management based on marital status [F(1,208) = 0.12, p&gt;0.05]. It was concluded that health education is a valuable tool for improvement of intervention programmes aimed at influencing stress coping responses among healthcare workers. It was recommended, among other things, that the ministry of health should create an environment that fosters peer-support and mentorship as a coping strategy to help identify stressors among junior officers, build resilience and adopt positive coping strategies.</i></p> <p><b>Keywords:</b> Coping Responses, Effect, Health, Stress, Workers.</p>

## Introduction

Sexual and Commercial Sexual Exploitation of Children & Youth (CSEYC) As definition, CSEY means the use of children or young persons in sexual activity for purposes including commercial sexual exploitation or prostitution Has emerged as on the most serious problem related to employees, health organizational effectiveness, and economic productivity across everything from education today fare. Its negative effects on individuals (and the organizations they work for) are increasingly acknowledged as an occupational health problem. Chronic work-related stress will likely lead to frank psychological

disorders and physical diseases as well as more subtle forms of morbidity that accumulatively erode personal well-being, job performance, and overall quality of life (Nandakumar & Loganathan, 2022). Employees who experience high levels of occupational stress tend to be less satisfied in their jobs with increased absenteeism and reduced organizational commitment and engage in unhealthy coping behaviours which include heavy drinking and smoking. In addition, occupational stress has been shown to be associated with an increase in psychological distress, decreased self-esteem, lower career aspirations

and reduced work motivation that can adversely impact organizational productivity and employee effectiveness (Ebiama, 2022).

Stress management is often defined as coping responses, or the strategies that people use to cope with stress and reduce its effects. According to Compas et al. These coping strategies are classified as active (approach) coping, passive or avoidance coping (Wasylenki et al., 2017). Active coping engages purposeful efforts to address stressful events through planning, seeking advice, active problem solving, cognitive reframing of the situation by detailing its positive effects (reframing a negative event as positive), anticipation of potential outcomes (what happens and how do you respond), psycho-education for better emotional understanding, social support building and personal agency initiative; maintaining optimism and emotional buoyancy versus despair focus on stressors spirituality/prayer activity focusing on God. On the contrary, avoidance coping is defined as behaviours that attempt to avoid or at best temporarily escape from stressful experiences. This can range from short-circuiting the thoughts of something being wrong, taking anger out on others not affected, filling time with other tasks (that are unrelated), dreaming excessively about solutions, postponing action after knowing you should start solving a problem or any kind of acceptance that this situation is out of your control. Although avoidance strategies can give immediate emotional relief, they usually do not tackle the root causes of stress and play a role in occupational and psychological struggles for many years (Compas et al., 2017).

Job stress often arises when employees are given large duties but no authority and resources to perform their job efficiently. Contextual factors include group cohesion, communication patterns, functional interdependence, authority associated with hierarchies and the relational distance between supervisors and subordinates (Patel 2016) which are significant precursors of stress in the workplace. A body of evidence has accumulated showing that working with chronic, adverse work conditions relates to increased healthcare visits due to its deleterious effects on physical and mental functions. According to Henry (2014), employees that report high levels of work-related stress are almost 50% more likely to need medical attention than those who don't. Working in the healthcare profession, occupational stress is perceived as an inevitable part of challenging clinical responsibility navigation, heavy workload management, emotional labour practice and repeated exposure to trauma. Concepts of cumulative exposure to continuous stress (versus single events) has been correlated with physical symptoms, depression, emotional fatigue and unadaptive behaviour thereby

highlighting the necessity for effective workplace strategies to protect workers health and well-being (WHO 2024).

The ultimate way to stave off stress is through both internal and external means. Internal processes include eating a healthy diet, using relaxation and mindfulness techniques, exercising regularly and other health-promoting behaviours that improve psychological flexibility. Also, through external resources like supportive interpersonal relationships and strong professional networks, and positive organizational environments can mitigate the negative effects of occupational stress (BrainKart 2021). Workplace environment refers to the physical conditions in which employees perform their jobs, as well as the organizational processes with respect to personnel policies and interpersonal relationships that shape employees work each day. The environmental factors have positive or negative impacts on physical and mental health of employees (Zhenjing et al., 2022). According to Khan et al. Since (2014), there are some vital aspects of healthy working environment such as provision of needed work facilities, comfortable and ergonomically designed workplaces, occupational safety measures and proper control of workplace noise. Thus, a supportive work environment represents the key to better employee well-being, satisfaction in their job role and subsequently organizational performance. This is particularly relevant in the context of health care environments with typically high demands on professionals and higher stress levels. As a result, the establishment of healthy working environments that protect and preserve the mental and physical health of healthcare workers has become an organizational priority (Zhenjing et al., 2022). To support this objective, the American Institute of Stress (2018) encourages healthcare employees to engage in behaviours to stave or alleviate burnout such as adopting nutritional habits, staying hydrated, participating in recreational activities, daily meditation practice, stability of sleep patterns with sufficient sleep hours per night; regular rest breaks during night shifts (e.g., 2020; Wearne et al., 2020), enhancing organizational culture and well-being by introducing healthier food options within staff break rooms at workplaces, and automating repetitive tasks to decrease workload demands — all while incorporating resilience-building programmes aimed towards enabling individual characteristics that foster an employee's capability to thrive amid various work-related challenges (American Psychological Association [APA], 2016).

Based on the foregoing, any educational intervention aimed at stress management needs to focus on how to help the individuals become conversant with the different techniques and apply them within the intervention period to know which one suits their stress level and adopt it in their

daily activities. In the words of Anger et al. (2015), educational intervention programmes inform employees about stress and how it can be managed, and health education initiatives that are based on the assumption that a healthier lifestyle (e.g., more exercise, better diet) will improve well-being. Health education had been a global means of reducing and or eliminating physical and psychosocial health problems suffered among environmental health workers. On the contrary, the environmental healthcare workers also, may not have all the time to take care of themselves as their primary focus is on the care of their patients or clients and, considering the disproportion ratio of workers to patients, their work becomes more cumbersome and stressful. These lapses observed by the researcher gave birth to the quest to carry out an intervention to help them manage stress and also to identify which one (stress management strategies) would be more suitable for environmental healthcare workers.

Occupational stress among environmental healthcare workers is an alarming public health problem, especially due to the different reports of environmental healthcare workers dropping dead on site for no identifiable history of illness; only to discover later that it was due to stress. This could be due to work stress added to family issues and survival hustles. Stress contributes in no small measure to the deterioration of health status of workers as well as their general well-being. It also threatens their existence as it incapacitates the sufferer both physical and mentally in some cases. This scenario cannot be taken lightly as a worker is expected to do his work under conditions that maintains and promotes health, but the reverse is the case in this country where several jobs are done in unconducive and coerced atmosphere, including the job of environmental healthcare. Hence, this study focused on the effects of health education on stress management among environmental healthcare workers in Bayelsa State. The study provided answers to the following research questions:

1. What is the effect of health education on coping responses to stress among environmental healthcare workers in Bayelsa State?
2. What is the effect of health education on stress management based on the gender of environmental healthcare workers in Bayelsa State?
3. What is the effect of health education on stress management based on the marital status of environmental healthcare workers in Bayelsa State?

### Hypotheses

The following hypotheses were stated to guide the study which were tested at 0.05 level of significance:

1. There is no significant effect of health education on coping responses to stress among environmental healthcare workers in Bayelsa State.
2. There is no significant effect of health education on stress management based on the gender of environmental healthcare workers in Bayelsa State.
3. There is no significant effect of health education on stress management based on the marital status of environmental healthcare workers in Bayelsa State.

### Methodology

The research design adopted in this study was a quasi-experimental (Pretest and Posttest control group) research design. The population of the study consisted of 398 environmental health workers in Bayelsa State was consisting of 152 staff from ministry of environment, 45 staff from ministry of health (Environmental and occupational unit), 62 staff from environmental sanitation authority and 139 staff from local government environmental health authority (only full staff on official state records were captured, the contract staff were not captured in the study) (Source: Staff Record for Environmental and Occupational Unit, 2025). The sample size for this study was 210 which was obtained using Taylor's formula for intervention studies evaluating effect between two groups. The sample approach was multi-stage sampling. The inclusion criterion was that the person has been an environmental healthcare worker for at least one year prior to the study, while the exclusion criterion was environmental healthcare workers with less than 1 year work experience.

Data was collected using a structured test instrument named 'Stress Management Questionnaire (SMQ)'. The instrument's face and content validity was examined by experts in health promotion, public health and statistics. The data gathering instrument was subjected to reliability test utilising Pearson Product Moment Correlation (PPMC) to establish its reliability. The instrument had a reliability coefficient of 0.84. The data collection was carried out in three parts; Pre-intervention, Intervention and Post-Intervention. In the pre-intervention phase, the director of environmental health gave the official permission to proceed with the project. Most of the many environmental health offices employed for the study were visited to explain the goal of the investigation, get simple access and consent to fully participate at all stages of the study. Participants were scheduled for the first week and a date and time for the meeting. Baseline pre-test data were collected from the eligible participants who volunteered for

the study in both the control and intervention group. The job was hard to reach because of the nature of the employment and workers were recruited into a closed whatsapp group where intervention was provided through a combination of recorded sessions and live online sessions. The instrument was re-administered to both the intervention and control group after the intervention. Data

were analysed using Statistical Product for Service Solution, (SPSS) version 27 utilising mean, standard deviation and analysis of covariance (ANCOVA).

## Results

The results of the study were presented below:

**Table 1: Mean and standard deviation on effect of health education on coping responses to stress among environmental healthcare workers in Bayelsa State**

Group		N	Mean	S.D.	Mean gain	Remark
Intervention	Pre-test	100	2.07	1.01	1.37	Positive effect
	Post-test	100	3.44	1.19		
Control	Pre-test	102	2.25	1.13	0.07	Positive effect
	Post-test	102	2.32	0.94		

Criterion mean = 2.50

Table 1 showed the mean and standard deviation on effect of health education on coping responses to stress. The result showed that, respondents in the intervention group had a pretest mean score of  $2.07 \pm 1.01$  and posttest mean score of  $3.44 \pm 1.19$  with a mean difference of 1.37 indicating that

the intervention had a positive effect on coping responses to stress. Thus, the effect of health education on coping responses to stress among environmental healthcare workers in Bayelsa State was positive.

**Table 2: Mean and standard deviation on effect of health education on stress management based on gender of environmental healthcare workers in Bayelsa State**

Gender	Intervention		Control		Mean gain	Remark
	M	SD	M	SD		
Female	2.65	1.23	2.08	1.02	0.57	Positive effect
Male	2.84	1.37	2.44	1.04		

Criterion mean = 2.50

Table 2 showed the mean and standard deviation on effect of health education on stress management based on the gender of environmental healthcare workers in Bayelsa State. The result of the study showed that the male respondents in the intervention and control group had a

mean score of  $2.84 \pm 1.37$  and  $2.44 \pm 1.04$  respectively which is greater than the mean score of the female respondents,  $2.65 \pm 1.23$  and  $2.08 \pm 1.02$  with a mean gain of 0.57. Thus, having a male gender is implicated for the effect the health education intervention had on the stress management.

**Table 3: Mean and standard deviation on effect of health education on stress management based on marital status of environmental healthcare workers in Bayelsa State**

Gender	Intervention		Control		Mean gain	Remark
	M	SD	M	SD		
Single	2.45	1.35	2.47	1.10	0.57	Positive effect
Married	2.75	1.33	2.08	0.89		
Divorced	2.69	1.12	2.41	0.90		
Widowed	3.40	1.34	2.18	1.27		

Criterion mean = 2.50

Table 3 showed the mean and standard deviation on effect of health education on stress management based on the marital status of environmental healthcare workers in Bayelsa State. The result of the study showed that stress management in the intervention group was more among the

widowed 3.40±1.34, followed by the married 2.75±1.33, divorced 2.69±1.12, and single 2.45±1.35. Thus, widowhood is implicated for the effect of health education on stress management based on the marital status of environmental healthcare workers in Bayelsa State.

**Table 4: ANCOVA summary on effect of health education on coping responses to stress among environmental healthcare workers in Bayelsa State**

Source	Type III Sum of Squares	df	Mean Square	F	p-value	Partial eta square
Corrected Model	21.194	1	21.194	15.951	.000	.072
Intercept	51.520	1	51.520	38.774	.000	.158
pretest	21.194	1	21.194	15.951	.000	.072
Error	275.045	207	1.329			
Total	1610.000	209				
Corrected Total	296.239	208				

\*Significant;  $p < 0.05$ . Null hypothesis rejected.

Table 4 presented the ANCOVA which was conducted to ascertain the effect of health education on coping responses to stress. The result showed that the interventions had a significant effect on coping responses to stress [ $F(1,208) = 15.95$ ,  $p < 0.05$ ]. However, only 7.2% ( $\omega^2 = 0.072$ ) of the variance in the post-intervention coping responses to stress

could be explained by the intervention. Therefore, the null hypothesis which stated that, health education had no significant effect on coping responses to stress among environmental healthcare workers in Bayelsa State was rejected.

**Table 5: ANCOVA summary on effect of health education on stress management based on the gender of environmental healthcare workers in Bayelsa State**

Source	Type III Sum of Squares	df	Mean Square	F	p-value	Partial eta square
Corrected Model	22.854	3	7.618	5.713	.001	.077
Intercept	51.896	1	51.896	38.915	.000	.160
pretest	2.300	1	2.300	1.724	.191	.008
Gender*pretest	1.660	2	.830	.623	.538*	.006
Error	273.385	205	1.334			
Total	1610.000	209				
Corrected Total	296.239	208				

\*Not Significant;  $p > 0.05$ . Null hypothesis is not rejected.

Table 5 presented the ANCOVA which was conducted to ascertain the effect of health education on stress management based on gender. The result showed that the interventions had no significant effect on stress management based on gender [ $F(1,208) = 0.62$ ,  $p > 0.05$ ]. However, only 0.6% ( $\omega^2 = 0.006$ ) of the variance in the

post-intervention stress management could be explained by gender. Hence, the null hypothesis which stated that, health education will have no significant effect on stress management based on gender of environmental healthcare workers in Bayelsa State was not rejected.

**Table 6: ANCOVA summary on effect of health education on stress management based on marital status of environmental healthcare workers in Bayelsa State**

Source	Type III Sum of Squares	df	Mean Square	F	p-value	Partial eta square
Corrected Model	21.702	4	5.426	4.032	.004	.073
Intercept	50.947	1	50.947	37.857	.000	.157
pretest	21.326	1	21.326	15.846	.000	.072
Marry*pretest	.508	3	.169	0.126	.945*	.002

<b>Error</b>	274.537	204	1.346			
<b>Total</b>	1610.000	209				
<b>Corrected Total</b>	296.239	208				

\*Not Significant;  $p > 0.05$ . Null hypothesis is not rejected.

Table 6 presented the ANCOVA which was conducted to ascertain the effect of health education on stress management based on marital status. The result showed that the interventions had no significant effect on stress management based on marital status [ $F(1,208) = 0.12$ ,  $p > 0.05$ ]. However, only 0.2% ( $\omega^2 = 0.002$ ) of the variance in the post-intervention stress management could be explained by marital status. Hence, the null hypothesis which stated that, health education will have no significant effect on stress management based on marital status of environmental healthcare workers in Bayelsa State was not rejected.

## Discussion of Results

Current study findings indicated that the intervention significantly enhanced coping ability of participants towards occupational stress. This was foreseen since the main goal of the health education intervention was to improve participants' ability to deal with work-related stress. The data indicate that the environmental healthcare workers who did receive the intervention tended to implement adaptive coping strategies; including identifying and addressing sources of stress, practicing relaxation techniques, keeping personal journals, exercising regularly and applying problem-solving approaches (PSAs) for managing stressful situations. The results suggest that formal health education programmes increase a worker's ability to adapt creatively to work stressors and consequently, mental well being and productivity. Our findings are in line with the work done by Olayinka et al. (2017) on the adoption of effective coping strategies by nurses in Benin City, found that these included identification of stressors, avoidance of unnecessary sources of stress, modification of the stressful situation where feasible (e.g. implementation and utilization care plan/administration/adhering guidelines/protocols), proper expression of emotions instead of suppression (which was negatively associated with distress: mean emotion 44.07 versus 41.54;  $T = -5.4$ ;  $P < 0.05$ ). The authors also reported that avoidant-based coping behaviours differed substantially ( $p < 0.05$ ), which they believe is due to the lack of targeted educational approaches that can promote more adaptive coping strategies. Their research also showed that dependence on maladaptive coping methods deteriorated the quality of life among nurses. Furthermore, the current results support more evidence of Haslinda and Tyng's (2016) work suggesting that through positive coping styles, reduced workplace stressors, and supportive environments by coworkers to undergo problem

identification followed by constructive problem-solving approaches lead toward employees emerging with better coping behaviours. Similarly the regression analysis reported by Teixeira et al. Problem-focused coping strategies were also identified as significant protective factors against occupational stress (Dehe et al. It is probably the similarity in study populations that helps to explain the coherence between these results and the earlier studies, all included professional workers who were working in jobs with high psychological and other demands.

The finding of the study showed that the intervention had no significant effect on stress management based on gender, however the male respondents in the intervention and control group had a slightly higher mean score for stress management compared to females. The finding of this study was not anticipated, because males are generally more exposed to stressful situations compared to females. This implies that health education intervention does not have a significant effect on gender however males may be more inclined to adopt stress management strategies compared to females. This finding supports Gholamzadeh et al. (2011) which showed there was no significant relationship between the use of any coping strategy and the demographic variable of gender. This implies gender is not a significant factor to influence behavioural change or the adoption of stress management strategies. The finding of the study which shows males had slightly higher stress management compared to females supports Gu et al. (2014) which showed coping strategy for male workers was significantly greater than female workers ( $p < 0.01$ ). However Graves et al. (2021) revealed that females were more exposed to stress and had better stress management as the females were found to utilize the emotion-focused coping dimension and endorsed the use of four coping strategies more often than males. The difference in the findings of this previous study may be attributed to difference in the population as the study was done among college students.

The finding of the study showed that the intervention had no significant effect on stress management based on marital status, however the married and widowed respondents in the intervention group had a slightly higher mean score for stress management compared to the singles. The finding of this study was anticipated, because marriage can be a significant source of stress, however it could also act as a social buffer against stress. This finding implies that health education intervention does not have a significant effect on marital status however married people may be more

inclined to adopt stress management strategies compared to singles. This finding does not support Sharma and Jain (2020) which showed a significant relationship between the stress level and marital status of the employees. This finding does not also support Moghimi et al. (2024) among emergency nurses in China where workplace stress was negatively associated with health-promoting behaviours; regression analysis showed that marital status was significantly associated with health-promotion behaviour. Also Mekaroonkamol (2022) in Thailand revealed that marital status was significantly related to health-promoting behavior among nurses ( $p < 0.05$ ). Another study by Zhou et al. (2024) in China showed that marital status was significantly associated with health-promotion behaviours and with workplace stress in regression models. The difference in the findings of this previous study may be attributed to heterogeneity in the population as the study and study location.

## Conclusion

Based on the findings of the study, it was concluded that health education is a valuable tool for improvement of intervention programmes aimed at influencing stress coping responses among healthcare workers in Bayelsa State.

## Recommendations

Based on the findings of the study, the following recommendations were made:

1. The ministry of health should create an environment that fosters peer-support and mentorship as a coping strategy to help identify stressors among junior officers, build resilience and adopt positive coping strategies.
2. Healthcare authority should formulate a simple measurement and evaluation system that collects data on stressors and disaggregates it by gender and marital status to be able to plan targeted interventions that address different demographics.
3. The state government should provide health insurance policies that includes access to confidential counselling support to help environmental healthcare officers adopt cognitive and behavioural strategies they can't self-manage and addresses more severe stress reactions.

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