FACTORS AFFECTING THE COMPLIANCE WITH STANDARD INFECTION PREVENTION PRECAUTIONAMONG COMMUNITY HEALTH PRACTITIONERS IN BAYELSA STATE, NIGERIA.

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DECLARATION AND APPROVAL

Declaration by student

This thesis is my original work and has not been presented for a degree in any other university or for any other award.

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Approval by the Supervisors

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We confirm that the work reported in this thesis has been carried out by the candidate under our supervision as university supervisors.

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DEDICATION

I sincerely dedicate this thesis to my Father, The God Almighty for all His love. I love the way He fathers me.

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My sincere thanks go to my Father, The Almighty God, for His blessings, His unfailing love, and the gift of life throughout my research work.

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LIST OF ABBREVIATIONS AND ACRONYMS

CHP	Community Health Practitioner
SP	Standard Precaution
SIPP	Standard Infection Prevention Precaution
HCW	Health Care Workers
IPAC	Infection Prevention And Control
PHC	Primary Health Care
BSPHCB	Bayelsa State Primary Health Care Board
KII	Key Informant Interview
FGD	Focus Group Discussion
PPE	Personal Protective Equipment
CDC	Center for Disease Control
HAI	Health Care Associated Infection
MKU	Mount Kenya University
IERC	Ethical Review Committee
SPSS	Statistical Package for Social Science
IP	Principal Investigator

ABSTRACT

Standard infection prevention precautions are measures taken to protect healthcare providers and patients. The research aimed at investigating factors affecting community health practitioners' compliance with standard infection prevention precautions in Bayelsa State, Nigeria. Three hundred and fifty-four community health practitioners consented and were recruited through multistage sample procedure, data was collected using a questionnaire, key informant interviews, and three focus group discussions. Quantitative data was analyzed with descriptive statistics with a criterion mean set at 2.5 and 2.0, and inferential statistics of multiple linear regression with 95% confidence interval using SPSS version 21. Findings indicated that community health practitioners in Bayelsa State are aware of standard infection prevention precaution (x=3.7, 95%), but their compliance level is low (x=2.2, 44%) due to individual factors such as difficulty to feel veins when on PPE (x=2.7), they experience some level of discomfort while performing skills using the PPE (x=2.0), and lack of knowledge on how to use the PPE (x=2.9), work-related factor such as workload due to shortage of staff (x=2.6), and PHC system factors such as unavailability of supervision on the use of standard infection prevention precautions (x=2.8), No accessibility to available PPE (x=2.9), Personal Protective Equipment (PPE) in unavailable (x=3.0), and no training programme on the use of PPE (x=2.9). There was a statistically significant relationship between sex and level of compliance with standard infection prevention precaution (p-value=.000); years of service and level of compliance with standard infection prevention precaution (p-value=.000). However, there was no statistically significant relationship between age and level of compliance with standard infection prevention (p-value=.296); religion and level of compliance with standard infection prevention precaution (p-value=.504), and marital status and level of compliance with standard infection prevention precaution (p-value= .168). There was also a statistically significant relationship between level of awareness and compliance with standard infection prevention precaution (p-value= .000). It is recommended that the government should make PPEs available in the health facilities, PHC Boards should conduct supportive supervision on the use of PPE and community health practitioners should be willing to use the PPE when discharging their duties in primary health care facilities.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The goal of health-care delivery states that patients and health-care practitioners are free from injuries (Nasiri, Balouchi,Rezaie-Keikhaie, Bouya, Sheyback, & Al Rawajfah 2019). Measures taken ahead of time to assure the quality of services delivered to patients are known as standard infection prevention precautions (CDC, 2017). The WHO has published instructions on how to reduce infection (Freilich, Nilsson, Ekstedt, et al. 2020; Frickmann, Schmeja, Reisinger, & Mittlmeier, 2016; Abdulraheem, Amodu, Saka, Bolarinwa, & Uthman, 2012). In order to reduce the risk of infection spreading, hospitals and other facilities for human and animal health care use illness control policies and practices. In the healthcare industry, the phrase "infection control" is frequently used and is a crucial component. It is accountable for all facets of personnel safety, welfare, and health. Healthcare professionals are an essential part of the healthcare system and play crucial roles in infection prevention and control, which invariably improve the standard of patient care and management. Primary healthcare providers (HCPs) and patients may both be impacted by healthcare-associated infections (HAIs) brought on by inadequate compliance with standard infection prevention precautions (Rahman, Hassan, Khan, Hasanuzzaman, & Awal, 2022).

Numerous healthcare personnel have died while performing their jobs as a result of a violation of infection prevention and control (IPC) protocols. Complicating this burden is the rising prevalence of newly emerging and reemerging diseases. Infection Prevention and Controls measures that are adequate include those that are administrative, workrelated, and personal

(Ochie, Aniwada, Uchegbu, Asogwa, & Onwasoigwe, 2022). Njovu (2015 conducted a study among nurses in at Zambia and discovered that inadequate materials and equipment (76.6%), work load (47.9%), a staffing shortage, and a negative attitude (38.3%) were the factors that affected compliance with infection prevention and control measures. Other factors included: overcrowding (33%), inadequate knowledge and funding (16%), as well as insufficient departmental meetings on infection prevention and control.

Most antibiotics are immune to the microorganisms present in hospitals, and their widespread use destroys the susceptible organisms, allowing resistant organisms to flourish. It is important that health-care personnel and patients are protected from germs that can lead to drug-resistant infections (Ogoina, Pondei, Adetunji, Chima, Isichei & Gidado, 2015; Abdulraheem, et al., 2012). All patients are given routine precautions regardless of whether or not they are aware of their infection situation and for the sake of the health care provider's welfare (Abdulraheem, et al., 2012). Normal infection prevention precautions incorporate respiratory cleanliness, hack behavior, hand cleanliness, the utilization of individual protective equipment and environmental cleanliness, injection control, and waste management (World Health Organization 2004). An overview of factors impacting healthcare workers' compliance with traditional infection prevention precautions is required before starting and adopting an appropriate “infection prevention and control (IPAC) plan in every health facility” (Ogoina, et al., 2015). The developing world has the highest incidence of HIV-positive patients as well as the highest rateof needle-stick injuries among health-care workers (Okechukwu & Modteshi, 2012). Awareness and training on standard infection prevention precautions, longer clinical experience, and a high-risk perception were all found to be factors related with improved consistence with standard precautionary measures for contamination avoidance among wellbeing laborers in anIndian study (Samur, Intepeler, & Lam, 2020;

Kermode, Jolley, Langkham, Thomas, Holmes,& Gifford, 2005).

Precaution kits and supportive supervision of health workers on the adherence to standard precautions on infection prevention in primary health centers have been linked to “a high level of compliance with standard infection prevention precaution” (Peter & Wilson, 2017). In Nigeria, studies have shown that the length of the training cycle and availability of infection prevention equipment are important factors (Abdulraheem, et al., 2012; Okechukwu & Modteshi, 2012). Infection prevention precautions are followed to a high degree in primary health-care facilities (Gershon et al, 1995; Stein et al, 2003;Sadoh et al, 2006; Adinma et al, 2009; Cutter & Jordan, 2012), but “not much is known” about what affects compliance with standard infection prevention precautions among community health practitioners (Okoroafor, Ngobua, Titus, *et al.* 2019). According to McFubara et al. (2017) Only 68.3% of all “respondents had good knowledge of hand washing and standard precaution on infection prevention”. No research has been done to “determine the level of compliance with standard precaution among community health practitioners in the primary health care centers of Bayelsa State, Nigeria” . As a result, it is important that a study be undertaken to establish the “level of compliance and factors that affect compliance with standard precaution” among community health practitioners in Bayelsa State's primary health care facilities. The findings of this study can be used to direct the development and implementation of infection prevention and control activities in both the study sites and other Nigerian health facilities.

1.2 Statement of the problem

The magnitude of the problem of low level of compliances with standard infection prevention precaution and the deliberate lack of attention on factors affecting the level of compliance among health workers in Primary Health Care Centers calls for attention particularly in this

COVID19 Era. Health workers who don't comply with the practice of standard infection prevention precaution stand the risk of contracting bloodborne infections and as well as spread these infections to their patients. Unfortunately, in most establishments, much attention is not given to factors influencing or affecting the "compliance with standard precaution on infection prevention" in the health facilities (Kassa,Tadesse, Walelign, & Kebede, 2022; McFubar, et al., 2017).

In Africa, a study conducted in Ethiopia on infection prevention practices found that 162 (or 65.0 percent) of 250 respondents adhered to standard precautions (Beyamo, Dodicho, & Facha, 2019) while 35% do not comply with infection prevention precaution. The findings also revealed that service years of less than or equal to five years, standard infection prevention precaution training, good hand hygiene, and the availability of personal protective equipment were all independently linked to standard precaution practices compliance (Beyamo, Dodicho, & Facha, 2019).

In Nigeria, a study conducted by Ogoina et al. (2015) to assess the "knowledge, attitude, and practice" of standard precaution on infection prevention in tertiary hospitals indicated that 49% of health workers do not practice standard precaution on infection prevention while discharging their duties to patients. Another study looked at health-care workers' "knowledge and practice of standard precautions in a tertiary health institution in Enugu, Nigeria", and discovered that standard precaution training and the "availability of personal protective equipment" were both significantly associated with standard precaution compliance on infection prevention. Aung, Nursalam and Dewi (2017) found that simple "training monitoring and enhancement of standard operating" procedures can help Mynmar nurses comply with standard precaution.

Ogoina et al (2015) found that the majority (76%) of "health workers" in tertiary 'health facilities in' Bayelsa State did not understand injection safety and complained of a lack of resources to take conventional infection prevention measures. Another study of 78 primary health care workers in Bayelsa State's Yenagoa Local Government Area, which included community health practitioners, found that while 75(96%) of participants had 'a fair understanding of standard precautions in the delivery of health care services', only 50(64%) of participants adhered to standard precautions while providing services (Dotimi, 2020; Vaz, McGrowder, Crawford, Alexander-Lindo, & Irving, 2010). It is therefore imperative to 'determine the factors affecting community health practitioners' compliance with standard 'infection prevention precautions' in Bayelsa State's primary health care centers. The study's aim was to find out what factors influence community health practitioners in Bayelsa State's 'primary health care' facilities to follow standard infection prevention precautions.

1.3 Broad objectives of the study

'To assess factors affecting community health practitioners' compliance with standard infection prevention precaution in Bayelsa State, Nigeria.

1.4 Specific objectives of the Study

i. To assess the 'level of awareness of standard infection prevention precaution among community health practitioners in Bayelsa State'.

ii. 'To assess the extent of compliance with standard infection prevention precaution' among Community Health Practitioners in Bayelsa State.

iii. To evaluate 'individual factors that affect the adherence to standard infection

prevention precaution among community health practitioners in Bayelsa State'.

iv. To determine 'work-related factors that affect compliance with standard infection prevention precautions among Community Health Practitioners in Bayelsa State'.

v. To assess the 'Primary Health Care system factors that affect the compliance with standard infection prevention precautions among Community Health Practitioners in Bayelsa State.

1.5 Research questions

i. What is the extent of awareness of community health practitioners in Bayelsa State, Nigeria, on standard infection prevention precautions?

ii. What is the extent of compliance with standard precaution on infection prevention among community health practitioners in Bayelsa State?

iii. What are the individual factors affecting the adherence to standard infection prevention precautions among community health practitioners in Bayelsa State?

iv. What are the 'work-related factors that influence Compliance with standard infection prevention precaution among Community Health Practitioners in Bayelsa State?'

v. What are the Primary Health Care system's factors affecting the 'compliance with standard infection prevention precautions among Community Health Practitioners in Bayelsa State?

1.6 Justification of the study

Researchers have shown ‘that there is a low level of compliance with standard infection prevention precautions in health facilities in Bayelsa State and in the southern part of Nigeria’ (Dotimi, 2020; Ogoina et.al, 2015)’. Ochie, Aniwada, Uchegbu, Asogwa, & Onwasoigwe, (2022) in their study also indicated that the ’community health practitioners’ in Enugu also demonstrated poor level of knowledge and compliance to standard infection prevention precautions demands and requested for more research to unravel this existing gap (Ochie, Aniwada, Uchegbu, Asogwa, & Onwasoigwe, 2022). As a result of these findings, patients may experience higher rates of morbidity and mortality, be more susceptible to antibiotic resistance, and be referred to higher levels of the healthcare system more frequently, as ’majority of these PHC workers did not demonstrate a high level of awareness of the standard infection prevention precaution (Ochie, Aniwada, Uchegbu, Asogwa, & Onwasoigwe, 2022). There has been no research on‘factors affecting the compliance with standard infection prevention precautions among the community health practitioners in Bayelsa State’. Therefore, it is very important that investigation be conducted to determine those factors responsible for the ’low level of adherence to standard infection prevention ’precaution among health care providers in this COVID19’. Identifying these factors may aid the adoption of strategies to improve the adherence level of ’health care workers in the health facilities.’

The study's results will reveal the extent of ’compliance with standard infection prevention precautions among community health practitioners’, as well as the factors that influence their compliance. The findings of the study may help community health practitioners in Bayelsa State to adhereto standard infection prevention precautions. It could help policymakers decide

whether to start an appropriate 'Infection Prevention And Control (IPAC) strategy' (Ogoina, Pondei, Adetunji, Chima, GIsichei, & Gidado, 2015) in the delivery of health care services in Primary Health Care Facilities. This study is important for public health because the results, once released, can raise awareness about 'factors that influence compliance with standard infection prevention precautions' in primary health care settings, reducing the incidence of nosocomial and blood/fluid infections like COVID19. It may also be used as a source of information for future research on Standard infection prevention precautions.

1.7 Scope of the study

The study focused on the individual, work-related, and primary health care system factors affecting the 'compliance with standard infection prevention among community health practitioners in Bayelsa State, Nigeria.

1.8 Study limitations

Funding was a challenge; it took a longer time to distribute and retrieve the data collection tool due to lack of funds. There was no financial support. The researcher was able to surmount the financial challenge through personal savings. During the literature review, there was little or no research work on compliance with standard infection prevention precaution among Community Health Practitioners, most of the similar studies were conducted among doctors and nurses. The limitation of a cross-sectional study made it difficult for researchers to follow up on the Community Health Practitioners to observe if the provision of any of the independent variables could make a change in the dependent variable. The PHC managers were not very explicit in providing information especially when it is sensitive, but the researchers made them to understand that it was for academic purposes.

1.9 Study assumptions

It was assumed that the 'Primary Health Care managers' and the Community Health Practitioners would be willing to provide information on individual, work-related and primary health care system factors that affect the compliance level. It was also assumed that all community health practitioners are very much aware of the dangers of not complying with the standard infection prevention precautions.

1.10 Operational Definition of Terms

Standard infection prevention precautions: These are universal infection prevention protocols to observe 'by health workers in the discharge of their duties' to patients to prevent bloodborne and nosocomial infections e.g hand washing, use of protective devices etc.

'Primary health care' is a clinically sound 'health-care' program that is widely affordable and socially appropriate to 'individuals and families' in the world. The community and families can afford with their full participation and at a low cost.

Community Health Practitioners: 'These are the junior 'community health extension worker' (JCHEW= Certificate in community health), 'community health extension worker' (CHEW= National Diploma in community health), and community health officers (CHO= Higher National Diploma in community health)'. They are 'primary health-care professionals' that are concerned with the community's health in which they give 'promotive, preventive, curative, and rehabilitative medical care administrations through a coordinated community effort'.

Compliance: the act of conforming to the universal infection prevention protocols while attending to patients in the health facility.

Individual factors: These are factors identified within an individual that either affect or influence one's compliance with standard infection prevention precautions.

Work-related factors: Features of the work environments that have been evaluated as potential factors affecting the ability/compliance of the workers with the standard infection prevention precautions.

Primary Health Care System factors: These are factors 'within the primary health care system' that is affecting ability/compliance of workers with standard infection prevention in the health facilities.

CHAPTER TWO

LITERATURE REVIEW

2. 1 Introduction

This chapter covers the review of the available literature on the current research area. It presents an overview of previous work on related objectives for this study. It starts with understanding' the factors affecting compliance with standard infection prevention, related literature 'to study objectives, theoretical framework, conceptual framework, and operationalization of variables, and finally the recap of the literature review'.

2.2 Empirical Literature

Standard infection prevention precautions are the minimum infection control procedures that extend to both patients and health care providers in all areas where health care is provided, 'regardless of the patient's suspected or confirmed infection status' (Arinze-Onyia, Ndu, Aguwa, Modebe, & Nwamoh, 2018). The value of health workers being exposed to blood-borne pathogens and other microorganisms cannot be overstated (Isara & Ofili, 2010). However, studies show that most health workers have knowledge on infection prevention precaution but the compliance level is low (Deuffic-Burban, 2011). To change the narrative, it is expedient that factors influencing the compliance level be identified and addressed (Sreedharan, Muttappillymyalil, & Venkotramana, 2011).

Piai-morai, Orlandi and Figueiredo, (2015) argued that improvements to individual, workplace, and health care system characteristics could result in more adherence to best practices for infection prevention. Lack of any one of these elements can lead to subpar performance. Another study

carried out among nursing students in Asia found that both individual and system factors, including awareness of standard infection prevention precautions and perceived barriers, as well as factors related to ’training, management support, and nursing staff impact, were predictors of compliance with standard precautions (Cheung, Chan, Chang, Chu, Fung, Kwan, Lau, Li, & Mak, 2015). According to research on "standard infection preventive precaution" adherence, individual, organizational, and work-related factors, as well as sociodemographic, personal, and institutional aspects, have all been included (Piai-morai, Orlandi, and Figueiredo, 2015; Haile, Engeda, & Abdo, 2017). The socio-demographic factors reported to affect adherence to standard infection prevention precautions include being female, (Oh & Choi 2019; Quan, Wang, Wu, Yuan, Lei, Jiang, 2017), length of work experience, (Kim & Shin, 2018), age, higher level of education, (Lee, Kim, Lee, & Ham, 2017), and workload. Occasionally, factors such as knowledge, attitude, safety climate, protective device, and workload have been examined without distinction of categories (Lee, Kim, Lee, & Ham, 2012). People's adherence to SP has been linked to factors such as health belief, awareness of the issue, and risk perception (Porto & Marziale, 2016; Cho & Choi, 2010; Haile, Engeda, & Abdo, 2017; Kim & Shin, 2018), with the effects depending on the nation, hospital type, and subject. Institutional elements that have recently attracted attention for their significance in ensuring “standard precaution adherence” include “safety equipment accessibility and availability”, “management support for safe work practices”, “safety performance feedback”, and “workplace safety climate” (Haile, Engeda, & Abdo, 2017).

While other research demonstrates that workplace safety atmosphere influences standard infection prevention precautions adherence among nurses providing dialysis care, a study of registered nurses from 25 public hospitals in China found that protective equipment, safety climate, and workload had an impact on them (Kim & Shin, 2018). Both the availability of personal protective equipment (PPE) and the atmosphere of security are two organizational elements that are

associated to nurses' adherence to SP in mental units (Piai-morai, Orlandi and Figueiredo, 2015). Haile et al. further demonstrate that management support, PPE accessibility, and SP training have an impact on medical staff in university hospitals (Haile, Engeda, & Abdo, 2017). This indicates that it is important to look into institutional variables, such as physical factors and other situations, that have an impact on workplace safety conditions, along with administrative assistance (Haile, Engeda, & Abdo, 2017; Baek, 2016). Following the 2015 MERS outbreak, this study examined the impact of sociodemographic and individual characteristics, such as knowledge and attitude, as well as institutional factors, such as safety climate and administrative support, on nurses' adherence to SPs in South Korean hospitals (Kim & Choi, 2016; Choi & Kim, 2016). Examining the effects of sociodemographic, individual, and institutional variables while taking the size and type of the hospital into account would help to increase SP adherence and build a secure environment and administrative system.

2.2.1 Individual factors affecting compliance with standard infection prevention precautions

Individual factors such as high-risk perception, right perception, keeness and knowledge of standard infection prevention precaution could affect the level of compliance. Oh & SilChoi, (2019) opined that high positive attitude was identified to be the strongest individual factor that motivated the nurses in South Korea to comply with standard infection prevention precautions. In a report, knowledge had a positive effect on the use of standard precautions through attitude mediation, and the safety environment had a positive effect on the use of standard precautions (Ogoina, Pondei, Adetunji, Chima, Isichei & Gidado, 2015). A study conducted in Asia to assess factors influencing isolation precautions among Jordanian nurses found that the majority of nurses (90 percent) have a good understanding of isolation precautions (Zeb, Muhammad & Khan, 2019). Beyamo, Dodicho, & Facha, (2019) also discovered that individual's perceived risk influenced

the health workers to comply with standard infection prevention precautions in the health facility. When a nurse provides nursing care while dressing in a gown or mask or while wearing gloves, the patients may feel distress, anxiety, or even grief. Additionally, they may see the actions of nurses as a sign that their health status is unsatisfactory or declining: "... the usage of a face mask by me each time I go to give a bed bath may have a detrimental effect on the patient's psychology" (respond from a female nurse working at an orthopaedic department) (Efstathiou, Papastavrou, Raftopoulos, *et al.* 2011). The organizations made the argument that, even though it may be required by Standard Precautions, the manner in which nursing care is provided can occasionally offend the patient if the measures of protection are utilized frequently (Efstathiou, Papastavrou, Raftopoulos, *et al.* 2011).

2.2.2 Work-related factors that affecting the compliance with standard infection prevention precautions

Work-related factors such as adherence to standard infection prevention precautions, workload, and years of service have shown to be responsible for poor compliance with standard infection prevention precaution among health workers. Quan, Wang, Wu, Yuan, Lei, Jiang, & Xiangya, (2015) in their study identified increased workload as a factor that harmed the use of standard infection prevention precautions. Work-related factors such as service year less than or equal to 5 years, training on standard precaution and having good hand hygiene were found to improve the level of compliance with standard infection prevention precaution among health workers in an Ethiopian institution-based cross-sectional study conducted from February 1–30, in the Dawuro zone revealed that the type of health facility (p=0.022) and years of practice (p=0.044) had a major impact on health care worker compliance with standard infection prevention precautions (Beyamo, Dodicho, & Facha, 2019). The results also showed that health care staff in primary

health care facilities were less likely than those in tertiary health care facilities to follow traditional infection prevention precautions (Esu, Okeke, &Gobir, 2019). In another study in eastern Nigeria, nurses (85.7%), midwives (80.2%), and community health officers (69.8%) were found to be very informed about standard infection control precautions as compared to other health staff. The study showed that those with more than five years of experience had a higher degree of knowledge of universal precautions than those with less than five years (p 0.05). Compliance with the use of sterile gloves, as well as the handling and disposal of needles and other sharp items, was higher than awareness of these procedures (p 0.05), especially among those with ten years or more of experience. A study conducted to assess health care workers' adherence to infection precautions found a significant relationship between compliance with gender, years of experience, and hospital job categories. (Ogbonda, Douglas & Moore 2020). The groups identified three similar work-related characteristics that are seen as barriers to observing conventional infection prevention practices, according to a study that was conducted (Efstathiou, Papastavrou, Raftopoulos, et al. 2011). Nurses frequently have a lot of obligations to meet. Because of this, nurses forego using the recommended infection control measures even when it is possible that they will come into contact with germs (Efstathiou, Papastavrou, Raftopoulos, et al. 2011). At the cardiology critical care unit, a nurse said: "I have a lot of things to do and not enough time; I'm very busy. I shall thus decide not to do some things, one of which is to lessen the preventative steps intended to ensure my safety. To put on gloves would take too much time." (Efstathiou, Papastavrou, Raftopoulos, et al , 2011). Another person who was employed by the burn unit concurred and added: "I agree that we are frequently too busy to exercise prudence. Why then are we so busy? Because there aren't enough nurses to carry out nursing tasks, in my opinion..." (Efstathiou, Papastavrou, Raftopoulos, et al 2011). In addition, many participants argued that following standard infection prevention precautions in many cases is time-consuming (for example putting on a gown).

Participants predicted that once nurses had enough experience, they will be extremely confident in their abilities. According to a nurse with extensive clinical experience, certain recommendations may not be followed because "the more capable I feel, the less preventive precautions I may take" (Efstathiou, Papastavrou, Raftopoulos, et al 2011).

2.2.3 Primary health care system factors that influence adherence with standard precaution

Infection prevention policies and their implementation, enable health care staff to develop a proactive attitude toward infection prevention, resulting in compliance with traditional infection prevention precautions in primary health care settings (Kim & Park, 2021). Provision of personal protective devices by the health system is very important in ensuring compliance with standard infection prevention precautions. All patient care follows standard infection prevention precautions. They are focused on risk assessment and use common-sense procedures and PPE to protect health care workers from infection and prevent infection from spreading from patient to patient. A study conducted in the United States to measure self-reported adherence to standard infection prevention measures revealed that the availability of PPE had a positive and significant impact on nurses' use of standard infection prevention measures against exposure to blood and body fluids (Suliman, Aloush, &Aljezawi, 2018).

The availability of training programs has been shown to be very effective in improving the level of adherence to standard infection prevention measures among healthcare workers. ’University, academic year level, and participation in infection prevention and control training or seminars in the previous six months were identified as systemic and systemic factors in a 'descriptive, cross-sectional study' conducted at six government universities in Saudi Arabia to investigate adherence to standard preventive measures and their predictors among Saudi nursing students.' (Alshammari, Cruz, Alquwez, Almazan, Alsolami, Tork, Alabdulaziz, & Felemban, 2018).

The failure of the ‘primary health care system’ to enforce the policy on standard infection prevention precaution and the use of protective devices has contributed to poor compliance in most primary health care settings (Pai-morais, Orlandi, & Figueiredo, 2015). A study conducted in Asia to evaluate nurses' awareness, enforcement and factors influencing their adherence to standard infection prevention precautions in three tertiary care public sector hospitals in Peshawar found that systemic factors such as enforcement of infection control policies contributed to non-adherence (Powers, Armellino, Dolansky, &Fitzpatrick, 2016). This indicates that organizational (institutional) factors hampered adherence to standard infection prevention precautions, implying that psychiatric hospitals lack healthy working environments, ongoing training, and management efforts to prevent infection (Pai-morais, Orlandi, & Figueiredo, 2015). Njovu (2015) found that nurses at St Dominic Missionary Hospital, Ndola, Zambia were well aware of standard infection prevention guidelines, supervision and ward meetings were essential to promote compliance. Supportive supervision and enforcement of policies on infection prevention facilitates compliance among health workers. The primary health care board should also ensure that the facilities to facilitate the compliance with standard infection prevention precautions are available for the health workers to use (Muhammad & Muliana, 2022).

However, there is no research on factors that affect compliance with standard infection prevention precautions among community health practitioners in Bayelsa State, Nigeria. It is therefore imperative to evaluate the compliance of community health practitioners with standard infection prevention precautions in Bayelsa State to increase their level of compliance. The results of this study will assist in the development of a plan to increase overall compliance with standard measures.

2.3 Theoretical framework

A concept that guides research and determines what to evaluate in statistical correlations is referred to as a theoretical framework (Nagy et al. 2004). This study was guided by the ecological model of health behavior and the health belief model.

2.3.1 The ecological model of health behavior

Ecological models of health behavior emphasize the environmental, individual, and political contexts of behavior (Hawkins, Schmitt, & Adebayo, 2021). The model leads to the explicit consideration of multiple levels of influence and thus guide the development of more complex interventions. The concept is that behavior has multiple levels of influence, often including intrapersonal (biological, psychological), interpersonal (social, cultural), organizational, community, physical environment, and politics. Ecological models are believed to provide comprehensive frameworks for understanding the multiple and interacting determinants of health behavior (Rural Health Information Hub, 2021). More importantly, ecological models can be used to develop comprehensive intervention strategies that systematically target mechanisms of change at each level of influence.

2.3.2 Application of Model

The model emphasizes not just a single factor responsible for decisions made towards health but look at various factors responsible such as policies, institutions (family, friends and organized institutions), interpersonal and intrapersonal (beliefs, perception, knowledge,) to be responsible for health decisions made. Applying this model to this research will allow researchers to assess all factors that could influence adherence to standard infection prevention.

2.3.3 The health belief model

The “Health Belief Model” is a model that can be used to guide health promotion and disease prevention programs. It is used to explain and predict individual changes in health behaviors. It is one of the most commonly used models to understand health behaviors (Champion & Skinner, 2008). Key elements of the health belief model emphasized on ’individual perception/belief about health conditions’, which predict individual health-related behaviors. The theoretical model defines the main elements that influence health behavior as "the individual's perceived risk of illness or disease" (perceived susceptibility), beliefs about consequences (perceived severity), potential positive benefits of action (perceived benefits), perceived barriers to action, exposure to factors that encourage action (guides to action), and confidence in one's ability to succeed (self-efficacy) (Champion & Skinner, 2008). The "Health Belief Model" can be used to design short-term and long-term interventions. Previous research has successfully used HBM as a theoretical framework to explain a wide range of human actions and attitudes, including adherence to universal precautions, a precursor to standard precautions. The result is the use of HBM, which increases the internal validity of this study and allows comparison with other studies of a similar nature (Efstathiou, Papastavrou, Raftopoulos, et al. 2011). Elements that decide the health belief model's ability to identify key decision points that influence health behavior are gathering information to identify a problem; communicating the severity of a health problem; communicating steps to offer a solution; providing assistance to reduce barriers or solution barriers; demonstrating action through skill development activities; and providing support that increases self-efficacy and the likelihood of successful behavior change

2.3.4 Application

The model helped the researchers to identify individual factors influencing the compliance with

standard infection prevention precautions, communicate the severity of not complying with standard infection prevention precautions to the community health practitioners, and identify the solution to the low level of compliance (Kassa, Tadesse, Walelign, & Kebede, 2022).

2.4 **Conceptual framework**

When the necessary factors that influence adherence are addressed, it is believed that adheringto a standard of practice is simple (Landry, Amara, Pablos-Mendes, Ademani, & Gold, 2006). Knowledge of how to use the equipment, minimal workload, the right attitude, a safe environment and supportive supervision are all factors that influence adherence to standard infection prevention precautions when performing duties to patients. According to the World Health Organization (2006), improving infection prevention requires implementing training programs, providing adequate tools, and taking preventive measures that will help health care workers' to comply with standard infection prevention precautions in the health care facility.

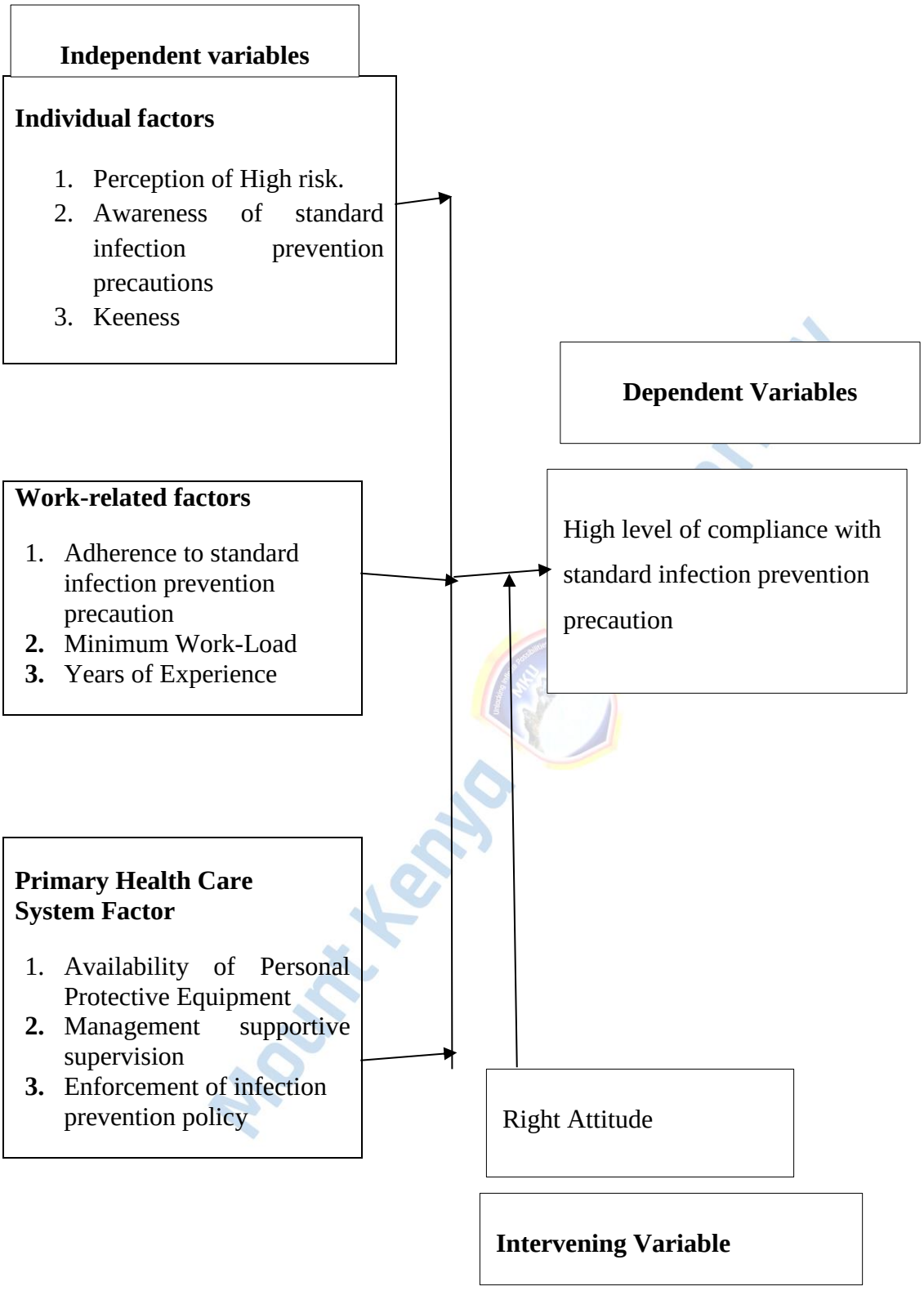

Figure 1: Conceptual framework

2.5 Recap of literature review

When delivering health care, standard precautions on infection prevention are a series of steps intended to prevent the transmission of bloodborne pathogens. Since medical history and physical examination alone cannot accurately classify patients infected with these pathogens. Hand cleanliness, individual defensive hardware (PPE), needlestick and sharps injury avoidance, washing and sanitization, respiratory cleanliness (Cough Etiquette), squander the board, and safe infusion rehearses were totally refreshed by the CDC in 1996 from Universal safety measures to Standard insurances (SP).The aim of 'standard precautions in infection control' in health facilities is to minimize the risk of bloodborne and other pathogens being spread from both identified and unknown sources. Person, work-related, and system factors all influenced health workers' compliance with standard infection prevention precautions, according to relevant literature from other continents, Africa, and other Nigerian states.However, there is no information on the factors influencing Community Health Practitioners' compliance with standard precautions in Bayelsa State, Nigeria. As a result, the researcher wants to know what factors influence Community Health Practitioners in Bayelsa State to follow standard precautions. The results of this study will assist in the development of a plan to increase overall compliance with standard infection prevention precautions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focused on research design, location of the study, target population, sampling procedures and sample size, research instruments, testing for reliability and validity, data collection methods and procedures, data analysis and techniques, and ethical considerations.

3.2 Research Methodology

The cross-sectional study used a multistage sampling procedure to recruit participants. Questionnaires, focus groups and key informant interviews were used to collect information from participants. Data were collected and analyzed using descriptive (item mean analysis) and inferential statistics (regression analysis). The results were presented in tables, mean, frequency and percentage.

3.3 Research Design

This was a cross sectional descriptive study. Cross sectional studies are a snapshot of the occurrence and characteristics of a disease in a population at a specific point in time (NEDARC, 2010). The design enabled the principal investigator to assess factors influencing the compliance of standard infection prevention precaution among community health practitioners in Bayelsa State under analysis at a specific point in time.

3.4 Location of the study

The study was conducted in Bayelsa State, Nigeria. On October 1, 1996, the then-military

government headed by Sani Abacha divided Rivers State into two (Bayelsa and Rivers States). Bayelsa State has a total landmass of 10,773km2 (4,159 sq mi), with a population of 1,704,515 citizens (National Population Commission, 2017). Despite the fact that petroleum products are extracted in Bayelsa State, the majority of the state's citizens live in abject poverty due to landscape and an absence of satisfactory transportation, wellbeing, instruction, and other foundation because of many yearsof disregard by the government, state governments, and petrol prospecting firms. Bayelsa State's indigenous people are mostly rural dwellers. The State is situated in Nigeria's south-south region and is divided into three senatorial districts: Bayelsa east, Bayelsa west, and Bayelsa central. These senatorial districts are further divided into eight Local Government Areas (Aziza, 2014). There are 185 primary health care facilities operated by the government (Bayelsa State Primary Health Care Board (BSPHCB), 2018). The Bayelsa State primary health care board is responsible for these services. In Bayelsa State, there are 511 community health workers working in these primary health care facilities (Kapologwe, Ruhago, Kibusi, Samky, Mtei, Kengia, Malima, & Kalolo, 2022; BSPHCB, 2018). The vast majority of primary health care facilities (95%) are located in rural areas of the state. These facilities are staffed by community health practitioners who provide immunization, prenatal and delivery care, as well as medical services to the population they serve (Magnussen, Vrangbaek, & Saltman, 2009).

3.5 Target population

The study participants are all community health workers serving in government primary health care centers in Bayelsa State. This group of healthcare workers works in primary healthcare facilities and is regularly exposed to the risks of healthcare facilities. The Bayelsa State Government employed 511 community health practitioners to provide "supportive, preventive, curative and rehabilitative health care services at primary health care centers" in the state

(BSPHCB, 2018). This cadre of health care providers has gone through formal training in universities, colleges of health technologies, and university teaching hospitals in Nigeria, where they obtained bachelor's degrees, certificates, national diplomas, and higher national diplomas in community health, and are licensed by the community health practitioners' registration board of Nigeria to practice.

3.5.1 **Inclusion criteria**

i. Only community health practitioners working in government-owned primary health centers in Bayelsa State were allowed to be enrolled in the study.
ii. Only community health practitioners who gave verbal consent were recruited for the study.

3.5.2 **Exclusion criteria**

i. Other 'healthcare workers' in government-owned 'Primary Health Care Centre were excluded from the study.
ii. Community health practitioners who did not give their consent and/or were mentally deranged were excluded from the study.

3.6 Sampling procedures and techniques

In order to recruit participants for the study, a multistage sampling procedure was used.

i. Stratified sampling technique, Bayelsa State was divided into three senatorial districts: Bayelsa Central, Bayelsa East, and Bayelsa West.
ii. Simple random sampling without replacement was used to select 159 health facilities for the study and 389 community health practitioners (Sample size =353 and 10% non-response rate =36).

3.7 **Sample population**

A sample size of 10 to 30% of the population is appropriate, though a larger sample size is preferable (NEDARC, 2010). The sample size was determined using Taro Yemani's formula. The following is the formula according to Uniproject Material (2022):

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample Size

N= Population Size

e = Level of Precision or sampling error (which is $0.05)^2$

Table 1: Table of Respondents from each Senatorial District

s/n	Senatorial Districts	No. of PHC Facility	population of community health practitioners	sample size with taroyemen formula			
				PHCF	CHPs	10% Non-response rate	No CHP from each selected facility: No. of CHP/PHCF

1	Bayelsa Central	82	211	68	138	14	2.2
2	Bayelsa East	64	192	55.1	129.7	13	2.4
3	Bayelsa West	39	108	35.5	85.0	9	2.3
	Total	**185**	**511**	**159**	**353**	**36**	
					Total = 389		

Note:

1. Number of facilities and population of CHPs in each senatorial district was obtained from the office of Bayelsa State primary health care board.
2. Sample size for health facilities in each senatorial district and the sample size for CHPs in each facility were calculated using the Taro Yemen formula.
3. The total sample size for the study was 353 community health practitioners and a 10% non-response rate of 36 (389) from 159 primaryhealth care facilities in Bayelsa State (See Appendix for calculations).

3.8 Construction of research instruments

Data were collected using a combination of approaches, including a structured questionnaire based on the compliance with standard infection prevention precaution scale, focus group discussion,

and key informant interviews. The results from the questionnaire were triangulated using key informantinterviews and focus group discussions.

The Structured Questionnaire was arranged in sections.

Section 1: sociodemographic data of participants

Section 2: awareness of standard infection prevention precautions

Section 3: level of compliance with standard infection prevention precautions

Section 4: individual factors affecting compliance with standard infection prevention precautions.

Section 5: work-related factors influencing the compliance with standard infection prevention precautions.

Section 6: primary health care system factors influencing the compliance with standard infection precautions. (See Appendix 1).

3.8.1 **Key informant Interview**

The key informant interviews were done in order to collect pertinent information that could answer questions like where, when, what, why, and how, as those were rarely captured using a questionnaire survey. The participants were PHC managers in the state and local authorities. With the help of a key informant guide, the interviews were open-ended as the researcher explored the details of the research theme (See Appendix for Interview Questions).

Table 2: Respondents for Key informant interview

Category of PHC Managers	**Number from each Senatorial District**	**Total**
State Primary Health Care Board	3	3

Local Authority Primary Health Care Managers	3	3
Total	**6**	**6**

3.7.2 **Focus group discussion**

A 'focus group discussion (FGD)' was also used. Three focus group meetings were held. Each focus group had four participants, who were recruited through a convenient sampling method, which lasted for 60 minutes. This enabled participants to thoroughly explore the topic of discussion without becoming fatigued (Krueger & Casey, 2009). The focus group meetings in the three senatorial districts were moderated by the Principal Investigator (PI) and research assistants took notes. Probe, follow-up, and exit questions were the three forms of questions. These made participants feel more at ease sharing their thoughts; they allowed the moderator to look further into the discussion subject and the participants' perspectives; and they ensured that nothing was left out (Bowling, 2009). (See Appendix for "FGD questions").

Table 3: Respondents for Focus Group Discussion

Senetorial Districts	**Number of Participants**
Bayelsa West	4
Bayelsa East	4
Bayelsa Central	4

Total	**12**

3.8.3 Pilot study

This refers to small-scale preliminary research performed to assess the feasibility, length, expense, and adverse events of a full-scale study as well as to improve the study design (Hassan, Schattner & Mazza, 2006). Because of this research, pilot research was conducted among community health workers in primary healthcare facilities in the Yenegoa Local Government Region. It involved a total of twenty (20) community health practitioners. Researchers and research assistants hand-delivered questionnaires to participants manually. The instrument had four areas: a) respondents' socio-demographic data; b) level of awareness of standard infection prevention precautions; c) level of compliance with standard infection prevention precautions; and d) factors affecting compliance with standard infection prevention precautions. Issues that were discovered were taken into account, and errors were corrected. It was re-piloted until no further adjustments were deemed appropriate. A research assistant who was not interested in data collection inserted data from the 20 subjects into a computer. Each questionnaire item was coded and entered directly into the "Statistical Package for Social Sciences" (SPSS) application. After that, SPSS version 21.0 was used to analyze the data before the entire research was conducted. All issues related to feasibility, length, expense, and adverse effects were addressed in the study design.

3.9 Testing for validity and reliability/trustworthiness

i. Validation of research instrument

Bolarinwa (2016) explains that validity determines how well an instrument measures what it can

measure. The principal investigator and supervisors who are specialists in the field of analysis tested the face and material validity. In addition, the researcher ensured that the evaluation covers all aspects of the construct. This was done to ensure that the content was accurate (Bolarinwa, 2016).

ii. Reliability of research instrument

The degree to which an instrument can yield a similar result if the test is replicated under the same conditions is referred to as reliability (Morris, 2020). The test-retest reliability technique was used to assess the instrument's reliability. This entails conducting an overview with a gathering of respondents, at that point rehashing the study with a similar gathering sometime in the not-too-distant future and looking at the reactions at the two points in time (Morris, 2020). The principal investigator distributed twenty questionnaires to health workers in Rivers State. They shared the same characteristics as the community health practitioners in Bayelsa State. The questionnaires were distributed and retrieved immediately, and the second collection of 20 questionnaires was distributed and retrieved immediately after two weeks. The pearson product moment correlation coefficient was used to compare the outcomes of both experiments. A coefficient of 0.76 was obtained and considered sufficient for the instrument to be used.

iii. Trustworthiness

Validity is the outcome goal of research work, and in qualitative instruments of data collection (interviews and focus group discussions), it is based on trustworthiness (Creswell, 2013). The following were used to ascertain the validity of the qualitative instruments:

1. **credibility**

This means the internal validity of the research. To establish credibility, I employ triangulation, member checks, and saturation. To ensure the validity of the findings, researchers triangulated evidence to documents by assigning a code to various interview and focus group discussion sources. Participants were also given the opportunity to verify the findings and interpretation (member check). Verification of the findings by the participants is the first step in achieving the validity of a research project in a qualitative study (Creswell, 2013). There was continuous recruitment of participants until rich information was gathered (Saturation).

2. **transferability**

Transferability ensures the stimulation of future research (Patton, 1990). To ensure future work on standard infection prevention precautions, researchers produced a thick description of the interview participants' experiences on the primary health care system factors that influence compliance with standard infection prevention precautions. This will enable readers to transfer the information to other settings.

3. **Dependability**

Dependability is a qualitative word for reliability. To ensure dependability, triangulation was employed through the use of multiple data collection strategies like interviews, focus group discussions, and observation. Dependability was also enhanced through the use of a tape recorder and field notes.

4. **Confirmability**

This is to establish the truth, accuracy, and genuineness of the actions and perceptions of participants. One strategy that researchers employed to ensure confirmability was the reflexivity

strategy. This is the ability of researchers to make their position explicit by being conscious of the biases, values, and experiences they brought into the study (Creswell, 2013). Researchers were careful not to sway any participant's opinion and instead let the data speak for itself. These various strategies, when employed, ensured trustworthiness in the study.

3.10 Data collection methods and procedures

Both quantitative and qualitative data were obtained for this study. Before any data was gathered, ethics clearance certificates were sought from Mount Kenya University's Ethical Review Committee, as well as the Bayelsa State Health Research Ethics Committee (BSHREC). Permission was sought from the Association of Community Health Practitioners and Primary Health Care Board. Only community health practitioners who met the study's inclusion criteria participated in the study. The direct delivery technique (DDT) was used by the principal investigator. This means that the principal investigator and research assistants hand-delivered and collected the questionnaires on the spot. Focus group discussions with four community health practitioners from each senatorial district lasted for 60 minutes. This was to enable participants to thoroughly explore the topic of discussion without becoming fatigued (Krueger & Casey, 2009). The focus group meetings in the three senatorial districts were moderated by the principal investigator and research assistants. Probe, follow-up, and exit questions were three forms of questions used in the group discussion. These made participants feel more at ease sharing their thoughts with the community, allowed the moderator to look further into the discussion subject and the participants' perspectives, and ensure that nothing was left out (Bowling, 2009).

Key informant interviews with the Director of staff training and development, the Chairman of the Primary Health Care Board, and the Executive Secretary of the Primary Health Care Board were also conducted (Bowling & Ebrahim, 2005). The key informant interviews and focus group discussions aided in the triangulation of quantitative data on health-related variables. A tape

recorder was used to document the focus group discussions and key informant interviews.

The researcher and two research assistants manually distributed 389 questionnaires to Community Health Practitioners from Bayelsa State randomly chosen Primary Health Care Facilities. The respondents were given 30-minute time limit in which to answer.

3.11 Data analysis techniques and procedures

Three hundred and eighty-nine questionnaires were manually distributed and 354(91%) were correctly filled and returned. The analysis is based on the data collated from 354 respondents. In this study, qualitative and quantitative data were collected, which necessitated two types of statistical analysis. The 'Statistical Package for the Social Sciences" (SPSS) version 21.0 was used to evaluate the quantitative data from the questionnaire. The evaluation of the questionnaire was analyzed using a 4-point "(4) strongly agree, (3) agree, (2) disagree, and (1) strongly disagree") and a 3-point Likert scale (3) always, (2) sometimes, and (1) never". The obtained data were analyzed using descriptive statistics (item mean analysis, percentage, and frequency analysis) and inferential statistics (linear regression). The criterion mean for extent of awareness was 2.5 because of the 4 Likert scale (ie 4+3+2+1=10/4= 2.5). the criterion mean for the analysis of other variables was 2.0 because of the 3 Likert scale was used (3+2+1 = 6/3=2.0) (Elendu, 2010). The data from the focus group discussions were analyzed using content analysis methods such as narratives, interpretations, and debates.

3.12 Ethical considerations

Mount Kenya University's Ethical Review Committee and the Bayelsa State Research Ethics Committee gave approval for the study. Permission to obtain data was also sought from the Bayelsa State Ministry of Health and the National Association of Community Health Practitioners

of Nigeria. Before they were recruited for the study, consent was sought and an informed consent form was signed by participants. Researchers ensured that participants willingly participated and were free to leave the study at any time. In the development of the questionnaire and focus group discussion, insulting, racist, or other inappropriate language was avoided. The privacy and anonymity of respondents were a top priority for the researchers. The participants were also assured that the study was meant for academic purposes only and that it was used to fulfill a Master degree requirement. All participants were treated with respect and dignity.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter contains a summary of the data obtained from the respondents. A total of 389 questionnaires were administered, but 354 (91%) were correctly filled out and returned, which was considered high for making a quality inference. The data was statistically analyzed using the SPSS version 21 for descriptive (mean, percentages, and frequency) and inferential (linear regression) statistics. Descriptive statistics with criterion mean set at 2.0 and 2.5 were used to analyze the extent of awareness, the extent of compliance, and factors affecting compliance with standard infection prevention precautions. Linear regression with a 95% confidence interval was used to analyze the relationship between the demographic data and the extent of compliance as well as the demographic variable and the extent of awareness. Results are presented in tables by frequency, percentages, and mean.

4.2. Research presentation, interpretation and discussions

4.2.1 socio-demographic data

Table 4 below represents the distribution of selected demographic variables for this study; the majority (139; 39.3%) were 48 years and older. The 'mean age' of the CHPs was 42 ('SD' = 11.3). The majority (217; 61.3%) were males. The majority (343; 96.8%) were christians. The majority (39; 11%) were widows, and the majority (119; 33.6%) have been in service for over 20 years.

Table 4: Participants socio- demographic data

S/N	VARIABLES	TOTAL	%
	AGE		
1	18- 27	40	11.3
2	28-37	90	25.4
3	38-47	85	24
4	48-above	139	39.3
	Total	**354**	**100**
	Mean Age =42 (SD 11.3)		
S/N	**SEX**	TOTAL	%
1	Males	217	61.3
2	Females	137	38.7
	Total	**354**	**100**
S/N	**Religion**	**Total**	**%**
1	christianity	343	96.8
2	islam	2	0.6
3	others	9	2.5
	Total	**354**	**100**
S/N	**Marital Status**	**Total**	**%**
1	single	40	11.3
2	married	190	54
3	divorced	85	24
4	widowed	39	39.3
	Total	**354**	**100**
S/N	**Years of Service**	**Total**	**%**
1	1-10	66	12.3
2	11-20	72	20.3
3	21-30	119	33.6
4	31 and above	97	27.4
	Total	**354**	**100**

4.2.2 Extent of awareness of standard infection prevention precaution among participants

Decision Rule: 'Any Grand mean or item's mean greater than or equal to the criterion's mean of 2.5 indicates good awareness level and any grand mean or item's mean less than the criterion's mean indicates poor awareness level'.

Table 5 below indicates that, the grand mean is ($\bar{x} = 3.7$). Using the criterion mean of 2.50, one may conclude that the extent of awareness of Standard Precaution on Infection Prevention

among the Community Health Practitioners in Bayelsa State is high because the item's mean and Grand mean of their awareness level is greater than the criterion's mean. The result also revealed that majority (95%) of CHPs in Bayelsa State are aware of standard infection prevention precautions.

Table 5: Extent of awareness of standard infection prevention precaution among participants.

S/N	ITEMS	RESPONSES						
		SA	**A**	**D**	**SD**	**TWS**	**Mean**	**DECISION/ Extent**
1	Standard infection prevention precautions refers to the 'bare minimum' of infection protection practices that all patients must follow.	270 (1080)	55 (165)	18 (36)	11 (11)	**1292**	**3.6**	**Accepted /High**
2	Hand cleanliness, the use of PPE, and safe injections were basic precautions for infection prevention.	279 (1116)	57 (171)	8 (16)	10 (10)	**1313**	**3.7**	**Accepted High**
3	Standard infection prevention precaution rules state that all human blood, body fluids, and other potentially infectious materials should be handled as if they are infectious.	260 (1040)	73 (219)	15 (30)	6 (6)	**1295**	**3.7**	**Accepted High**
4	Standard infection prevention precaution rules states that all of our patients should be handled as if they have possible blood-borne diseases that could infect the caring health-care staff.	280 (1120)	53 (159)	12 (24)	9(9)	**1312**	**3.7**	**Accepted High**
5	Needle sticks, burns, cuts from other sharps, blood splashes onto mucous membranes, broken skin with infected blood, and bites can all lead to infection.	260 (1040)	72 (216)	10 (20)	12 (12)	**1288**	**3.6**	**Accepted High**
6	Standard care should be taken for allpatients, regardless of their condition, as well as all infected equipment and material	294 (1176)	45 (135)	10 (20)	5(5)	**1336**	**3.8**	**Accepted High**
7	When deciding which protective barriers are needed, use your best judgment.	274 (1096)	55 (165)	16 (32)	9 (9)	**1302**	**3.7**	**Accepted High**
8	You received training on standard infection prevention precautions in the health facility	280 (1120)	33(99)	25 (50)	16 (16)	**1285**	**3.6**	**Accepted High**
		2197/8=275 (78%)	443/8=55 (16%)	114/8= 14 (4%)	78/8=10 (3%)	**Total**	**29.4**	
					Grand Mean = 29.4/8=3.7			

Criterion Mean = 2.50

4.2.3 Extent of compliance with standard infection prevention precautions among community health practitioners in Bayelsa State.

Decision Rule: Any grand mean or item's mean greater than or equal to the criterion's mean of 2.0 indicates good compliance and any grand mean or item's mean less than the criterion's mean indicates poor compliance.

Table 6: Using the criterion mean of 2.0, it can be concluded that the extent of compliance with standard infection prevention measures among community health workers in Bayelsa State is low as 8 mean items were rejected (less than the mean of the criterion) and the overall mean is slightly higher. criterion.

Secondly, the table 6 also revealed that percentage of compliance with standard infection prevention precautions among community health practitioners in Bayelsa State is very low (44%), 25% complied sometimes and 28% never complied.

Table 6: Extent of compliance with standard infection prevention precaution among participants.

		RESPONSES					
S/N	**Items**	**Always**	**Some times**	**Never**	**TWS**	**MEAN**	**DECISION/Extent**
	Hand Washing						
1	Hand washing/disinfectant when contacting different patients?	**84 (252)**	**205 (410)**	**74 (74)c**	**736**	**2.1**	**Accepted Low**
2	Washing hands/disinfectant when removing gloves	**230 (690)**	**60 (120)**	**64 (64)**	**874**	**3.4**	**Accepted High**
3	Washing hands/disinfectant after exposure to blood, body fluid, secretion?	**354 (1062)**	**0 (0)**	**0 (0)**	**1062**	**3**	**Accepted High**
		668/3=223 (63%)	**265/3=88(25%)**	**138/3=46(13%)**			
	Personal Protection Equipment (PPE)	**Always**	**Sometimes**	**Never**	**TWS**	**Mean**	**Decision**
1	'I wear gloves when taking blood from patients'	**120 (360)**	**206(412)**	**28 (28)**	**800**	**2.3**	**Accepted/Low**
2	I wear gloves during the disposal of stool and urine	**290 (870)**	**48 (96)**	**11(11)**	**977**	**2.8**	**Accepted High**
3	I wear gloves when in contact with patient's damaged skin	**190 (570)**	**120(240)**	**44 (44)**	**854**	**2.4**	**Accepted/Low**
4	I wear gloves when in contact with the mucosa membrane of patients	**100 (300)**	**102(204)**	**152 (152)**	**656**	**1.9**	**Rejected/Poor**
5	I wear gloves when I'm not dealing with patients in the facility	**21 (63)**	**100(200)**	**233 (233)**	**496**	**1.4**	**Rejected/Very poor**

6	I wear gloves when administering intramuscular and hypodermic injections	**50(130)**	**134(268)**	**170(170)**	**568**	**1.6**	**Rejected/poor**
7	I wear gloves when changing the dressing	**133(399)**	**54(108)**	**167(167)**	**674**	**1.9**	**Rejected/Poor**
8	I wear gloves when cleaning bloodstain	**216 (648)**	**54(108)**	**84(84)**	**840**	**2.4**	**Accepted/Low**
9	I wear gloves during venous puncture	**190(570)**	**119(238)**	**45(45)**	**853**	**2.4**	**Accepted/Low**
10	I wear gloves when I am in contact with blood sample	**230(690)**	**90(180)**	**34(34)**	**904**	**2.6**	**Accepted/Fair**
11	I wear gloves when recapping or reusing syringes	**159(477)**	**110(220)**	**85(85)**	**782**	**2.2**	**Accepted/Low**
12	'I wear protective goggles to protect the eyes during procedures where necessary'	**29(87)**	**31(62)**	**294(294)**	**443**	**1.2**	**Rejected/Very Poor**
13	'I wear protective gowns during procedures that could result in the rapid and effective spraying of blood, body fluid, secretion, or excretion'	**21(63)**	**73(146)**	**260(260)**	**469**	**1.3**	**Rejected/Very poor**
14	'I wear protective caps and shoes to protect hairs or shoes where necessary'	**1(3)**	**24(48)**	**329(329)**	**380**	**1.1**	**Rejected/Very Poor**
15	'I wear a face mask during procedures that might induce the spraying of blood, body fluid, secretion, or excretion'.	**180(540)**	**125(250)**	**49(49)**	**839**	**2.4**	**Accepted/Low**
		1714/15=114 (32%)	**1390/15=93 (26%)**	**1985/15=132 (37%)**			
	Safe injection practice	**Always**	**Sometimes**	**Never**	**TWS**	**Mean**	**Decision**
1	I use auto destructible injections on patients or clients?	**3(9)**	**344(688)**	**7(7)**	**704**	**2**	**Accepted/Low**

2	I recap needles before discarding them?	**310(930)**	**33(66)**	**11(11)**	**1007**	**2.8**	**Accepted/Fair**
3	I dispose of my sharps into the safety box after use?	**329(987)**	**25(50)**	**0 (0)**	**1037**	**2.9**	**Accepted/Fair**
4	On the same patient, I use a new needle for another prescription.	**345 (1035)**	**9 (18)**	**0 (0)**	**1053**	**3**	**Accepted**
5	I dispose the content of the safety box into the Incinerator	**1(3)**	**3(6)**	**351(351)**	**360**	**1.0**	**Rejected/Very Poor**
		988/5=198 (56%)	**414/5=83 (23%)**	**369/5=74 (21%)**			
	Total Compliance	**3586/23=156 (44%)**	**2069/23= 90(25%)**	**2492/23=108 (31%)**	**Total**	**50.1**	
		Grand Mean = 50.1/23 =2.2					

Criterion Mean = 2.0

4.2.4 Individual factors affecting compliance with standard infection prevention precautions among community health practitioners in Bayelsa State

Decision Rule: Any grand mean or item's mean greater than or equal to the criterion's mean of 2.0 is accepted as an individual factor influencing the compliance with standard infection prevention precaution and any grand mean or item mean less than the criterion mean is rejected.

Table 7 below indicates that, the grand mean is ($\bar{x} = 2.6$). Using the criterion mean of 2.0, the CHPs don't comply with Standard infection prevention precaution because they have difficulty to feel veins when on PPE ($\bar{x} = 2.7$), the experience some level of discomfort while performing skills using the PPE ($\bar{x} = 2.0$), and they lack knowledge of how to use PPE ($\bar{x} = 2.9$). It also revealed that those who complied with the standard infection prevention precaution do so because they understand that the use of PPE prevents them from being infected ($\bar{x} = 2.9$).

Table 7: Individual factors affecting compliance with standard infection prevention precautions on the use of PPE among community health practitioners in Bayelsa State

S/N	ITEMS	ALWAYS	SOMETIMES	NEVER	TWS	MEAN	DECISION
1	I don't wear gloves because they make it difficult to feel veins.	**270 (810)**	**45 (90)**	**39 (39)**	939	2.7	Accepted/ Fair
2	The use of PPE prevents me from being infected	**339 (1017)**	**10 (20)**	**5 (5)**	1042	2.9	Accepted /high
3	I feel discomfort while performing skills using the PPE	**32 (96)**	**290 (580)**	**32 (32)**	708	2	Accepted/ Low
4	I don't use the PPE because I don't know how to use it	**319 (957)**	**18 (36)**	**17 (17)**	1010	2.9	Accepted /High
		960/4= 240 (68%)	**363/4= 91 (25.6%)** Grand Mean = 10.5/4= 2.6	**93/4= 23 (6.5 %)**	Total	10.5	

Criterion Mean =2.0

4.2.5 Work-related factors affecting compliance with standard infection prevention precautions among community health practitioners in Bayelsa State

Decision Rule: Any Grand mean or item's mean greater than or equal to the criterion's mean of 2.0 is accepted as a workrelated factor affecting the compliance and any grand mean or item mean less than the criterion mean is rejected as a workrelated factor affecting the compliance.

Table 8 below indicated , the grand mean is ($\bar{x} = 1.9$). Using the criterion mean of 2.0, the

work-related factors influencing the compliance with standard infection prevention precautions among the community health practitioners in Bayelsa State include workload due to a shortage of staff ($\bar{x} = 2.6$). *However* patients discomfort ($\bar{x} = 1.8$) *and* Emergencies ($\bar{x} =$ 1.3)were not considered as factors influencing the compliance , *because their item mean were less than the criter*ion mean.

Table 8: Work-related factors affecting compliance with standard infection prevention precautions among community health practitioners in Bayelsa State

S/N	ITEMS	RESPONSES					
	ITEMS	**ALWAYS**	**SOMETIMES**	**NEVER**	**TWS**	**MEAN**	**DECISION**
1	'Workload due to a shortage of staffmakes it difficult for me to use the PPE'	**260 (780)**	**47 (94)**	**47 (47)**	921	2.6	Accepted
2	The patient's discomfort is an obstacle to the use of PPE	**109(327)**	**47 (94)**	**202 (202)**	623	1.8	Rejected
3	Emergencies, do not have the timeto follow standard precaution on infection prevention	**25 (75)**	**52 (104)**	**277 (277)**	456	1.3	Rejected
		394/3=131 (37%)	**146/3=49 (13.8%)**	**526/3 =175 (49.4%)**	Total	5.7	
		Grand Mean= 5.7/3= 1.9					

Criterion Mean =2.0

4.2.6: Primary health care system factors affecting compliance with standard infection prevention precautions among community health practitioners in Bayelsa State

Decision Rule: Any Grand mean or item's mean greater than or equal to the criterion's mean of 2.0 is accepted as a PHC System factor affecting the compliance and any grand mean or item mean less than the criterion mean is rejected as PHC system factor affecting the compliance.

Table 9 below indicated that, the grand mean is ($\bar{x} = 2.2$). Using the criterion mean of 2.0, the Primary Health Care System factors influencing the compliance with standard infection prevention precaution among the Community Health Practitioners in Bayelsa State **include** unavailability of supervision on the use of standard precaution ($\bar{x} = 2.8$), $No\ accessibility\ to\ available\ PPE,\ (x =$ 2.9), $Personal\ Protective\ Equipment(PPE) is\ unavailable\ (\bar{x} =$ 3.0), $No\ training\ programme\ on\ the\ use\ of\ PPE\ (\bar{x} =$ 2.9), $and\ None\ has\ challenged\ them\ when\ they\ don't\ adhere\ to\ standard$ $precautions\ (\bar{x} = 2.8). However,\ item\ means\ of\ no\ policy\ on\ infection\ control\ (\bar{x} = 1.0)\ and\ Management\ support\ the\ use\ of\ standard\ precaution\ in\ the\ clinic\ (\bar{x} = 1.1)\ were\ rejected\ because\ they\ were\ less\ than\ the\ criterion$

Table 9: PHC system factors affecting compliance with standard infection prevention precautions among community health practitioners in Bayelsa State

S/N	ITEMS	RESPONSES					
		ALWAY	SOMETIMES	NEVE	TW	MEAN	DECISION

		S		**R**	**S**		
1	Unavailability of supervision on the use of standard precaution	**300 (900)**	**39 (78)**	**15 (15)**	993	2.8	Accepted
2	PPE is available	**5 (15)**	**4 (8)**	**345 (345)**	368	1.0	Rejected
3	No accessibility to available PPE	**335 (1005)**	**10 (20)**	**9 (9)**	1034	2.9	Accepted
4	Personal Protective Equipment(PPE) is unavailable	**348 (1044)**	**2 (4)**	**4 (4)**	1052	3.0	Accepted
5	Management supports the use ofstandard precautions in the clinic.	**6(18)**	**7 (14)**	**341 (341)**	373	1.1	Rejected
6	There are no policies to control the spread of infection.	**4(12)**	**4 (8)**	**346 (346)**	366	1.0	Rejected
7	No training programme on the use of PPE	**339 (1017)**	**4 (8)**	**11 (11)**	1036	2.9	Accepted
8	None has challenged me when I don't adhere to standard precautions	**304 (912)**	**36 (72)**	**14 (14)**	998	2.8	Accepted
		1641/8=205 (57.9%)	**106/8=13 (3.7%)**	**1085/8=136 (38.4%)**	Total		
			Grand Mean= 17.5/8 =2.2				

Criterion Mean =2.0

4.2.7 Association between awareness of standard infection prevention precautions and demographic variables.

Table 10: The results below showed that there was a statistically significant relationship between the extent of awareness of standard infection prevention precautions and sex (P-value =.000), religion (P-value =.000), and years of service (P-value =.000) because P

<0.05). However, age (P-value =.821) and marital status (P-value =.315) were not statistically significant because p>0.05.

Table 9: Association between awareness of standard infection prevention precautions and demographic variables.

Variables	**Good (%)**	**Fair (%)**	**Poor (%)**	**Total (%)**	**Regression (p-value)**	**Decision**
Sex						
Male	190(88%) (570)	20 (9%) (40)	7 (3%)(7)	217 (61.2%) (617)	.000	significant (p<0.05)
Female	110 (80%) (330)	15 (11%) 30	12 (9%) (12)	137 (39%) (372)		
Age	**Good (%)**	**Fair (%)**	**Poor (%)**	**Total (%)**	**Regression (p-value)**	**Decision**
18- 27	30 (75%) (90)	5 (13%) (10)	5 (13%) (5)	40 (11%) (100)	.821	not significant (p>0.05)
28-37	80(88%) (240)	9 (10%) (18)	1 (1%) (1)	90 (25%) 259		
38-47	70(82%) (210)	10 (12%) (20)	5(6%) (5)	85(24%) (235)		
48-above	120(86%) (360)	11(8%) (22)	8 (6%) (8)	139(39%) (390)		
Religion	**Good (%)**	**Fair (%)**	**Poor (%)**	**Total (%)**	**Regression (p-value)**	**Decision**
christianity	290(85)	34 (10)	19(6)	343 (97)	.000	significant (p<0.05)
islam	1(50)	1(50)	0(0)	2(0.6)		
others	9(100)	0(0)	0(0)	9(3)		
Marital Status	**Good (%)**	**Fair (%)**	**Poor (%)**	**Total (%)**	**Regression (p-value)**	**Decision**
single	30(75)	5 (13)	5 (13)	40 (11)	.315	not significant (p>0.05)
married	170 (89)	15(8)	5 (3)	190(54) (550)		
divorced	70(82)	10(12)	5 (6)	85(24)		
widowed	30(77)	5(13)	4(10)	39(11)		
Years of Service	**Good**	**Fair (%)**	**Poor (%)**	**Total (%)**	**Regression (p-value)**	**Decision**
1-10	60(91)	5(8)	1(2)	66(19)	.000	significant (p<0.05)
11-20	68(94)	2(3)	2(3)	72(20)		
21-30	100(84)	15(13)	4(3)	119(34)		
31 and above	72(74)	13(13)	12(12)	97(27)		

4.2.8 Association between extent of compliance with standard infection prevention precaution and demographic variables.

Table 11: The results below indicate a statistically significant relationship between the extent of awareness of standard infection prevention precautions and sex (P-value =.000), religion (P-value =.000), and years of service (P-value =.000) because P <0.05). However, age (P-value =.821) and marital status (P-value =.315) were found to be not statistically significant because p>0.05.

Table 10: Association between level of compliance with standard infection prevention precaution and demographic variables.

Variables	**Always (%)**	**Sometimes (%)**	**Never (%)**	**Total**	**Regression P-Value**	**Decision**
SEX					.000	Significant (p<0.05)
Male	40 (18)	130 (60)	47 (22)	217 (100)		
Female	60(44)	50(36)	27(20)	137 (100)		
Age	**Always (%)**	**Sometimes (%)**	**Never (%)**	**Total (%)**	**Regression P-Value**	**Decision**
18- 27	10(25)	20(50)	10 (25)	40 (100)	.296	Not significant (p>0.05
28-37	30(33)	40(44)	10(11)	90 (100)		
38-47	40(47)	30(35)	15(18)	85(100)		
48-above	50(36)	60(43)	29(21)	139(100)		
Religion	**Always (%)**	**Sometimes (%)**	**Never (%)**	**Total (%)**	**Regression P-Value**	**Decision**
Christianity	50(15)	240(68)	53(15)	343 (100	.504	Not significant (p>0.05)
Islam	1(50)	1(50)	0(0)	2(100)		
Others	2(22)	4 (44)	3(33)	9(100)		
Marital Status	**Always (%)**	**Sometimes (%)**	**Never (%)**	**Total (%)**	**Regression P-Value**	**Decision**
Single	5(13)	30(75)	5(13)	40 (100)	.168	Not significant (p>0.05)
Married	40(21)	130(68)	20(11)	190(100)		
Divorced	10(12)	40(47)	35(41)	85(100)		
Widowed	9(23)	20(51)	10(26)	39(100)		
Years of Service	**Always (%)**	**Sometimes (%)**	**Never (%)**	**Total (%)**	**Regression P-Value**	**Decision**
1-10	5	40	21	66(100)	.000	Significant (p<0.05)
11-20	20	47	5	72(100)		
21-30	40	60	19	119(100)		
31and above	30	50	17	97(100)		

4.3 Discussions of individual objectives and results

Considering the decision rule for this analysis that any grand mean or item's mean greater than or equal to the criterion's mean of =2.5 indicates a good awareness level and any grand mean or item's mean less than the criterion's mean indicates a poor awareness level, the result of the study revealed that the extent of awareness of standard infection prevention precautions among the community health practitioners in Bayelsa State is high (mean and grand mean of their awareness levels are greater than the criterion mean). A similar result in Malaysia indicated that the majority of the participants had a high level of knowledge of standard infection prevention precautions (Esu, Okeke & Gobi, 2019; Mohd-Nor, & Bit-Lian, 2019). Another study in Korea indicated that the health workers had a good-awareness level of standard infection prevention precautions (Nordin, Zulkiflee, Jali, & Ismail, 2019; Korea Convergence Society, 2019). Isara and Ofili (2010) had a similar result in their study in Delta State, Nigeria, among health workers; only 63 (37.7%) of them had good knowledge of standard infection prevention precautions (Jemal, Gashaw, Kinati, Bedada, & Getahun, 2020). However, Ogoina et al. (2015) reported low knowledge (awareness) of standard infection prevention precautions among healthcare workers in 'two tertiary hospitals in Nigeria' and the reason for the poor awareness level was inadequate resources to practice standard precautions. Another study conducted in Edo State, Nigeria indicated that most of the health workers (94.5%) were aware of standard infection prevention precautions (Osagiede, Utomi, Egbuta, Osagiede, Airefetalor, & Abah, 2020). A study conducted to "assess the knowledge, determinants, and compliance to infection prevention control (IPC) among primary health care workers

in Enugu State indicated that only 254(84.7%) of the respondents had previous IPC training and 82(27.3%) of them had good knowledge of IPC" (Ochie, Aniwada, Uchegbu, & Onwasoigwe, 2022). Awareness of standard precautions is the first step to compliance. Therefore, it is essential that health workers receive training on standard precautions for infection prevention to improve their awareness or knowledge level. Apparently, the result showed that sex, religion, and years of service are slightly associated with awareness of standard infection prevention precautions ($P< 0.05$). This contradicts the findings of Ogbonda et al. (2020) that indicated a significant association between healthcare workers' awareness of standard infection prevention precautions and gender, marital status, years of experience, and job category in hospitals ($p <0.05$).

The findings of the study also indicated that not all community health practitioners complied with the standard infection prevention precautions because their compliance level was slightly above the criterion mean ($x=2.2$; 44%). This implies that, while they were aware of standard infection prevention precautions, the extent of their compliance did not match the level of awareness. This finding is similar to the findings of Haile, Engeda, and Abdo (2017), which indicated that only 12% of healthcare workers significantly practice standard infection prevention precautions while discharging their duties. Another study also discovered that standard infection prevention precautions practiced in healthcare facilities were found to be so low that both patients and health professionals were at significant risk for infections (Angaw, Gezie, & Dachew, 2019). This means a good awareness level of standard infection prevention precautions is not enough to achieve a good compliance level. However, Bayamo, Dodicho, and Facha, (2019) discovered in their study that 162 (65%) of health workers complied with standard infection prevention precaution practices in public health institutions in the Dawuro zone,

southwest Ethiopia. Apparently, linear regression results showed that sex and years of service are slightly associated with compliance with standard infection prevention precautions ($P<0.05$). However, age, religion, and marital status were found not to be statistically significant ($p>0.05$) associated with compliance with standard infection prevention precautions.

The study also showed that individual factors affect the extent of compliance with standard infection prevention precautions (x=2.6; 68%), because the grand mean is higher than the criterion (2.0). Such individual factors include not being comfortable with the use of PPE (x=2.0), I don't wear gloves because they make it difficult to feel veins (x=2.7), and having no knowledge of how to use it (x=2.7). This implies that the compliance level is low because of a lack of knowledge on how to use personal protective equipment and those who have the knowledge feel some level of discomfort when using the PPE. Amoran and Onwube (2013) indicate in their study that a lack of knowledge on how to use PPE affects the level of compliance among healthcare workers. Kim and Lee (2021) also confirmed that individual factors have a significant relationship with compliance with standard infection prevention precautions (46.7%). In an Ethiopian study, compliance was low among healthcare workers (Haile, **Engeda**, & Abdo, 2016). Infection prevention precautions on the use of PPE due to insufficient knowledge pose devastating consequences in PHC. Interventions such as training of staff on standard infection prevention precautions and consistent managerial support are required (Haile, Engeda, & Abdo 2016). Health workers' discomfort was considered a major obstacle to following standard infection prevention precautions (Efstathiou, Papastavrou, & Raftopoulos, *et al.* 2011). Difficulty in using PPE was discovered to be an individual factor influencing compliance with standard infection prevention precautions when using PPE. This

confirms the findings of a study on barriers to precautions which reported that one of the reasons PPE was not used (18.5%) was difficulty in performing the work (Yildiz,, Kaban & Tanriverdi, 2022; Kang, O'Donnell, Colaianne, Bircher, Ren, & Smith, 2017). Similarly, Madan et al. studies have shown that the reason for not using PPE is the discomfort caused by PPE (Madan, Raafat, Hunt, Rentz, Wahle, & Flint, 2002). Neves and colleagues concluded that the use of PPE is determined by personal values and beliefs as well as work experience, but the decision to use PPE is up to the individual (Neves, Souza, Medeiros, Munari, Ribeiro, & Tipple, 2011). Another study on the use of PPE among healthcare workers found that the reason for not using PPE was the discomfort caused by PPE and that PPE was not easy to use when the temperature was high. Because it is not made of breathable material, it causes sweating during hot climates (Cherrie, Semple, Christopher, Saleem, Hughson, & Philips, 2006; Fan, Jiang, Hu, Chen, Xu, Qi, Yin, Gou, & Liang, 2020).

Participants reported that they preferred not to use specific equipment because it interfered with their abilities (for example, using gloves reduced their dexterity when drawing blood) (Osborn, 2003). Behavioral change was also thought to make compliance more difficult. Participants acknowledged that they were unwilling or unable (self-efficacy) to change their existing practice because it was how they had been taught or were used to doing things (Efstathiou, Papastavrou, Raftopoulos, et al. 2011).

Community health workers should be aware that while this behavior may facilitate or improve the delivery of care, it is also susceptible to disease, requiring the constant use of protective equipment. This study supports earlier findings in the literature that noted a detrimental impact on ability as a deterrent to taking preventive action (Osborne, 2003;

Daddario, 2007; Kelen, DiGiovanna, Celentano, Kalainov, Bisson, Junkins, Stein, Lofy, Scott, & Sivertsen , 1990). Previous research has found negative effects on nurses, such as skin irritation (Oliveira, Cardoso, Mascarenhas, & 2010) or hand pain when wearing gloves (Kim, Evanoff, Parks, Jaffe, Mutha, Haase, & Fraser, 1999), are also factors that prevent health professionals from implementing preventive measures. This negative influence can, to a certain extent, be overcome by using, for example, high quality products (for example, soap). This is a matter of policy, and healthcare policymakers should take this into consideration if they want to avoid unnecessary sick-leaves or low levels of nursing care. The Centre for Disease Control (CDC) stated that healthcare workers must use one or more of the different personal protective equipment in different ways to protect both themselves and the patients they deliver treatment to (CDC, 2019). Personal protective equipment (PPE) is defined as special clothing or equipment that protects workers from infectious agents (CDC, 2019). The use of PPE is a key component of standard infection prevention precautions. Personal protective equipment creates a physical barrier between microorganisms and users, protecting eyes, hair, hands, clothing, and shoes from microbial contamination (Yildiz, Kaban, & Tanriverdi, 2022). In health care, personal protective equipment (PPE) includes glasses, face shield masks, gloves, masks/respirators, and aprons (CDC,2019).

The findings further indicated that Workload ($\bar{x} = 2.6$) due to shortage of staff is the work-related factor affecting the compliance with standard infection prevention precaution among the community health practitioners in Bayelsa State. Focus group discussions with community health practitioner also revealed that most of the health facilities are short staffed due to retirement thereby increasing the workload of available staff. The focus group participants also stated that when there are emergency cases, they tend to forget to put on

their hand gloves. Ndu and Arinze-Onyia, (2017) opined that emergency situations was among constraints that affected the compliance with standard infection prevention precaution among staff of University of Nigeria Teaching Hospital. This is similar to the findings of the study conducted by Ogbonda, Douglas and Moore (2020) which indicated that too much work-loads were among factors contributing to low compliance with standard infection prevention among health workers in Rivers State, Nigeria. This implies that the compliance level at work may improve if community health practitioners have less work load or more hands are employed that provide health care services in the primary health care centres (Magnussen, Jon, Vrangbaek, Karsten, Saltman, & Richard, 2009). However, item means of patients' discomfort ($\bar{x} = 1.8$) and Emergencies ($\bar{x} = 1.3$) were found to be less than the criterion mean (2.0). This means that they were rejected as work-related factors affecting the compliance with standard infection prevention precaution. Focus group participants argued that there are frequently time constraints on putting measures into effect. They claimed that despite their best efforts, they are unable to follow rules due to their busy schedules. Another thing that was thought to prevent community health practitioners from using standard infection prevention precautions was dealing with an emergency. It was stated that dealing with an emergency means doing a number of things at once, very quickly, and frequently under extreme pressure. Lack of time has also been extensively identified elsewhere as a barrier to implementing safety measures (Hodgetts, Brown, Batić-Mujanović, et al. (2020). Due to a lack of time, it was believed that this situation might cause community health practitioners to disregard the precautionary recommendations.

The findings also indicated that the primary health care system's factors affecting the compliance withstandard infection prevention precautions on infection among community health practitioners in Bayelsa State includes unavailability of supervision on the use of

standard precaution ($\bar{x} = 2.8$), No accessibility to available PPE ($\bar{x} = 2.9$), Personal protective equipment (PPE) is unavailable ($\bar{x} = 3.0$), No training programme on the use of PPE ($\bar{x} = 2.9$), and None has challenged them when they don't adhere to standard infection prevention precautions ($\bar{x} = 2.8$). Participants in the focus group also confirmed that the government has not provided them with PPE for some years but that individually, they go to the health facility with their personal disposable gloves and sanitizers. Standard infection prevention precautions cannot be followed if healthcare workers do not have direct access to the necessary tools, which has been cited as a barrier to their implementation. This confirms the findings of Njovu (2016), which stated that lack of supportive supervision and inadequate departmental meetings on infection prevention and control are primary healthcare factors influencing non-compliance with standard infection prevention precautions in primary healthcare settings. In fact, some participants reported that personal protective equipment is kept locked or stored far from the location where nursing care is provided, making their usage in some circumstances difficult (for example, in an emergency situation). Other research produced findings that were comparable (Osborne, 2003; Oliveira, Cardoso, & Mascarenhas, 2010; Henry, Campbell, Collier, & Williams, 1994; Naing, Nordin, & Musa, 2001). Therefore, it is crucial that community health practitioners have the safety gear on hand and ready to use. Participants also stated that they have not received training on the use of personal protective equipment and that their knowledge of standard infection prevention precautions stems from personal studies and what they learned in school. This finding is similar to the findings of a study, which state that compliance with standard infection prevention precautions among healthcare workers is very low due to a lack of training on standard infection prevention precautions, a lack of accessibility of personal protective equipment, and a lack of management support (Haile, Engeda, & Abdo,

2016). The key informant interview with management of the primary health care system revealed that a lack of funds to conduct supportive supervision and provide PPE for health workers in the primary health centres has been a challenge. Another study conducted in Lagos, Nigeria among nurses indicated that the most reported factors influencing the practice of standard precautions were non-availability of personal protective equipment (PPE) (92.1%), lack of regular training on standard precautions (91.1%), and lack of good policy on standard precautions (81.5%) (Julius, Salamat, Bukola, & Deborah 2021).

There was a statistically significant relationship between the demographic variables of years of service (p-value =.000) and sex (p-value =.000) were found to be statistically significant to the extent of compliance with standard infection prevention precautions. However, age (p-value =.296), religion (p-value =.504), and marital status (p-value =.168) were not statistically significant because their p-values were greater than 0.05. This confirms the findings of Ogbonda et al. (2020) that there is a significant association between compliance with standard infection prevention precautions and gender, years of experience, and job categories in hospitals ($p < 0.05$) (Ali, Mohamed, & Mahdy, 2018). Esu, Okeke, and Gobir (2019) also conducted a cross-sectional study to determine the factors influencing compliance with standard infection prevention precautions among healthcare workers in primary, secondary, and tertiary hospitals. Years of practice ($p = 0.044$) and type of health facility ($p = 0.022$) were found to be factors that significantly influenced healthcare workers' adherence to standard precautions (Esu, Okeke, &Gobir, 2019).

The findings of the study have revealed that compliance with standard infection prevention precautions among community health practitioners working in government-owned primary health care facilities in Bayelsa State is linked to individual, work-related, and primary

health care system factors. Therefore, intervention strategies must focus on addressing these identified issues in order to protect health workers and patients in primary healthcare settings.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of major findings, conclusions and recommendations of the research study and suggestions for further study.

5.2 Summary

The study was all about investigating ’factors that influence the compliance with standard infection prevention precaution among Community Health Practitioners in Bayelsa State’. The first objective was to ’assess the level of awareness of standard infection prevention precaution among community health practitioners in Bayelsa State’. The result of the findings proved that there is a high level of awareness of standard infection prevention precautions among the community health practitioners in Bayelsa State.

The second objective ’assessed the extent of compliance with standard infection prevention precaution among the community health practitioners’. The result of the findings proved that the extent of compliance with standard infection prevention among the community health practitioners was very low.

The third objective assessed the individual factor affecting the compliance with infection prevention among CHPs and the findings indicated that the CHPs lack the knowledge on how to use the personal protective equipment and some find discomfort while performing duties with the PPE. Those that use the PPE claims they use it to protects them from infection.

The fourth objective assessed the work-related factors affecting the compliance with standard infection prevention precaution and the findings proved that too much workload makes it difficult for CHPs to use the PPE and that affects the compliance level. Patients discomforts and emergency situations were rejected as work-related factors affecting the compliance with standard infection prevention precaution.

The fifth objective assessed the primary health care system factors affecting the compliance level of community health practitioners, and the findings indicated that the primary health care system factors that affect compliance with standard infection prevention precautions were "unavailability of supervision on the use of standard precautions; no accessibility to available PPE; unavailability of personal protective equipment(PPE); no training program on the use of PPE; and none have challenged the CHPs when they don't adhere to standard infection prevention precautions."

It was also discovered that there is a statistically significant relationship between the extent of awareness of standard infection prevention precautions and sex, religion, and years of service because of $P < 0.05$. Findings also indicated that there was a statistically significant relationship between the extent of compliance with infection prevention precautions, years of service, and sex ($P < 0.05$).

5.3 Conclusion

Based on the study topic which focused on the factors affecting the compliance with standard infection prevention precaution among community health practitioners in Bayelsa State Nigeria, I conclude by stating that Community Health Practitioners have awareness on standard infection prevention but their level of compliance is very low due to lack of

knowledge on how to use the PPE. They need to be trained on how to use the PPE when discharging their duties.

The workload at the primary health facilities was too much in some facilities because they were understaffed. There is a need to engage more community health practitioners to work in health facilities to reduce the workload. Most facilities don't have a supply of PPE for their staff to use, and in some other facilities where PPEs are available, they are not accessible, thereby reducing the level of compliance with standard infection prevention precautions. Every health facility should have a continuous supply of PPE and it should be made accessible to the health workers to use.

Health workers do not comply with standard infection prevention precautions because there is no supportive supervision on the use of standard infection prevention precautions in primary health care centers and because infection prevention policies are not enforced. There is a need for a continuous provision of supportive supervision on the compliance of standard infection prevention in primary health care facilities, and penalties should be meted out to defaulters. The policies on infection prevention should be enforced in primary health centers, thereby preventing both staff and patients from getting infected.

5.3.1 Implications

This study is important for public health because the results, once released, can raise awareness about "factors affecting compliance with standard infection prevention precautions" in primary healthcare settings, reducing the incidence of nosocomial and blood/fluid infections like COVID-19.

5.4 Recommendation

i. The Government of Bayelsa State, through the Bayelsa State Primary Health Care Board, NGOs, philanthropists, public health personnel, etc., should ensure that PPE is available at health facilities for health workers to use; provide supportive supervision to community health practitioners in the primary health centers; conduct continued training on the use of PPE, and enforce the policy on standard infection prevention precautions in primary health care centers.

ii. Compliance with standard infection prevention precautions should be enforced among community health practitioners for protection against bloodborne infections and COVID19 in particular.

5.5: Recommendation For Further Research

Further studies should be conducted to establish definitive cause-and-effect relationships between compliance with infection prevention and explanatory variables among community health practitioners..

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APPENDICES

Appendix i: Research instruments

A. Questionnaire

"Factors affecting the compliance with standard infection prevention precautionon among community health practitioners in Bayelsa State, nigeria".

Dear Sir/Madam,

The following questions are intended to determine the factors affecting community health practitioners' adherence to standard infection prevention precautions when providing health care services to their patients or clients. The study is purely for research purposes. Your help is greatly appreciated, as all details will be kept strictly confidential.

Thank you.

Administered by_____

Serial No.: _____Date: _____ Time: _____

State: _____ Senatorial District: _____

Name of health facility: _____

BIO-DATA OF RESPONDENTS

1. age ……

2. gender: 1=male [ ] 2=female [ ]

3. religion: 1=christianity []2= muslim [ ] 3=africa traditional religion

4 others: (specify) …….

4. marital Status: 1=married [ ] 2=single [ ] 3= divorced [ ] 4=separated [ ]

5=widow/widower [ ]

Years of Service: ----------

SECTION B

The level of awareness of standard infection prevention precautions

1	**Items**	**SA**	**A**	**D**	**SD**
1	Standard infection prevention precautions" refers to the "bare minimum" of infection protection practices that all patients must follow.				

2	Hand cleanliness, the use of PPE, and safe injections were basic precautions for infection prevention.				
3	Standard infection prevention precaution rules state that all human blood, body fluids, and other potentially infectious materials should be handled as if they are infectious				
4	Standard infection prevention precaution rules state that all of our patients should be handled as if they have possible blood-borne diseases that could infect the caring healthcare staff.				
5	Needle sticks, burns, cuts from other sharps, blood splashes onto mucous membranes, broken skin with infected blood, and bites can all lead to infection.				
6	Standard care should be taken for all patients, regardless of their condition, as well as all infected equipment and material				
7	When deciding which protective barriers are needed, use your best judgment				

8	You received training onstandard infection prevention precautions in the health facility				

SECTION B

Level of compliance with standard infection prevention precautions among community health practitioners in Bayelsa State

A	**Hand Washing**	**Always**	**Sometimes**	**Never**
1	Hand washing/disinfectant when contacting different patients?			
2	Washing hands/disinfectant when removing gloves?			
3	Washing hands/disinfectant after exposure to blood, body fluid, or secretion?			
B	**Personal Protection Equipment (PPE)**			
	In the following procedure/condition, gloves must be worn.	**Always**	**Sometimes**	**Never**
1	'I wear gloves when drawing blood from patients'			

2	I wear gloves during the disposal of stool and urine			
3	I wear gloves when in contact with a patient's damaged skin			
4	I wear gloves when in contact with the mucous membranes of patients.			
5	I wear gloves even when I'm not dealing with patients in the facility.			
6	I wear gloves when administering intramuscular and hypodermic injections			
7	I wear gloves when changing the dressing			
8	I wear gloves when cleaning bloodstain			
9	'I wear gloves during venous puncture'			
10	I wear gloves when I am in contact with blood samples.			
11	I wear gloves when recapping or reusing syringes			
12	'I wear protective goggles to protect the eyes during procedures where necessary'			

13	'I Wear protective gowns during procedures that could result in the rapid and effective spraying of blood, body fluid, secretion, or excretion'			
14	'I wear protective caps and shoes to protect hairs or shoes where necessary'			
15	'I wear a face mask during procedures that might induce the spraying of blood, body fluid, secretion, or excretion.'			
C	**Safe Injection Practice**	**Always**	**Sometimes**	**Never**
1	I use auto destructible injections on patients or clients?			
2	I recap needles before discarding them?			
3	I dispose of your sharps into the safety box after use?			
4	On the same patient, I use a new needle for another prescription.			
5	I burn the contents of the safety box in an incinerator.			

SECTION C

Factors affecting compliance with standard infection prevention precautions among community health practitioners in Bayelsa state

S/NA	**In Bayelsa State, Nigeria, whatindividual factors influence community health practitioners' adherence to standard infection prevention precautions on the use of PPE?**	**"Always"**	**Sometimes**	**Never**
1	I don't wear gloves because they make it difficult to feel veins.			
2	The use of PPE prevents me from being infected.			
3	I feel discomfort while performing skills using the PPE			
4	I don't use the PPE because I don't know how to use it.			
B	**What work-related factors affects compliance with standard infection prevention precautions among community health practitioners**	"Always"	"Sometimes"	"Never"
1	'Workload due to a shortage of staff makes it difficult for			

	me to use the PPE’				
2	The patient’s discomfort is an obstacle to the use of PPE.				
3	Emergencies, do not have the timeto follow standard precaution on infection prevention				
C	**What are the primary health care systemic factors affecting compliance with standard infection prevention precautions among community health practitioners?**	”Always”	“Sometimes”		“Never”
1	Unavailability of supervision on the use of standard precaution				
2	PPE is available				
3	No accessibility to available PPE				
4	Personal Protective Equipment (PPE) is unavailable				

5	Management supports the use ofstandard precautions in the clinic.			
6	There are no policies to control the spread of infection.			
7	No training programme on the use of PPE			
8	None has challenged me when I don't adhere to standardprecautions			

B: Focus group discussion

i. “What are the factors that motivate you to follow standard infection prevention precautions while performing your responsibilities to your patients?

ii. What "work-related factors affect your compliance with standard infection prevention precautions in primary health care centers in Bayelsa State, Nigeria?

iii. How do you think the “Primary Health Care Board's management will better assist in theimplementation of standard precautions in the prevention of infection?”

C: Key informant interview

1. Are you a member of the Bayelsa State Primary Health Care Board's HealthManagers?
2. Which of the following positions do you hold?
3. . Tell us about infection management policies in primary care and how they are applied.
4. What do you know about standard infection-prevention precautions in hospitals?
5. How much do Community Health Professionals receive infection prevention trainingin Primary Care?
6. What kind of infection-prevention training has been provided to Community Health Practitioners in the course of their work?

Appendix ii: Letter of authorization/ethical clearance certificate

Mount Kenya University

REF: **MKU/ERC/1838**
TO: **DORIS ATIBINYE DOTIMI**

Date: 23 June 2021

REG: **MPH/2019/42596**

Dear Sir/Madam,

RE: FACTORS AFFECTING THE COMPLIANCE WITH STANDARD PRECAUTION ON INFECTION PREVENTION AMONG COMMUNITY HEALTH PRACTITIONERS IN BAYELSA STATE, NIGERIA.

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **911.** The approval period is **23/06/2021 - 22/06/2022.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Peter G. Kirira
Chairman, Mount Kenya University IERC

GOVERNMENT OF BAYELSA STATE OF NIGERIA
MINISTRY OF HEALTH

Fax: 089 – 490257
Telephone: 089-490257, 49035

26th July, 2021

BAYELSA STATE HEALTH RESEARCH ETHICS COMMITTEE (BSHREC)
"NOTICE OF FULL APPROVAL"

Re: FACTORS AFFECTING THE COMPLIANCE WITH STANDARD INFECTION PREVENTION PRECAUTIOTIONS AMONG COMMUNITY HEALTH PRACTITIONERS IN BAYELSA STATE, NIGERIA

To: Doris Atibinye Dotimi
Mount Kenya University
Thika,
Kenya

Date of receipt of valid application: 23rd July, 2021
Date of final determination of research for approval: 26th July, 2021
Approval Number: BSHREC/Vol. 1/21/13

I am directed to convey **'Full Ethical Approval'** in favour of; ***"factors affecting the compliance with standard infection prevention precautions among community health practitioners in Bayelsa State, Nigeria"*** as indicated in your letter of request for ethical approval. This expeditious approval is given in line with the provisions of approved bio-medical research ethics standards and guidelines. The effective date of this approval is today, 26th July, 2021 and expires in 12 months.

Kindly inform the BSHREC in writing, where extension due to unforeseen delay in completion of your research beyond the time assigned is required. Please note that no participant accrual or activity relating to this research may be conducted outside the approved date. All informed consent forms used in this study must be within the BSHREC approved duration of the study.

However, in case of Multi-Year Research, effort must be made to submit your annual report to the BSHREC early enough to obtain renewal of your approval to avoid disruption.

The Bayelsa State Health Research Ethics Committee (BSHREC) wishes to request you to comply with all institutional guidelines, rules, regulations and the tenets of the code of conduct of research ethics. You are further requested to submit a copy of your final report on this research to the BSHREC whenever it is ready. No changes are permitted in this research without prior approval by the BSHREC. The BSHREC reserves the right to conduct compliance visit to your research site without prior notification.

Please accept my warm regards and Congratulations!!!

Alabo Ateigbanyo
Secretary, BSHREC

GOVERNMENT OF BAYELSA STATE OF NIGERIA
MINISTRY OF HEALTH

Telephone: 089-490257, 49035

26th July, 2021

NOTICE OF EXPRESS PERMISSION

Re: FACTORS AFFECTING THE COMPLIANCE WITH STANDARD INFECTION PREVENTION PRECAUTIONS AMONG COMMUNITY HEALTH PRACTITIONERS IN BAYELSA STATE, NIGERIA

Name of Principal Investigator: Dr. Doris Atibinye Dotimi
Email: atibiwilcox@gmail.com
Tel: +2347016782320
Mount Kenya University
Thika, Kenya

Date of receipt of valid application: 23 July, 2021
Date when final determination of research was made: 26th July, 2021
Health Research Committee assigned number: BSHREC/Vol. 1/21/13

It is my pleasure to bring to your notice that the research described in the submitted protocol, the consent form, advertisements and other participant information materials have been reviewed by the Bayelsa State Health Research Ethical Committee (BSHREC) and you are granted an **'Express Permission'** to undertake your research on; ***"factors affecting the compliance with standard infection prevention precautions among community health practitioners in Bayelsa State, Nigeria"***. This Permission is dated 26/07/2021 and would last for one year. If there is delay in starting the research, please inform the BSHREC so that the dates for the permission can be adjusted accordingly.

Accept my warm regards,

Alabo Ateigbanyo
Secretary, BSHREC

(BSHREC)

NATIONAL ASSOCIATION OF COMMUNITY HEALTH PRACTITIONERS OF NIGERIA (NACHPN)
BAYELSA STATE SECRETARIAT

Our Ref:
All correspondence to the Secretary

OFFICE ADDRESS
No. 59 Baybridge Road,
Opp. Elder Debekeme's Avenue,
Baybridge, Kpansia, Yenagoa,
Bayelsa State.
Tel: 08034401403, 07016782320, 08081200755.

28th July, 2021

TO WHOM IT MAY CONCERN

RE: CLEARANCE TO OBTAIN BASELINE INFORMATION FROM COMMUNITY HEALTH PRACTIIONERS IN BAYELSA STATE

Please be aware that Doris Atibinye Dotimi of the Mount Kenya University has requested for a permission to do a study on "Factors affecting compliance with standard infection prevention precautions among Community Health Practitioners in Bayelsa State."

We thoroughly examined her paperwork and discovered that she has been given the approval to conduct the study for a 12-month period by the Bayelsa State Health Research Ethics Committee (BSHREC) of the Bayelsa State Ministry of Health. To perform health research within Bayelsa State, she does not require any further approval with another organization.

However, we will ensure that the institution where she would do the research and the community health practitioners in those institutions will provide her with all essential assistance during the period of the research. Additionally, we anticipate receiving the feedback on the findings of the study at the end of the research.

Dr. Igoni Wisdom
State Secretary
NACHPN

Doris Atibinye Dotimi

MPH/2019/42596

Thika, Kenya.

9th July, 2021

12/7/2021
SEC

The Chairman

National Association of Community Health Practitioners of Nigeria

Bayelsa State Chapter

Dear Sir/Ma,

Request for permission to obtain baseline information

I am a Master of Public Health student at Mount Kenya University with admission number MPH/2019/42596.

I'm writing to ask for permission to collect baseline data from community health practitioners for my master's thesis, which will examine "Factors affecting the compliance with standard infection prevention precaution among Community Health Practitioners in Bayelsa State".

I look forward to receiving a favourable response.

Yours faithfully,

Doris Atibinye Dotimi

08034401403

Chairman
Yes, Sir / Madam
12/7/2021

FACTORS AFFECTING THE COMPLIANCE WITH STANDARD INFECTION PREVENTION PRECAUTION AMONG COMMUNITY HEALTH PRACTITIONERS IN BAYELSA STATE, NIGERIA.

by Doris Atibinye Dotimi

Submission date: 24-Sep-2022 01:34PM (UTC+0300)
Submission ID: 1907752379
File name: MKU_CORRECTED_WORK_EDITED_post_graduate_24th_sept_2022.docx (231.08K)
Word count: 20085
Character count: 121147

FACTORS AFFECTING THE COMPLIANCE WITH STANDARD INFECTION PREVENTION PRECAUTION AMONG COMMUNITY HEALTH PRACTITIONERS IN BAYELSA STATE, NIGERIA.

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Appendix v: Alien data and Map of Bayelsa State and place locations

Taro Yemen's calculation for sample size

Formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size

N= Population size

e = Level of Precision or sampling error (which is $0.05)^2$

Beyelsa Central

1. **Total no. of Facility =82**

n= $82/1+82(0.05)^2$

n=82/1+82(0.0025)

n=82/1+0.205

n=82/1.205

n= 68 PHC Facilities were sampled in Bayelsa Central

2. Total no. of CHPs =211

n= $211/1+211(0.05)^2$

n=211/1+211(0.0025)

n=211/1+0.53

n=211/1.53

n= 138 CHPs were sampled in Bayelsa Central

10% Non-response rate= 10/100x 138= 13.8 (14)

3. No of CHP from each facility in Bayelsa Central Senatorial District

= Total number of CHP to be sampled/Total number of facilities to be sample

= 138/68 = 2.0 CHP to be sampled from each selected facility in Bayelsa Central Senetorial District.

Beyelsa East Senatorial District

1. **Total no. of Facility =64**

n= $64/1+64(0.05)^2$

n=64/1+64(0.0025)

n=64/1+0.16

n=64/1.16

n= 55 PHC Facilities were sampled in Bayelsa East Senetorial District

2. Total no. of CHPs =192

n= $192/1+192(0.05)^2$

n=192/1+192(0.0025)

n=192/1+0.48

n=192/1.48

n= 130 CHPs were sampled in Bayelsa East

10% non-response rate= 10/100x 130= 13

3. No of CHP from each facility in Bayelsa East Senatorial District

= Total number of CHP to be sampled/Total number of facilities to be sample

= 130/55 = 2.4 CHP to be sampled from each selected facility in Bayelsa East Senetorial District.

Beyelsa West Senatorial District

1. **Total no. of Facility =39**

n= $39/1+39(0.05)^2$

n=39/1+39(0.0025)

n=39/1+0.097

n=39/1.097

n= 35.5 PHC Facilities were sampled in Bayelsa West Senatorial District

2. Total no. of CHPs =108

n= $108/1+108(0.05)^2$

n=108/1+108(0.0025)

n=108/1+0.27

n=108/1.27

n= 85 CHPs were sampled in Bayelsa West Senatorial District

10% Non-response rate= 10/100x85= 8.5=(9)

3. No of CHP from each facility in Bayelsa West Senatorial District

= Total number of CHP to sampled/Total number of facilities to sampled

= 85/36 = 2.4 CHP to be sampled from each selected facility in Bayelsa West Senetorial District.

Total sample size of CHPs= 138+130+85= 353

Total of 10% Non-response rate= 14+13+9= 36

Therefore: Sample size= 389

Map of Bayelsa State, Nigeria

Consent Form

Researcher Name: DORIS ATIBINYE DOTIMI

Research Topic: Factors affecting the compliance with standard precaution on infection prevention among Community Health Practitioners in Bayelsa State, Nigeria.

'You are invited to participate in a research study exploring factors affecting the compliance with standard precaution on infection prevention among community health practitioners in Bayelsa State'. ''his is a consent form which is aimed at ensuring that you understand the study before deciding on whether to participate or not. Your participation may last for two weeks. The researcher's name is Doris Dotimi, an MPH student of Mount Kenya University, Thika'.

Background Information:

This is a research study which 'purpose' is to assess the individual, work-related and PHC system factors affecting Community Health Practitioners' compliance with standard precautions on infection prevention in Bayelsa State, Nigeria.

Study Inclusion

' 1) All Community Health Practitioners in Bayelsa State 2) Must be working in a government owned PHC facility 3) Must be willing to participate 4) Fluent in English or Izon Language.'

Procedures for participation:

- Sign a 'Consent form' after the contents have been 'explained and clarifications made to you. This may take 40 minutes'.
- You will participate in either filling the questionnaire, or in an' in-depth face-to-face interview that will last for 60 minutes' or a focus group discussion that will last for 60minutes where applicable.

- Allow the interview or focus group discussion to be audio recorded, if you are selected to participate in any.

- The questionnaire, focus group discussions or Interview questions will border on what you know about factors affecting the compliance with standard precautions on infection prevention in Primary health care facilities.

- When the in-depth interview or focus group discussion is completed, or questionnaire filled 'agree not to share the questions/response with anyone'.

- 'A summary of the findings will be brought to you to confirm if it agrees with your views and experience' if you participated in the focus group or in-depth face-to-face interview. This may require 40 minutes to complete.

- 'Final result will not indicate any thing that will identify you'.

Voluntary Nature of the Study

'This is a voluntary study. You are not under any obligation to participate in the study and will not be treated differently if you decide not to participate. You can withdraw if you decide not to participate at any point'.

'Risk and Benefits of participating'

'Being a participant will not pose any challenge to you. Minor risks that may be experience are stress and fatigue during the filling of the questionnaire' or one hour interview or focus group discussion. 'Benefits will be light refreshment and the opportunity to make one's opinion heard'.

Confidentiality:

'Your name or anything that will identify you will not be included in the final result. All information provided remains confidential and only be used for the study'. 'No illegal information will be disclosed without the participant's consent'. 'A password protected computer will be used to secure data'.

'Conflict of Interest'

This is for "academic purpose". "No conflict of interest".

Note: "Questions about the study can be directed to the researcher (Doris Dotimi) and questions about their rights as participants can be addressed to MKU IERC".

"You may keep the copy of the consent form if you wish".

Doris Dotimi

Tel: +2348034401403

E-mail: atibiwilcox@gmail.com

The Chairman,

MKU IERC,

P.O.Box 342-01000,

Thika

E-mail: research@mku.ac.ke

"Statement of Consent":

I've "read and comprehended" the material and "chosen to join" in the study. "My signature" signifies my agreement to take part in the study."

Sign…… Date…….

Participant has given an informed consent to participate in this study.

Signature of researcher……. Date…….

: Research Time Schedule

S/N	Activity	Period
1.	Pilot study	June 2020
2.	Data collection	July – August 2021
3.	Analysis and interpretation	October 2021
4.	Final submission of project	May, 2022
5	Graduation	December, 2022