

ASSESSMENT OF SAFETY PROCEDURES COMPLIANCE AMONG COMMUNITY HEALTH EXTENSION WORKERS IN NINGI PRIMARY HEALTHCARE CENTRES, BAUCHI STATE

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Abstract

This study assessed the safety procedures compliance among community health extension workers in Ningi primary healthcare centres, Bauch state. Two objectives and their corresponding research questions guided the study. Survey research design was used and the population of the study comprises 1,970 community health extension workers of Ningi primary healthcare centres. A sample of 322 workers were selected using multi-stage sampling. Safety procedures compliance questionnaire (*SPCQ*) was used for data collection. The *SPCQ* was validated by three experts in department of physical and health education and yielded reliability coefficient of 0.78. Mean and standard deviations were used to answer the research questions. The findings revealed that the level of compliance with the personal protective equipment among community health extension workers in Ningi primary healthcare centres was moderate (mean=2.63) and the level of their compliance with the standard precautions measures when attending to patients was also moderate (mean=2.60). It was recommended among others that government and non-governmental organizations should regularly update and encourage training programs on the importance of personal protective equipment (PPE), standard precautionary measures and implement a robust monitoring and evaluation system to ensure consistent adherence to PPE usage.

Keynotes: Safety Procedures, Compliance, Community Health Extension Workers, Primary Healthcare Centres.

Introduction

Occupational safety is a multidisciplinary field concerned with the safety, health, and welfare of people at work (Omar & Mohd-Nordin, 2021). Occupational safety is a discipline also concerned with preserving and protecting human resources in the workplace (Daniel, Utuh & Nwaichi, 2020). In other words, occupational safety involves many specialized fields encompasses the social, mental and physical well-being of whole person in the working environment (Efstathiou, Spiegel & Shipley, 2021; Mogakwe, Magobe & Ally, 2020). Occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards (Omar & Mohd-Nordin, 2021). However, a number of factors affect a worker's health, such as occupational risk factors for cancer, accidents, musculoskeletal disorders, respiratory conditions, hearing loss, circulatory disorders, stress-related disorders, and communicable diseases, among others. (Daniel, Utuh & Nwaichi, 2020).

Safety compliance refers to those fundamental activities that need to be performed by employees according to the occupational, safety and health requirements to ensure a safe

working environment (Rosner, & Markowitz, 2016). It also entails engaging in required behaviours that maintain workplace safety such as observing safety procedures and wearing personal protective safety equipment (Daniel, Utuh & Nwaichi, 2020). Compliance with safety procedures is a standard of meeting all the required legal standards stipulated by the Occupational Health and Safety Act. The purpose of the Act was to shield workers from risks, dangers, accidents, and fatalities. It also stipulates the safe use of machinery and equipment to prevent injury (Salguero-Caparrós, et al., 2020)

Several factors ranging from personal to organizational causes are responsible for non-adherence to the basic principles of universal precautions among healthcare workers. For example, Spiegel and Shipley (2021) reported that the factors that contribute to non-compliance with safety procedures include: lack of knowledge, lack of time, forgetfulness, negative influence of the equipment on nursing skills, uncomfortable equipment, skin irritation and lack of training. Isa, Abdul-wahab, Omar and Mohd-Nordin (2021) further extended these factors to include the management commitments towards safety, availability of safety rules and procedures, safety communication and feedback, the effectiveness of safety training, and the acquisition of safety knowledge that contributes to compliance of safety culture. For Mogakwe, Magobe and Ally (2020), they include worker's non-involvement in decision-making, lack of support and poor internal communication practices.

Community Health Extension Workers (CHEWs) provide both clinical and community-based duties, they also diagnose and treat common conditions with simple but scientifically sound measures. They identify pregnant women and ensure that they deliver safely, identify malnourished children and provide health education in the community and always contribute significantly to improvements of health in the community members. CHEWs are also concerned with mitigating health disparities, as they fight for healthcare equity, quality, and accessibility by bringing healthcare services directly to the doorsteps of citizens, particularly in rural areas (Bauchi State Primary Development Agency, 2024).

CHEWs, by the virtue of their job provide varieties of preventive and curative services to clients and patients and therefore vulnerable to hazards that could be detrimental to their health and well-being. The hospital environment exposes health workers to various occupational hazards, including exposure to infectious agents, needle stick and sharp injuries, muscular skeletal disorders (MSD), exposure ocarcina, latex allergies, violence and stress (Lugah, Ganesh, Darus, Retneswari, Rosnawati & Sujatha, 2017).

The United States Department of Labor (2020) reported that proper compliance with personal protective equipment (PPE) among health workers helps minimize exposure to hazards which may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards that can cause serious injuries and illnesses. PPE includes items such as gloves, safety glasses, protective footwear, earplugs or earmuffs, hard hats, respirators, coveralls, vests, and full-body suits (WHO, 2024). Therefore, all PPE should be safely designed, properly constructed, and maintained in a clean and reliable condition. It should fit

comfortably to encourage worker compliance. Poorly fitting PPE can mean the difference between being safely protected or dangerously exposed. When engineering, work practice, and administrative controls are not feasible or do not provide adequate protection, employers must supply PPE to their workers and ensure its proper use (Kimberly, 2020).

Kalu and Odusanya (2019) reported on their study on standard precautions. The findings revealed that most healthcare community workers (HCWs) do not have knowledge about standard precautions (SP) and that makes it difficult for them to adhere to it. Another study was conducted by Tariku, Eshetu, and Abdella (2017) on compliance with standard precautions and associated factors among healthcare workers in Gondar University comprehensive specialized hospital, Northwest Ethiopia. The study highlighted a need to implement a programme to improve knowledge of SP to prevent occupational accidents. Their findings revealed that some HCWs do not recognize vaccination (19.2%), PEP (19.2%), and surveillance for emerging disease (28%) as SP for infection control.

Statement of the Problem

Prior training on the use of personal protective equipment (PPE), contact with COVID-19 patients, and the performance of procedures that put healthcare workers at high risk of exposure to the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) were all significant predictors of compliance. The significant proportion of non-compliant healthcare workers is a serious worry. It is highly advised to increase PPE availability, give its distribution top priority, improve HCW training, and keep a careful eye on compliance. The researchers used these premises to evaluate community health extension workers' adherence to safety protocols in primary healthcare facilities located in the Ningi local government region in Bauchi State, Nigeria. In light of the aforementioned facts, a general lack of information is partially to blame for Nigeria's low attitude toward and adherence to SP, as well as the resulting high occurrence of occupational accidents.

Objectives of the Study

The general objective of this study was to assess compliance with safety procedures among CHEWs in primary healthcare centres in Ningi Local Government Area, Bauchi State. The specific objectives were to assess:

1. The level of compliance with safety procedure on personal protective equipment among community health extension workers in Ningi primary healthcare centres of Bauchi state.
2. The level of compliance with safety procedure on standard precautionary measures when attending to patients among community health extension workers in Ningi primary healthcare centres of Bauchi state.

Research Questions

The following research questions are raised to guide the study:

1. What is the level of compliance with safety procedure on personal protective equipment among community health extension workers in Ningi primary healthcare centres of Bauchi state?
2. What is the level of compliance with safety procedure on standard precautionary measures when attending to patients among community health extension workers in Ningi primary healthcare centres of Bauchi state?

Methodology

A descriptive survey research design was employed for this study. According to Fake (2022), descriptive survey research design is a design in which group of people are studied by collecting and analyzing data from only a reasonable few people representing the entire group. The design is appropriate for the study because data about compliance with safety procedure were collected from a representative sample of community health extension workers in primary healthcare centers in Ningi LGA of Bauchi State.

The population of the study comprised of the entire 1,970 community health extension workers in primary healthcare centers in Ningi LGA, Bauchi State (Bauchi State Primary Development Agency, 2022). The 322 CHEW samples were selected using multi-stage sampling techniques through the following three stages. Stage I: Clustering Primary Health Care (PHC) centers into three zones; Ningi-North PHCs, Ningi-South PHCs, and Ningi-West PHCs. This stage simplifies the sampling process by creating manageable primary sampling units and is appropriate for minimizing logistical challenges in a wide area (Sisodia, Singh, Sisodia, & Saxena, 2012). Stage II: Simple Random Sampling of PHCs. From each of the three zones identified in Stage I, a simple random sampling technique was used to select three PHCs from each zone making a total of nine PHCs. This stage ensures that each PHC within the defined clusters has an equal chance of being selected, maintaining the probabilistic foundation of the sampling process (Taherdoost, 2016).

Stage III: Proportionate Allocation and Simple Random Sampling of 322 CHEWs. According to Research adviser (2006), for the population of 1,970 and a 5.0% margin of error, a sample size of 322 is recommended. Based on this, total sample size of 322 CHEWs was proportionately selected across the three selected PHCs (PHC-A, 100; PHC-B, 130; PHC-C, 92). This stage is critical for ensuring that the final sample of individual CHEWs is randomly selected, representative of the CHEW population within the sampled PHCs, and contributes to the overall generality of the study findings to the entire 1,970 CHEWs in Ningi LGA (Iliyasu, & Etikan, 2021).

The data were collected using a researcher-developed questionnaire titled Safety procedures compliance questionnaire (*SPCQ*). Questionnaires are highly effective for collecting numerical data from a manageable large number of respondents, which is essential for quantitative research aiming to assess levels of compliance (Dalati, & Marx Gómez, 2018). The *SPCQ* consisted of three sections. Section A comprised five items assessing compliance with personal

protective equipment while, Section B included five items measuring compliance with standard precautionary measures. It was designed on a modified four Likert scale and assigned scores as follows: All the Time=4 points; Most of the Time=3 points; Sometimes=2 points; Not at All=1 point. SPCQ was validated by three experts in the department of human kinetics and health education, Federal University Dutsin Ma. A pilot study was conducted with 20 CHEWs in Ganjuwa LGA Bauchi State and with split-half reliability method, its reliability was also determined. Data collected was subjected to a statistical test using Spearman–Brown prediction formula, and a reliability index of 0.78 was obtained. This indicated that SPCQ was reliable for study (Ellis, 2023).

Mean and standard deviation were used to answer the research questions. The mean provides a single, interpretable score for the overall level, while the standard deviation reveals the vital information about the consistency and variability of that compliance, which is often as important as the average score itself (Ennab, & Mcheick, 2025). Three equal parts of the scale's whole range (from 1 to 4) were taken in order to produce three relevant categories: low, moderate, and high compliance. The range in total is 4–1=3. This is divided by three, which yields a 1.00 interval for every category we have. The mean scores for low, moderate, and high levels of compliance range from 1.00 to 2.00, 2.01 to 3.00, and 3.01 to 4.00, respectively. This categorization is based on a defensible, equal-interval division of the scale's range. It allows for a straightforward interpretation of the results by linking the numerical mean to a descriptive level of compliance (Hutchinson, 2021). Moreover, the acceptance threshold is 2.50 this means that the scores at this point or above this point indicate agreement, while scores below indicted disagreement. Using the mean and standard deviation together provides a robust justification for answering a research question about the level of compliance.

Results

Research question one: What is the level of compliance with safety procedure on personal protective equipment among community health extension workers in Ningi primary healthcare centres of Bauchi state?

Table 1: Compliance Level with Safety Procedure on Personal Protective Equipment

S/N	Items	Mean	SD	Decision
1	I wear hand gloves for protection against the spread of infection or illness	2.57	1.66	Rejected
2	I wear face shields for protection against transmission of contaminants from blood, body fluids, or respiratory secretions	2.47	1.62	Rejected
3	I wear facemasks for protection against transmission of contaminants from respiratory secretions	2.41	1.51	Rejected

4	I wear goggles for protection against injury on my eyes	2.81	1.66	Rejected
5	I wear protective clothing for protection against transmission of contaminants from blood and body Fluids	2.88	1.73	Rejected
Weighted mean		2.63	1.64	

Accepted at 2.50

Table 1 shows that the weighted mean scores of the community health extension workers in primary healthcare centers in Ningi LGA, on compliance with the personal protective equipment was 2.63 and standard deviation of 1.64 which is above the decision mean of 2.50 and at the moderate level of 2 to 3. This indicated that the level of compliance with the personal protective equipment of community health extensions workers in primary healthcare centres in Ningi LGA of Bauchi State is moderate.

Research question two: What is the level of compliance with safety procedure on standard precautionary measures when attending to patients among community health extension workers in Ningi primary healthcare centres of Bauchi state?

Table 2: Compliance level with safety procedure on standard precautionary measures

S/N	Items	Mean	SD	Accepted
1	I use to tolerate patients and their relatives' comments at work	2.63	1.67	Rejected
2	I comply with the standing order of my profession to do my work	2.43	1.64	Rejected
3	I use sterilize the instruments and devices before and after usage	2.44	1.52	Rejected
4	I use to disinfect sharps objects properly after medical use	2.72	1.66	Rejected
5	I use to follow the guide line of injection procedures on patient	2.76	1.69	Rejected
Weighted mean		2.60	1.64	

Accepted at 2.50

The result on table 3 reveals that the aggregate mean scores of the scores of the community health extension workers in primary healthcare centers in Ningi LGA, on compliance with the standard precautions when attending to patients was 2.60 and standard deviation of 1.64, which is above the decision mean of 2.50 and at the moderate level of 2 to 3. This indicated that the level of compliance with the standard precautions when attending to patients of community

health extensions workers in primary healthcare centres in Ningi LGA of Bauchi State is moderate.

Discussion of Findings

The findings of this study revealed that there was moderate level of compliance with the personal protective equipment among community health extension workers in Ningi primary healthcare centres of Bauchi state This finding supports the study of El-Sokkary, El-Kholy, and Mortada (2021) on compliance of healthcare workers with the proper use of personal protective equipment during the first wave of COVID-19 pandemic among Egyptian HCWs. The finding revealed that the majority of healthcare workers moderate level of compliance with proper PPE use.

The findings of this study are also consistent with Alsmeyer (2020). Alsmeyer (2020) studied the increasing compliance of personal protective equipment selection and use for isolation precautions among registered nurse on a medical-surgical nursing unit. The results showed that there was a significant increase in all four analyzed categories, hand hygiene (45% to 70%), selection of PPE (79% to 80%), sequence of putting on PPE (70% to 85%), and sequence of removing PPE (76% to 85%).

The finding of the study also indicated that there was a moderate level of compliance with the standard precautionary measures when attending patients among community health extension workers in Ningi primary healthcare centres of Bauchi state. According to Umeokafor (2017), the main concerns about Occupational Safety and Health Review (OSHR) compliance in the healthcare setting; illustrates the level of OSHR compliance among healthcare professionals. The influence of clients, insufficient enforcement (which rates highest), a lack of proper legislation, and unemployment (which ranks lowest) are the main obstacles to health workers' adherence to OSHR. It came to the conclusion that management commitment in healthcare facilities can aid in the proliferation of OSHR compliance in the absence of government involvement and sufficient enforcement.

The findings of this study also supports the reports of Nicholson and Llewellyn (2017) that the compliance to safety rule and regulation by health workers help to prevent workplace injuries, illnesses and deaths, as well as the suffering and financial hardship these events can cause for workers, their families and employers. The recommended practices use a proactive approach to managing workplace safety and health. Traditional approaches are often reactive that is, problems are addressed only after a worker is injured or becomes sick, a new standard or regulation is published, or an outside inspection finds a problem that must be fixed.

Conclusion

Based on the findings, the study concluded that community health extension workers in primary healthcare centres in Ningi LGA of Bauchi state moderately complied with the use of personal protective equipment and the standard precautions' measures.

Recommendations

Based on the findings and the conclusion, the following recommendations were made:

1. Government and non-governmental organizations should regularly update and reinforce training programs on the importance of personal protective equipment (PPE), standard precautionary measures, and hand hygiene practices. Ongoing education ensures high compliance levels and addresses emerging issues or changes in health guidelines.
2. Ministry of Health should implement a robust monitoring and evaluation system to ensure consistent adherence to PPE usage, standard precautions, and hand hygiene practices. Regular audits and feedback mechanisms can help identify areas for improvement and reinforce good practices.

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