

**SCHOOL OF PUBLIC HEALTH  
COLLEGE OF HEALTH SCIENCES  
UNIVERSITY OF GHANA**



**ASSESSMENT OF SKIN INFECTIONS AMONG LONG-STAYED  
PATIENTS AT THE ACCRA PSYCHIATRIC HOSPITAL IN GHANA**

**BY**

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**DECLARATION**

I hereby declare that apart from specific references which have been acknowledged this Research is my own work put together.

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**Date**

**DEDICATION**

To God Almighty, my friends Gifty Asante, Afia Fosuaa, selorm kuffour and my sister Nana Owusua who have been of great help in the writing of this research.

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## ABSTRACT

**Background:** The high prevalence rate of skin infections is strongly linked to socioeconomic level whereas the incidence of skin infections is linked to poor hygiene, climatic factors and interpersonal transmission

**Aim:** The main aim of the study was to assess skin infections among long-stayed patients at the Accra Psychiatric hospital. The study also assessed facility based factors, as well as Patient based factors.

**Methods:** This research employed both qualitative and quantitative research design to address the stated objectives and draw conclusions. The study population was made up of 7,803 patients admitted to the hospital for more than one month and were either diagnosed of skin infections or not during their stay at the hospital. A sample size of 380 folders of the patients admitted were drawn for the study. A retrospective review of these folders of the patients admitted for more than a month from the period of 2013 to 2017 were randomly reviewed to document skin infection types. During the analysis inferential statistics were employed. The data was analyzed using descriptive and inferential statistics. Also patients who are still on admission and have been diagnosed of skin infections during their stay were interviewed. The interviews were analyzed using content analysis.

**Results:** The types of skin infection recorded at the hospital include Acne, Allergic Dermatitis, Boils, fungal dermatitis, eczema, pruritis, tinea coporis, dermatitis, pityriasis versicolor, scabies, seborrheic dermatitis, dermatomania, diaper rash, foot rot, chicken pox, chronic skin infections, folliculitis, herpes simplex, impetigo, miliary rash, popular urticaria and Cellulitis etc. However out of the (n=380) patients, 63.7% were males,

46.8% had skin infections with cellulitis (19.1%) and fungal dermatitis (18.0%) being the most prevalent of the infections.

The results revealed that patients with SHS/ A level/O level are more likely to have skin infection as compared with students with no education. The p-value of 0.026 (which is less than the 0.05 significance level) shows that the relationship is significant. Females are less likely to have skin infection than males. The p-value of 0.03 (which is less than the 0.05 significance level) shows that the relationship is significant. Patients who have stayed in the hospital for 1 to 5 years were more likely to get skin disease than patients who have stayed for less than a year. Patients who are age 46 to 55 years are less likely to get skin disease than patients who were age 25 years and below.

When asked about the facility-based factors which may predispose patients to skin infections all the interviewees said the environmental conditions were bad. . One of the male patients elaborated that *“there is odor in the bathrooms and the wards since some patients urinate in small gutters inside the ward. There are also feaces in the toilet most of the time because patients do not flush due to water shortage and regular cleaning is not done by the cleaner. The mattress I sleep on is dirty and I suspect that might have caused the skin disease”*.

**CONCLUSION:** Some skin infections were recorded in long-stayed patients' folders at the APH. The most prevalent of these skin infections identified were cellulitis and fungal dermatitis. Younger and male patients on admission at the APH were more likely to have skin infections compared to older and female patients.

**LIST OF ABBREVIATIONS AND ACRONYMS**

**APH:** Accra Psychiatric Hospital

**CDC:** Centre for Disease Control and Prevention

**ECT:** Electroconvulsive Therapy

**OPD:** Out-patient Department

**VIP:** Very Important Personality

**WHO:** World Health Organization

## DEFINITION OF TERMS

**Admission:** The act or process of accepting someone into a hospital, clinic, or other treatment facility as an inpatient.

**Adults:** A person who has attained the age of full legal responsibility, mostly 18 years.

**Assessment:** An act evaluating or estimating the nature, ability or quality of something

**Folders:** A medical record including a variety of types of notes entered over time by health care professionals, recording observations and administration of drugs and therapies, test results, x-rays, reports etc.

**Facility based factors:** Factors believed to be caused by the things in the facility

**Facility:** A place, especially includes buildings, where a particular activity happens.

**Infections:** Invasion of the body by harmful organisms such as bacteria ,fungi, protozoa or virus. **Long-stayed:** Denoting to people staying somewhere for a long time.

**Lucid interval:** Refers to a brief period during which an insane person regains sanity that is sufficient to regain the legal capacity to contract and act on his/her own behalf.

**Minors:** A person under age (below 18 years) of full legal responsibility.

**Nosocomial infections:** An infection whose development is favored by a hospital environment, such as one acquired by a patient during a hospital admission.

**Overcrowding:** Condition where more people are located within a given space than is considered tolerable from a safety and health perspective depending on current environment.

**Patient-related factors:** Factors believed to be caused by individual patients.

**Psychiatric hospital:** An institution where patients with psychiatric conditions live while receiving treatment.

**Personal hygiene:** Involves those practices performed by an individual to care for one's bodily health and wellbeing, through cleanliness.

**Patient:** A person receiving or registered to receive medical treatment.

**Prevalence:** The ratio of the number of occurrences of a disease or event to the number of units at risk in the population.

**Skin:** The outer covering of the body consisting of an outer layer, the epidermis and an inner layer the dermis. **Sanitation:** Promotion of hygiene and prevention of disease by maintenance of sanitary conditions (as the removal of sewage and trash) often used attributively.

## CHAPTER ONE

### INTRODCUTION

#### 1.1 Background

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Healthcare facilities are described as places where patients with health problems or conditions go for treatment or care which is usually provided by either a specialist and/or other care professionals (Codinhoto et al., 2009). Thus when it comes to the healing process and well-being of patients and their families, the physical environment has a tremendous effect on the process and this has the tendency of contributing to the reduction of errors, infections and falls (Huismana et al., 2012). The environment of the hospital includes the water-supply and sanitation facilities for patients, health-care staff as well as visitors. This implies that a health facility that does not provide adequate condition (water-supply and sanitation) leaves the patients and health workers at the risk of acquiring infections (Codinhoto et al., 2009). A patient is supposed to come out of a health center well and not with infection. Therefore, an infection that is not present in a patient at the time of admission to a hospital but developed during the course of stay in the hospital is known as Nosocomial infections or Hospital-acquired infection (Huismana et al., 2012).

The human skin is made up of thin and variable thickness with two layers: the epidermis (outer) and dermis (inner). It serves as a unique shield that protects it against penetration by various biological agents, chemical agents or mechanical forces. The skin also limits the water loss from the body as well as protects the body against the effects of natural and artificial light, cold or heat. As the largest organ in the body, the skin functions as a

protector of the body from noxious substances be it toxic chemicals, prolonged or repeated exposure to water or ultraviolet radiation is the skin (English, Dawe & Ferguson, 2003). However, skin diseases such as contact dermatitis, chemical depigmentation, and skin cancer and halogen acne can be as a result of the skin being exposed to harmful substances. Most of the environmental exposure to harmful substances occurs at work, home i.e. during normal day-to-day and at health centers (World Health Organization, 2005).

The high prevalence rate of skin infections is strongly linked to socioeconomic level, whereas the incidences of skin infections are linked to poor hygiene, climatic factors and interpersonal transmission (World Health Organization, 2005). Also, other factors that can lead to increase in the prevalence of skin infections are medical resources, living condition, seasons, climate, geographical area, socioeconomic status, and genetic background (Hossenbaccus & Jeewon, 2014). In Netherlands, a research conducted by the Continuous Morbidity Registration (CMR) Department of Family Practices revealed that skin diseases accounted for 12.4% of all diseases attended to by family physicians, (Verhoeven et al., 2008). Similarly, in Mauritius, there is a high prevalence of 22% skin problems especially in infants and toddlers. These problems are mostly eczema, skin rashes and nappy rashes (Hossenbaccus & Jeewon, 2014). In Nigeria, the high prevalence of skin infections was as a result of poor parental supervision, ignorance or child neglect and it is due to parents who are illiterates and not attained any form of education (Oyedeji et al., 2006).

The pattern of skin infections may differ from one country to other. Most skin infections are found in developing countries than developed countries. Some of the common skin infections in developing countries include pyoderma, ringworm, boils, chicken pox and eczemas. These skin infections can also be common in developed countries (Balai et al.,

2012). The pattern of skin infections can be attributed to climate, culture and socio-economic status. Furthermore, an unpublished survey by the International Foundation of Dermatology indicated that the pattern of skin diseases varies from country to country even in developing countries. Using nine countries across the world namely: Australia (Northwest Territory), Ethiopia, Indonesia, Mali, Mexico, Mozambique, Senegal, Tanzania, and Thailand) as well as poor regions in other tropical environments from Mexico to Madagascar, the survey indicated that the main skin conditions at the community levels were scabies, pyoderma, pediculosis and eczema (Hay et al., 2016).

There is a need to avoid nosocomial infections in health centers since patients are expected to be well after visiting the hospital and not come out with infections. Thus measures that can be taken to prevent the spread of skin infections in the hospital include separating the source from the rest of the hospital and cut off any route of transmission (English, Dawe & Ferguson, 2013). Based on this background, this study aimed at assessing skin infections among long-stayed patients at the Accra Psychiatric Hospital.

## **1.2 Problem statement**

One of the most common illness affecting human beings is skin infections. It pervades all cultures, occurs at all ages, and affects between 30% and 70% of individuals, with even higher rates in at-risk subpopulations (Hay et al., 2013). Some skin diseases commonly found in Africa include scabies, tinea, urticarial, abscess, Eczema. Its detrimental effects on health range from physical incapacity to death (Basra & Shahrukh, 2009). Social factors such as poverty, affluence, inequality, education, and access to health care all have an important role in the epidemiology of skin disease (Gibbs, 1996). Also the high prevalence rate of skin infections is due to low level of socioeconomic status and the incidence of skin

infections is due to climatic factors, poor personal hygiene as well as interpersonal transmission (WHO, 2005).

According to 2016 Ghanaian media reports, Accra Psychiatric Hospital is afflicted with problems such as poor housing, poor sanitation, over population, lack of resources, poor drainages, inappropriate nutrition among other factors. All these can aid in the spread of nosocomial infections such as skin diseases among long stayed patients on the ward. Skin diseases have a major impact on the lives of patients and their families thus it is important that hospitals manage their health-care waste in order to prevent the spread of bacteria that can cause infections including skin diseases (Hay et al., 2016). Though authorities of APH have done much to improve some of the environmental conditions by renovating some of the wards and depopulating the patients by integrating some of the patients back into the community for community psychiatric care, some of these problems such as sharing of personal items by patients, poor sanitation, exposure to the weather can still be identified on some of the wards in the hospital.

### **1.3 Objective of the study**

#### **1.3.1 General objective**

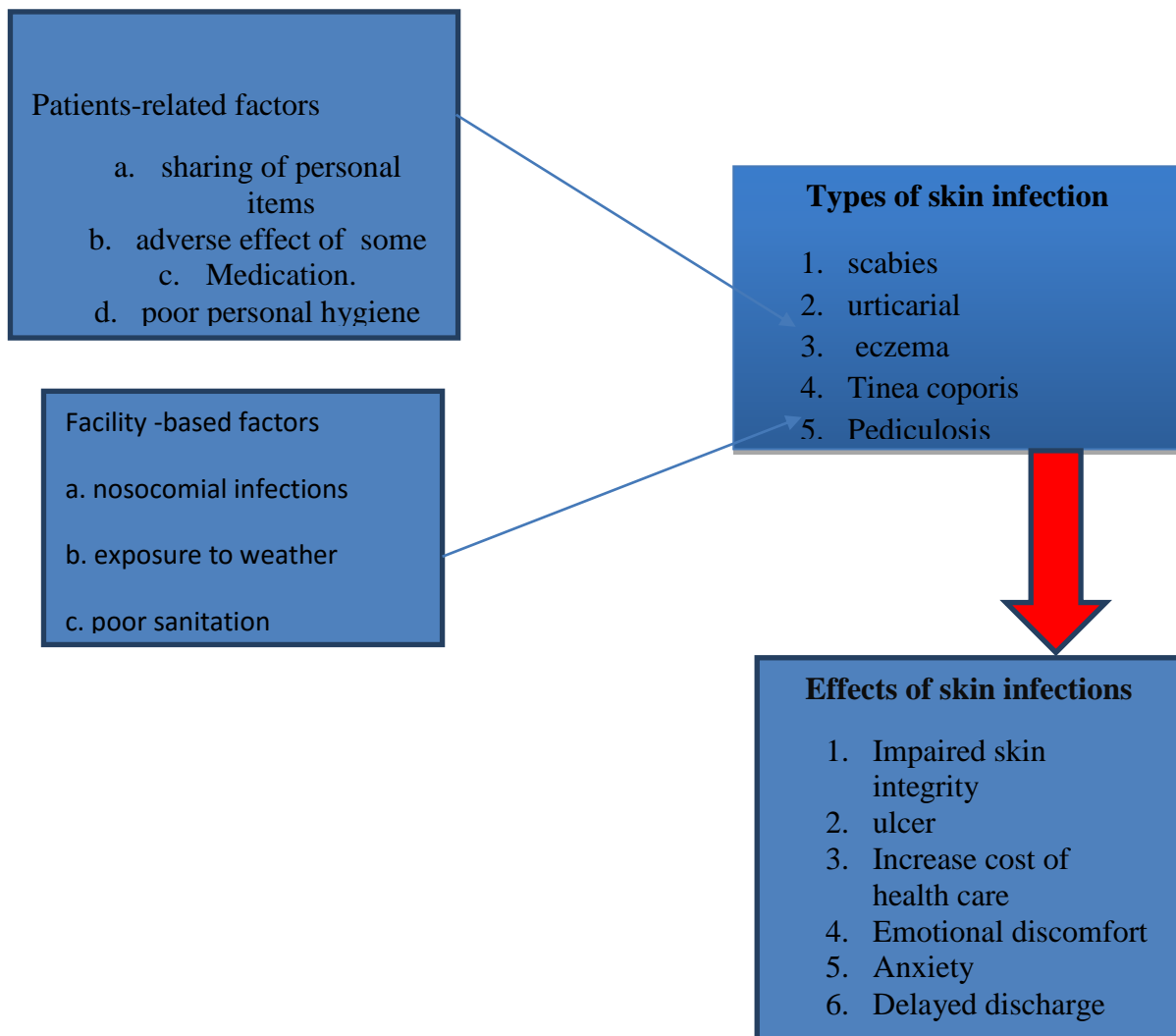
To assess skin infections among long-stayed patients at the Accra Psychiatric Hospital in Ghana.

#### **1.3.2 Specific objectives**

- i. To determine the prevalence and the types of skin infections among long-stayed patients at the Accra Psychiatric Hospital
- ii. To identify facility-based factors that may be responsible for skin infections among long-stayed patients at the Accra Psychiatric Hospital.

- iii. To identify Patient-related factors that may be cause of skin infections among long-stayed patients at the Accra Psychiatric Hospital.

#### 1.4 Conceptual framework



**Figure 1: Conceptual frame work showing factors that may lead to skin infections among patients**

**Figure.1** above shows the pathway by which patient factors and facility based factors can predispose patients to types of skin infections such as scabies, urticarial, eczema, tinea coporis and pediculosis which can lead to some health effects such as anxiety, impaired skin integrity, delayed discharge and emotional discomfort.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter presents the review of related literatures found in books, magazines, journals and online articles that are relevant to the study. The topics reviewed includes; the prevalence of skin infections among patients, the causes of skin infections among patients, the effect of skin infections among patients, and the types of skin infections among patients.

#### 2.2 The prevalence of skin infections among patients

The important cause of mortality and morbidity among patients who have been hospitalized and a major therapeutic challenge for health workers is skin infection (Huismana et al, 2012). The rate at which skin infection increases or decreases can affect the performance of health workers as well as the number of patients they take care of (Hossenbaccus & Jeewon, 2014).

A survey conducted by Standfast, Michelsen, Baltch, Smith (1984) among 572 acute and long-term care patients in Albany Veterans Administration Medical Center revealed presence of infection through patient examination and chart review. The results from the study showed that the total number of clinically significant infection was 178. Thus the prevalence rate of nosocomial infection was the highest on the intermediate service i.e. long-term medical care. Similarly, the results found that the site with the highest nosocomial infection rates urinary tract (10.7), skin and subcutaneous tissues (5.1), and surgical wounds (3.0) per 100 patients. The results from the study implies that nosocomial

infections increased with length of hospital stay which explains the higher rate on the Intermediate Service.

A similar study conducted by Ali (2010) on prevalence of skin diseases in rural Erbil revealed that the overall prevalence of skin diseases was 36.3%. The study also revealed that the overall prevalence of skin disease was higher among females than males and was increasing with rising crowding index. The aim of the study was to determine the burden of the skin diseases in the rural areas of Erbil governorate. Thus the study was a community based one where data regarding socio-demographic variables were collected from each family by a specially designed questionnaire.

A related study conducted by Ali, Surchi & Al-Hadithi (2010), on the prevalence of skin diseases revealed that the overall prevalence of skin diseases among respondents was 40.6%. The study also found that overall prevalence of skin diseases was significantly higher among females, younger age groups and those of low socio-economic status. The aim of the study was to determine the prevalence of skin diseases in respondents in Erbil city, and its relation to various socio-demographic factors. Therefore, the study randomly selected 6915 respondents using multistage random sampling technique. A specially designed questionnaire was used to collect data from each respondent regarding general socio-demographic variables.

In a study conducted by Zarrin et al., (2011) on the prevalence of superficial fungal infection among respondents, it was revealed there was 0.4% prevalence. The results from the study further showed that 61.5% were male whereas 38.5% were females. The aim of the study was to determine the prevalence, clinical types, and causative agents of superficial fungal infections among respondents in Ahvaz, Iran. Thus the study randomly

selected a total of 2827 respondents in order to examine for superficial fungal infections by using direct microscopy and culture based laboratory diagnosed method.

According to Samarai, A. (2009), the prevalence of skin diseases in Iraq also revealed that the overall prevalence of skin disease was 27%. Furthermore, the rate is the same in both males and females i.e. 27% whereas in the rural areas it was 28% and 26% in the urban areas. The study aimed at determining the prevalence of skin disease in Iraq where one community based study was performed in the southern area of Iraq. The study randomly selected 829 households from the urban areas and 716 households from the rural areas making up a total of 8000 individuals representing a wide range of ages.

### **2.3 The causes of skin infections among patients**

Patients are exposed to various diseases during hospitalization and skin infections is one (Mayol, 2009). Thus contact between a patient and a microorganism cannot by itself lead to the development of clinical disease because of the existence of other factors that can lead to skin infection among patients.

According to the World Health Organization (2002), Skin infection among patients can be caused by bacteria, fungi, parasites, and viruses. Similarly, other causes of skin infection are patients acquiring microorganism from another person in the hospital, patients' own flora and an inanimate object or substance that has been contaminated from another human source.

A related study conducted by Flores et al., (2009) revealed that the health care setting can also be a cause of skin infections among the patients. The author indicated that an environment where both the infected person and other persons are kept at the same place is not safe as patients with infections admitted to hospital are potential sources of infection

for other patients and staff. Similarly, a crowded condition within the hospital as well as frequent transfer from one ward to the other also causes skin infection

Cardona and Wilson (2015) also revealed that skin infection is caused by chronic inflammation (e.g., eczema or radiation therapy), preexisting skin infection (e.g., impetigo or tinea pedis), varicella, and edema due to venous insufficiency and trauma (e.g., insect bites, abrasions, penetrating wounds, or injection drug use).

Mayol (2009) also revealed that wounds: incisions (surgical cuts), burns and ulcers are all prone to infection and high-risk areas i.e. some areas like intensive care units in the hospital which are more likely to have infections are some of the causes of skin infections. The author revealed that a length of stay in the hospital and overuse of antibiotics can lead to resistant bacteria, thus making antibiotics become less effective.

In a study conducted by Mwaura (2011) on, it was revealed that the most common cause of skin infections are dermatophytes and opportunistic fungi. The study also revealed that even though dermatophytes do not threaten lives but they tend to affect the quality life of the patients because they can cause isolation in cases of deep lesions, depression and lack of self-confidence.

A study conducted by Ali (2010) revealed that the causes of skin infections among patients in the hospital include age of patient, impaired immunity, indwelling devices, frequent transfers to other units or facilities, exposure to other ill residents, suboptimal hand hygiene, unhygienic conditions and functional impairment.

#### **2.4 The effects of skin infection among patients**

According to DePietro & Hiugeria(2017) skin infection does not only spread beyond the skin, rather it can sometimes spread into the blood stream and organs which can become life threatening. This life threatening infection has led to death in some patients. Similarly, Ali (2010) indicated that skin infections increases patients stay in the hospital leading to an increase in the cost of accessing health care. In other words, most patients who contract skin infections in the hospital are compelled to stay in order to be treated even though skin infection may not be part of the reason why they are in the hospital. This intends lead to an increase in their budget as they had not prepared for extra fees for treatment. Furthermore, patients with skin infection tend to lose their self-confidence (Mayol, 2009). This implies that the spots left on the skins of patients makes them feel uncomfortable and thus they do not want to mingle with people because they perceive they might be mocked. Finally, skin infection causes patients to be emotionally unstable. Due to the evidence of skin infections i.e. spots, patients become frustrated in their attempt to clear the spots (DePietro & Hiugeria, 2017).

#### **2.5 The types of skin infection among patients**

The skin is supposed to protect the body against infections yet sometimes the skin itself becomes infected. Skin infections are as a result of a wide variety of germs accompanied with symptoms that varies from mild to severe. While mild infections can be treated with home remedies or over-the-counter medications, the severe infections may require medical attention.

According to DePietro & Hiugeria(2017), there are four types of skin infections: namely bacterial skin infections, viral skin infections, parasitic skin infection and fungal skin infections. The authors indicated that bacterial skin infections are often begin as small red

bumps that slowly increase in sizes. This type of skin infection is mild and easily treated with topical antibiotics. Also, virus is a cause of the viral skin infection which ranges from mild to severe. Viral skin infections come in the form of shingles, chicken pox, measles and hand, foot and mouth disease. Fungal skin infection is caused by fungus which is likely to develop in damp areas of the body. Some types of fungal skin infections are ringworm, yeast infection, diaper rash and athlete's foot. Lastly, parasitic skin infection is as a result of the presence of parasites. This infection does not only affect the skin, it also spread to the organs and bloodstream. The types of parasitic skin infection are lice, scabies and bedbugs.

According to Stulberg, Penrod & Blatny (2002), the 28<sup>th</sup> most common diagnosis in hospitalized patients is the bacterial skin infections. Likewise, Mistik, Uludağ, Kartal and Çınar (2015) indicated that a type of skin infection that is very common throughout the world is bacterial infection. Thus the most common bacterial skin infections identified are folliculitis, abscesses, cellulitis, ecthyma, carbunculosis, mycobacterium and scarlet fever.

Cardona & Wilson (2015) also identified bacterial infection as one of the types of skin infections. According to Cardona & Wilson (2015), one of the skin infections that are as a result of bacterial infection is cellulitis which develops due to bacterial invasion via breaches in the skin barrier.

According to the Center for Disease Control and Prevention (ND), even though a patient may be in the hospital with the hope of getting better, they may end up getting infections. Thus one of the types of infections a patient may acquire is the fungal infection. It was also indicated that fungal infections may be mild (skin rashes) while others can be deadly (pneumonia). It was further revealed that even though healthcare providers and hospital staff try to prevent infections, some situations and procedures are likely to increase fungal

infections in patients such as poor personal hygiene, poor ventilation, and exposure to organism in the environment.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the various methods that were adopted to help achieve the objectives of the study. This chapter focused on the study design, study area, study population, variables, sample and sampling techniques, study tool, quality control, data collection stage, data entry and processing, data analysis, ethical consideration/issues, description of subjects involved in the study, potential risks/benefits compensation, privacy/confidentiality, compensation, data storage and usage, voluntary consent, conflict of interest, proposal and funding information, assumptions, limitations, plan of work, budget and budget justification.

#### **3.2 Study design**

The research employed a cross sectional approach to address the stated objectives and draw conclusions. A retrospective data collection where folders of patients who were admitted in the hospital from 2013 to 2017 were reviewed and documented whether they had skin infections or not during their stay in the hospital. Also, patients who were still on admission and had been diagnosed of skin infection on the ward were interviewed for the study. Thus a mixed method, that is both the qualitative and quantitative methods was employed in answering research questions. According to Creswell (2009) the mixed methods is appropriate for this study because quantitative research makes room for the researcher to measure and analyze data as well as facilitates easier establishment of statistical relationship between an independent and dependent variable, while the qualitative method helps define more precisely the issues identified.

### 3.3 Study Site

The study was conducted at Accra Psychiatric hospital located at Adabraka in Greater Accra Region. This hospital serves patients from Greater Accra region, Eastern region, part of Central region and other places in the country. The hospital is one of the leading psychiatric hospital in the country. It also attends to patients with infectious diseases such as malaria, HIV/AIDS, Chicken pox, rabies and many others.

The hospital has the capacity to accommodate 1,000 patients at any given time. The Hospital is responsible for the treatment, welfare, training and rehabilitation of the mentally ill. In addition to that, it serves as a training centre for nurses, doctors and other health practitioners. (Accra Psychiatric Hospital, 2016). The hospital also offers Consultation, out-patient and in-patient management, laboratory services, teaching and research, occupational therapy services, alcoholic anonymous meetings and narcotics anonymous meetings services to clients. Among other services rendered include OPD services, clinical psychology services, electro convulsive therapy, 24 hour Pharmacy, laboratory services, VIP wards, special School for the mentally challenged, social work services, community psychiatry nursing, in-Service training unit, rehabilitation for alcohol abuse, teaching & research, public education (Accra Psychiatric Hospital, 2016).

To adequately perform the above services, there are twenty-two (22) departments. These are; the general administration department, O.P.D. (Out-Patients Department), nursing administration, environmental sanitation, Bio-Statistics (Medical Records), laboratory, pharmacy, security, catering, maintenance, laundry, central stores, procurement, welfare, tailoring, transport, accounts, psychology, electroconvulsive therapy (ECT), occupational therapy, public relations unit and sewing department (Accra Psychiatric Hospital, 2016).

### **3.4 Study population**

According to Creswell (2009), a research population is a specific pool of cases, individuals or groups of the individuals which the researcher wishes to investigate. The study population comprised patients who were admitted to the hospital between 2013 and 2017 for more than one month and were diagnosed or not diagnosed of skin infections while on admission. Folders of admitted cases from 2013 to 2017 were used to extract data. The number of folders of admitted cases from the period 2013 to 2017 were 7,803 (APH records Unit, 2017) at APH. In addition, ten (10) patients who were still on admission on the ward and had been diagnosed of skin infections were selected for interview.

### **3.5 Main Variables**

#### **The outcome variables**

- i. Skin infections diagnosed and recorded in patient folder
- ii. Effect of the skin infection

#### **The independent variables**

- i. Demographic
- ii. Causes of skin infections (facility-based factors and Patient-related factors)
- iii. Sharing of personal items
- iv. Poor personal hygiene
- v. Nosocomial infections
- vi. Poor sanitation
- vii. Effects of medication

### **3.6 Sample and sampling techniques**

Simple random sampling is the basic sampling technique where we select a group of subjects for study from a larger population. Each individual is chosen entirely by chance and each member of the population has an equal chance of being included in the sample. Every possible sample of a given size has the same chance of selection. Thus the sample for the study comprises of patients who were both diagnosed and not diagnosed of skin infections during their stay on the wards of Accra Psychiatric Hospital. Also, folders of patients who had skin infections while on admission from the period 2013 to 2017 were sorted for review at the study site. Simple random sampling technique was used to select the folders for the quantitative study and purposive sampling technique was adopted for selecting the ten (10) respondents for the qualitative study. According to Creswell (2009), simple random sampling is very useful because every member of the population has an equal chance of being included in the study. Also, according to Creswell (2009), purposive sampling technique helps to select the right respondent group to help achieve the objectives of the study. Thus both folders that have diagnosis of skin infection recorded and folders with no diagnosis of skin infections recorded in them were considered for the study.

#### **3.6.1 Sampling size determination**

The number of folders for admitted cases for the period 2013 to 2017 is 7,803 ((APH records Unit, 2017). Based on this population size, the minimum sample size was calculated using the formula below:

$$n = N / (1 + N[e^2])$$

Source: Galero-Tejero (2011).

Where n is the sample size, N is the population size, and e is the level of precision.

$$n = N / (1 + N [e^2])$$

$$n = 7803 / (1 + 7803 [0.05]^2) = 380.49$$

Thus, using a folder population of 7803, a sample size of 380 was drawn for the quantitative study. Also, ten (10) participants were considered for the qualitative aspect of the study.

### **3.7 Study tool**

The study designed a data extraction form and an observational checklist. The data extraction form and the observational checklist were used to obtain data from the folders of the patients and data on the environmental conditions of the Accra Psychiatric Hospital respectively. Also, an interview guide was used to collect data for the qualitative aspect of the study, where ten (10) patients who were on admission and had been diagnosed of skin infections, and are in their lucid interval were interviewed, recorded with tape recorder and later transcribed for the study.

### **3.8 Data collection**

Permission was sought from the management of the Accra Psychiatric hospital in order to collect the data. For quantitative data collection, folders of patients admitted for more than one month from 2013 to 2017 was assessed for diagnosis and non-diagnosis of skin infections and their demographic data was also documented. The record staff of the hospital were informed about the study so they assisted in the collection of data from the folders. An observational checklist was also used to identify facility based factors and patient factors that may be responsible for skin infections among patients in APH. A period of twenty one (21) days was used for collecting the data.

For the qualitative aspect of the study, data was collected by face to face interview .The interview session was arranged for the Principal Investigator and the participants. Participants included ten(10)patients in their lucid who have been diagnosed of skin infections during their stay in the hospital. The interviews were recorded with a tape recorder and later transcribed for analysis.

### **3.9 Data analysis**

Data obtained from the data extraction form and the observation check list was coded and analyzed using the STATA. During the analysis inferential statistics was employed. Analyzed data was presented in the form of logistic regression models, frequency, charts and tables using Microsoft Excel.

The qualitative data was analyzed using a content analysis approach. Thus the data collected was transcribed unto a sheet with margins at the sides. Notes were made at the sides of the sheet. Thus, through the notes major and minor themes were identified. These themes helped to achieve the objectives of the study.

### **3.10 Ethical consideration**

Introductory letter specifying the objective of the study was obtained from the School of Public Health, University of Ghana and sent to the Accra Psychiatric Hospital to obtain permission for the study. The technique used also ensured that the privacy of respondents were not violated. Confidentiality and anonymity of the patients were greatly respected by not recording their names, contact numbers and addresses. Moreover, the right of consent of information was not compromised in that no information was recorded without the consent of the authority and individuals.

### **3.11 Ghana Health Services Ethical approval**

Before the commencement of data collection, ethical approval for the study was sought from the Ghana Health Service Ethical Review Committee and Development Division of the Ghana Health Services.

### **3.12 Approval from study area**

Permission and approval was sought from the Mental Health Authority and the administration of the Accra Psychiatric Hospital before data was collected.

### **3.13 Potential risks/benefits compensation**

The study did not cause any discomfort to participants. It is hoped that results obtained for this study will be used by policy makers and the hospital in particular to improve on health care delivery at the hospital.

### **3.14 Privacy/confidentiality**

Interviews were conducted in an enclosed place to ensure privacy. Quantitative data was also reported in aggregates to reduce possibility of tracing information gathered back to participants. This was done to ensure confidentiality of information that was collected from participants. Qualitative data was also depersonalized.

### **3.15 Compensation**

No compensation was given to the patients for participating in this research. Their input was however acknowledged and appreciated.

### **3.16 Data storage and usage**

The completed extraction forms were kept under lock and key in a cupboard, and the key was kept by the principal investigator. Data collected was transcribed and entered within 24 hours of collection, and was saved under a password known to only the principal investigator. Soft copy of the data was stored on a CD-ROM and external hard drive as well. All data collected will be kept by the principal investigator for 2-3 years to allow for the publication of research.

### **3.17 Voluntary consent**

Written consent form was provided for participant to sign. Consent forms were written in English. However it was interpreted into a language the participant understood. Thumb print or signature of those who agree to participate was obtained before inclusion. A signed copy of the form was given to the participants to keep. Participation was absolutely voluntary. Respondents were given the opportunity to opt out of the study anytime they wished to do so.

### **3.18 Conflict of interest**

Apart from the academic and public health importance, I have no other personal interest in the study.

### **3.19 Proposal and funding information**

This research was self-financed.

### **3.20 Assumptions**

- a. The study assumed that participants comprised both minors and adults.
- b. This study also assumed that Patients information about their condition were accurate.

### **3.21 Limitations**

- a. The study was a cross-sectional study as well as retrospective study, thus findings reflect only on what happened at that point in time.
- b. The study is a hospital-based study therefore the findings of this study cannot be generalized to the larger population.
- c. In addition, recall bias and attempts to please the healthcare provider may have influence on patients' responses to the interview questions.

## CHAPTER FOUR

### RESULTS

#### 4.1 Introduction

This chapter presents the results of the study. The quantitative results are first presented followed by the qualitative analysis.

#### 4.2 Demographic profile of patients abstracted from the folder

This section presents the demographic profile of patients used in the study. The gender, age, educational level and length of stay of the patients are presented.

**Table 4.1: demographic profile of respondents**

	Frequency (n=380)	Percentage (%)
<b>Gender</b>		
Male	242	63.7
Female	138	36.3
<b>Age (years)</b>		
≤ 25	60	15.8
26-35	102	26.8
36-45	61	16.1
46-55	135	35.5
≥ 56	22	5.8
<b>Educational level</b>		
No education	81	21.3
Primary/JSS	108	28.4
SHS/A LEVEL/O LEVEL	106	27.9
Tertiary	85	22.4
<b>Length of stay at hospital</b>		
Less than a year	199	52.4
1-5 years	74	19.5
6 to 10 years	53	13.9
10 years and above	54	14.2

As illustrated in Table 4.1, majority 242 (63.7%) of the patients were males and the others 138 (36.3%) were females. Also, out of the 380 patients, 135 (35.5%) of them were 46

years old, 102 (26.8%) were 26 to 35 years old, 61 (16.1%) were 36 to 45 years old, 60 (15.8%) were 25 years old and 22 (5.8%) of them were 56 years and above.

Out of the 380 patients, 108 (28.4%) belonged to the Primary/JSS educational group, 106 (27.9%) belonged to the SHS/A level/O level educational group, 85 (22.4%) belonged to the tertiary group and 81 (21.3%) were in the no educational background group.

Also, a little more than half 199 (52.4%) of the patients have been in the hospital for less than a year. 74 (19.5%) of the patients have been in the hospital for 1 to 5 years, 54 (14.2%) have been in the hospital for 10 years or more and 53 (13.9%) have been in the hospital for 6 to 10 years.

#### **4.3 Demographic profile of interviewees for qualitative study**

The interview involved four males and three females of the Accra Psychiatric Hospital. Most of the patients have been at the hospital for more than five years and few had been there for less than two years. All the patients had once been diagnosed of skin infection after admission to the hospital with other ailment,

#### **4.4 The prevalence and the types of skin infections among patients in the Accra psychiatric hospital**

Among the 380 patients recruited, 202 (53.2%) did not have any skin infections whereas 178 (46.8%) of the patients had skin infections.

**Table 4.2: Proportion of patients with skin infection**

<b>Skin infection</b>	<b>Frequency</b>	<b>Percentages (%)</b>
No	202	53.2
Yes	178	46.8
<b>Total</b>	<b>380</b>	<b>100.0</b>

As shown in Table 4.3, 34 (19.1%) have cellulitis, 32 (18.0%) had fungal dermatitis, 22 (12.4%) have allergic dermatitis, 14 (7.9%) had eczema, 8 (4.5%) had pruritis, 8 (4.5%) had tineacoporis, 6 (3.4%) had boils, 6 (3.4%) have dermatitis, 6 (3.4%) had pityriasisversicolor, 6 (3.4%) had scabies, 6 (3.4%) had seborrheic dermatitis, 4 (2.2%) had acne, 4 (2.2%) had dermatomania, 4 (2.2%) had diaper rash, 4 (2.2%) had foot rot, 2 (1.1%) had chicken pox, 2 (1.1%) have chronic skin infection, 2 (1.1%) had folliculitis, 2 (1.1%) had herpes simplex, 2 (1.1%) had impetigo, 2 (1.1%) had military rash and 2 (1.1%) had papularurticaria.

When the patients were asked the number of times they have experienced skin infection after visiting Accra Psychiatric Hospital, most of them said twice while few said thrice or more.

Furthermore, most of the patients noted that they were not told of the type of rash they had, while few said they had minor rash. One female patient further explained that “*the doctor diagnosed me of heat rash*”.

**Table 4.3: Types of skin infections**

<b>Skin infections</b>	<b>Frequency</b>	<b>Percent (%)</b>
Acne	4	2.2
Allergic Dermatitis	22	12.4
Boils	6	3.4
Cellulitis	34	19.1
Chicken pox	2	1.1
Chronic skin infections	2	1.1
Dermatitis	6	3.4
Dermatomania	4	2.2
Diaper Rash	4	2.2
Eczema	14	7.9
Folliculitis	2	1.1
Foot rot	4	2.2
Fungal Dermatitis	32	18.0
Herpes simplex	2	1.1
Impetigo	2	1.1
Miliary rash	2	1.1
Papularurticarial	2	1.1
PityriasisVeriscolor	6	3.4
Pruritis	8	4.5
Scabies	6	3.4
seborrhoeic Dermatitis	6	3.4
Tineacoporis	8	4.5
Total	178	100.0

#### **4.5 Facility based factors that may be responsible for skin infections among patients.**

##### **4.5.1 Environmental Sanitation**

When the patients were asked to describe the environment of the hospital, all of them, said it was bad. One of the male patients elaborated further stated that *“there is odor in the bathrooms and the wards since some patients urinate in small gutters inside the ward. There are also feaces in the toilet room most of the time because patients do not flush due to water shortage and regular cleaning is not done by the cleaner. He also said the mattress he sleeps on is dirty and suspects that might have caused the skin disease”*. A female patient also said, *“In the female ward there is no proper ventilation, and some of*

*the mattress we sleep on are dirty and the cleaners don't scrub and disinfect the place regularly*".

#### **4.5.2 Laundry, Shared items and medication**

The respondents were asked if they shared mattresses, sponge and towels, some of them said yes, three said they had their own items but once a while another patient may steal it and use it. All of them said after laundry all the clothes are put together for them to select the ones which fit them. However, all the patients believed the medication were not a primary cause of the skin infection.

#### **4.5.3 Nutrition and Food Safety**

Almost all the patients noted that the food served is not nutritious and well balanced enough but might not be a factor that caused the skin infection, one of the patients stated that *"the food served is mostly not warm enough"*. Another patient said *"compared to what is served at the VIP ward this is not a balanced diet and it's very unhealthy"*.

#### **4.6 Patient factors that may be causing skin infections**

As shown in the table 4.4, most 138(57.0) of the males had no skin infection. However, most 74 (53.6) of the females considered for the study had skin infection. The p-value of 0.045 (which is less than the 0.05) significance level shows that the relationship between gender and skin infection is statistically significant.

Most 44(73.3%) of the patients aged 25 years and below had skin infection. Also, most 58 (56.9) of the patients aged 26 to 35 years had skin infection. Again, most 35 (57.4%) of the patients aged 36-45 years had no skin infection while most 105 (77.8%) of the patients considered for the study also had no skin infection. Finally, most 20 (90.0) of the patients aged 56 year and above had skin infection. The p-value of 0.00 (which is less than the

0.05) significance level shows that the relationship between age and skin infection is statistically significant.

Most 52(64.2%) of the patients with no education had skin infection. Also, most 58 (53.7%) of the patients who had primary/JSS education had no skin infection. Again, most 70 (66.4%) of the patients who had SHS/A level/ O level had no skin infection while most 53 (62.4%) of the patients who had tertiary education had no skin infection. The p-value of 0.00 (which is less than the 0.05) significance level shows that the relationship between educational level and skin infection is statistically significant.

Most 63(31.7%) of the patients who had stayed in the hospital for less than a year had no skin infection. Also, most 56 (75.7) of the patients who had stayed in the hospital for 1 to 5 years had skin infection. Again, most 23 (43.4%) of the patients who had stayed in the hospital for 6 to 10 years had skin infection while most 29 (53.7%) of the patients who had stayed in the hospital for 10 years and over had skin infection. The p-value of 0.001 (which is less than the 0.05) significance level shows that the relationship between length of stay at the hospital and skin infection is statistically significant.

**Table 4.4: Per cent distribution of skin disease by characteristics of patients (n = 380)**

Variables	Skin infection		Chi-square	P-Value
	No	Yes		
<b>Gender</b>			4.002	0.045
Male	138 (57.0 )	104 ( 43.0)		
Female	64 (46.4)	74 (53.6)		
<b>Age</b>			71.479	0.00
25 and below	16 (26.7 )	44 ( 73.3)		
26-35	44 (43.1 )	58 (56.9)		
36-45	35 (57.4 )	26 ( 42.6)		
46-55	105 (77.8 )	30 (22.2 )		
56 and above	2 (9.1 )	20 (90.9 )		
<b>Educational level</b>			21.788	0.000
No education	29 ( 35.8)	52 ( 64.2)		
Primary/JSS	50 ( 46.3)	58 (53.7 )		
SHS/a level/o level	70 (66.0 )	36 (34.0 )		
Tertiary	53 (62.4 )	32 ( 37.6)		
<b>Length of stay</b>			46.182	0.000
Less than a year	136 (68.3 )	63 (31.7 )		
1-5 years	18 (24.3 )	56 (75.7 )		
6 to 10 years	23 (43.4 )	30 (56.6 )		
10 years and above	25 (46.3 )	29 ( 53.7)		

As shown in the Table.4.5 the odds patients with primary/JHS qualification as compared with patients with no education to get skin infection is 0.840. This suggests that patients with primary/JHS are less likely to have skin infection than patients with no education. The results are also statistically significant.

The odds of patients with SHS/ A level/O level as compared with patients with no education to have skin infection is 2.322. The results seem to suggest that patients with SHS/ A level/O level are more likely to have skin infection as compared with students with no education. The p-value of 0.026 (which is less than the 0.05 significance level) shows that the relationship is significant.

The odds of female patients as compared with male patients to have skin infection is 0.551. This seems to suggest that females are less likely to have skin infection than males. The p-

value of 0.03 (which is less than the 0.005 significance level) shows that the relationship is significant.

The odds of patients who have stayed in the hospital for 1 to 5 years as compared to patients who have stayed for less than a year to get skin disease is 1.192. This suggests that patients who have stayed in the hospital for 1 to 5 years are more likely to get skin disease than patients who have stayed for less than a year.

The odds of patients age 46 to 55 years as compared to patients who are age 25 years and below to get skin disease is 0.144. This suggests that patients who are age 46 to 55 years are less likely to get skin disease than patients who are age 25 years and below.

The odds of patients aged 56 years and above as compared to patients who are age 25 years and below to get skin disease is 0.043. This suggests that patients who are age 56 years and above are less likely to get skin disease than patients who are age 25 years and below.

During the interview session, almost all the patients said that they bath once daily, few said they bath twice. One patient said “sometimes when there is water shortage it is difficult for us to observe proper personal hygiene”

Also, patients said that they do share clothes sometimes and some of the patients do not wash their clothes frequently unless it is taken to the laundry for washing which is not on a regular basis.

**Table 4.5: Logistic Regression (Patient-related factor variables and skin disease)**

<b>Skin disease versus no skin disease</b>				
<b>Variables</b>	<b>Odds Ratio</b>	<b>95% C I</b>		<b>P-Value</b>
		<b>Lower</b>	<b>Upper</b>	
<b>Gender</b>				
Male ( <i>ref.</i> )	1			
Female	.551	.322	.945	0.030
<b>Age(years)</b>				
25 and below ( <i>ref.</i> )	1			
26-35	.777	.136	4.455	.777
36-45	.327	.062	1.739	.190
46-55	.144	.026	.804	.027
56 and above	.043	.008	.222	.000
<b>Educational level</b>				
No education ( <i>ref.</i> )	1			
Primary/JSS	0.840	2.196	10.669	.000
SHS/A level/O level	2.322	1.105	4.883	.026
Tertiary	.713	.340	1.496	.371
<b>Length of stay</b>				
Less than a year ( <i>ref.</i> )	1			
1-5 years	1.192	2.086	.428	.000
6 to 10 years	1.734	3.696	4.317	.237
10 years and above	1.576	2.224	1.478	.251

## CHAPTER FIVE

### DISCUSSIONS

#### **5.1 The prevalence and the types of skin infections among patients at the Accra Psychiatric Hospital**

The results of the study revealed that most (53.2%) of the patients did not have any skin infection. However (46.8%) of the patients considered for the study had some skin infection. Some of the skin infections that were identified included cellulitis, fungal dermatitis, allergic dermatitis, eczema, pruritis, tineacoporis, boils, dermatitis, pityriasisversicolor, scabies, seborrheic dermatitis, acne, dermatomania, diaper rash, foot rot, chicken pox, chronic skin infection, folliculitis, herpes simplex, impetigo, miliary rash and papularurticaria. A similar study conducted by Ali (2010) on prevalence of skin diseases in rural Erbil revealed that the overall prevalence of skin diseases was 36.3%. The study also revealed that the overall prevalence of skin disease was higher among females than males and was increasing with rising crowding index.

Another related study conducted by Ali, Surchi and Al-Hadithi (2010), on the prevalence of skin diseases revealed that the overall prevalence of skin diseases among respondents was 40.6%. The study also found that overall prevalence of skin diseases was significantly higher among females, younger age groups and those of low socio-economic status. This study shows that the prevalence of skin infections at the Accra psychiatric hospital is higher (46.8%). Likewise, Mıstık, Uludağ, Kartal and Çınar (2015) indicated that a type of skin infection that is very common throughout the world is bacterial infection. Thus the most common bacterial skin infections identified are folliculitis, abscesses and cellulitis.

The participants of the study stated that since their admission to the Accra psychiatric hospital, some of them have had skin disease twice while few said thrice. The participants described the skin disease that they had as rashes. Similarly, the Center for Disease Control and Prevention [CDC] (ND) stated that one of the types of infections a patient may acquire at the hospital is skin rashes. Most of them however could not identify the type of skin disease they had because they were not told by the doctor.

## **5.2 Methodological Validity**

This study seek to assess skin infections among long-stayed patients of the APH. The prevalence and the types of skin infections were identified from patients' folders and recorded. Facility based and patient's factors which may predispose patients to skin infections were also identified. The only hurdle was retrieving the folders from archives. Also some of the diagnoses of skin infections was not identified nor recorded. A major limitation of the study was when the patients were made to recall their experiences of contracting and being diagnosed of skin infections. Since it was a hospital based study, the factors that may be causing the skin infections could not be generalized to all psychiatric hospitals. However the strength of the study was its ability to identify the types of skin infections diagnosed and its prevalence among the patients in the facility.

## **5.3 Facility-based factors that may be responsible for skin infections among patients**

The results of the study revealed that the hospital environment is not in a hygienic condition. Also, most of the participants described the environmental conditions in the hospital as bad and there is bad odor. One of the male patients elaborated further by saying *“there is odor in the bathrooms and the wards since some patients urinate in small gutters*

*inside the ward. There are also faeces in the toilet room most often because patients do not flush due to water shortage and regular cleaning is not done by the cleaner. He also said the mattress he sleeps on is dirty and suspects that might have caused the skin disease". A female patient also said, "In the female ward there is no proper ventilation, and some of the mattress we sleep on are dirty and the cleaners don't scrub and disinfect the place regularly".*

This was attributed to the fact that there was no constant flow of water as stated by some of the interviewees. This, lack of water makes it difficult for the patients to flush the toilet any time they use it. The results of the study also showed that some of the wards in the hospital are not well ventilated. This poor environmental condition can be a predisposing factor to skin diseases. Again, the sharing of personal items by the patient is another predisposing factor that may contribute to skin diseases. Other factors identified as being predisposing factors at the hospital that may contribute to skin disease is the poor nutritional quality of the food served which reduces the immunity of the patients.. According to a study conducted by Ali (2010) revealed that the causes of skin infections among patients in the hospital include, impaired immunity, indwelling devices, suboptimal hand hygiene, unhygienic condition and functional impairment. Another study conducted by Flores, Castillo, Franco and Huata (2009) revealed that the health care setting can also be a cause of skin infections amongst the patients. Also a study on the important cause of mortality and morbidity among patients who have been hospitalized and a major therapeutic challenge for health workers is skin infection (Huismana, Morales, Hoof & Kort, 2012). The rate at which skin infection increases or decreases can affect the performance of health workers as well as the number of patients they take care of (Hossenbaccus & Jeewon, 2014).

#### **5.4 Patient-related factors that may be causing skin infections**

The results revealed that patients with primary/JHS were less likely to have skin infection than patients with no education. The results also suggest that patients with SHS/ A level/O level are more likely to have skin infection as compared with students with no education. Also females are less likely to have skin infection than males. The results also revealed that patients who have stayed in the hospital for 1 to 5 years are more likely to get skin disease than patients who have stayed for less than a year. According to a study by Mayol (2009) the length of stay in the hospital can result in rapid development of skin infection. The results revealed that patients who are aged 46 to 55 years are less likely to get skin disease than patients who are 25 years and below. Also, patients who are aged 56 years and above are less likely to get skin disease than patients who are 25 years and below.

During the interview session, some of the patients noted that they bath once daily. Also, patients noted that they do sometimes share cloths and other personal items like sponge and towels sometimes and some patients do not laundry frequently but rely on the hospital laundry which is not frequent. One patient said ‘sometimes when there is water shortage it makes it difficult for us to observe proper personal hygiene’ .A study conducted by Ali (2010) revealed that the causes of skin infections amongst patients in the hospital include age of patient, impaired immunity, indwelling devices, frequent transfers to other units or facilities, exposure to other ill residents, suboptimal hand hygiene, unhygienic condition and functional impairment. According to the World Health Organization [WHO] (2002), Skin infection among patients can be caused by bacteria, fungi, parasites, and viruses. Similarly, other causes of skin infection are patients acquiring microorganism from another person in the hospital, patients’ own flora and an inanimate object or substance that has been contaminated from another human source. In a study conducted by Mwaura

(2011) on, it was revealed that the most common cause of skin infections are dermatophytes and opportunistic fungi.

## CHAPTER SIX

### CONCLUSION AND RECOMMENDATION

#### 6.1 Introduction

This chapter presents the conclusion and recommendation for the study. The conclusion is first presented followed by the recommendations.

#### 6.2 Conclusion

Skin infections is prevalent at the hospital. Also, the types of skin infection at the hospital include Acne, Allergic Dermatitis, Boils, Cellulitis, chicken pox, chronic skin infections, Dermatitis, Dermatomania, Diaper Rash, Eczema, Folliculitis, foot rot, fungal Dermatitis, Generalized Pruritus, Herpes simplex, Impetigo, Miliary rash, Papular urticarial, Pityriasis, Veriscolor, Pruritis, Scabies, Seborrhoeic dermatitis, Tineacoporis

Also, the hospital has a poor environmental condition and has very poor ventilation in some of the wards. Some, the patients are made share, clothes, mattresses, sponge and towels.

The study concluded that, patients who have stayed in the hospital for 1 to 5 years are likely to get skin infections.

#### 6.3 Recommendation

Based on the findings of the study, the following recommendations are made;

- i. The results of the study revealed that the hospital environment was poor and had bad odor. The study recommends that the management of the hospital should

- ensure that cleaners assigned to clean the hospital do it regularly and properly to help keep a clean environment.
- ii. The results of the study also revealed that some of the patients share personal cleaning items. The hospital management must ensure that patient-relatives and benevolent organizations provide individual cleaning accessories like sponge and towels for their patients.
  - iii. The results of the study also revealed that some there is irregular supply of water at the facility. The study recommends that, the hospital management must ensure that there is a constant flow of water at the hospital by providing water storage containers in every ward.
  - iv. That future studies on this topic should include other psychiatric hospitals in Ghana so as be able to generalize the results of the study.

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## APPENDICES

### **Appendix A: Introduction & Interview Protocol**

The rationale of this interview is to gather first hand data for the research which aims at assessing Skin Infections Among Long-Stayed Patients at the Accra Psychiatric Hospital. The identity of the interviewees will not be revealed in the final report of this research study. If permission is granted the interview will be recorded for the sake of ease and completeness as well as proper analysis of the points discussed.

### **Section A: PREVALENCE AND TYPES OF SKIN INFECTIONS**

1. Did you suffer any skin infection during your stay at the Accra psychiatric Hospital?
2. How long were you or have you been admitted at the hospital?
3. What types of skin infections were you diagnosed during your stay?
4. How often have been diagnosed of skin infection?

### **Section B: HOSPITAL-BASED FACTORS**

5. What is the state of the environmental conditions of some wards at Accra Psychiatric Hospital?
6. If poor mention, some of the environmental conditions which makes it poor.....
7. Would you say that the skin infection that affected you is/was as a result as poor sanitation, overcrowding, exposure to weather etc.?
8. If yes, mention some of the environmental factors that caused the skin infections?

**Section C: PATIENTS-RELATED- FACTORS**

9. Did you have any skin infection before your admission at the hospital?
10. Would you say that you acquired the skin infection while on admission?
11. If yes, how often do these skin infections affect you?
12. Would you say that some of the skin infections that affected you during your stay at the ward is as a result of poor personal hygiene, impaired immunity or sharing of personal items etc.?
13. Do you lack good nutritional diet?
14. If yes, do you think it is the cause of skin infections?
15. Do you react adversely or has any known allergy to some of their medications?
16. If yes, do you think some of the effects are skin infections?
17. Do patients on admission on the wards normally share personal items?
18. If yes, do you think it is a cause for the spread of skin infections among the patients?

**Section D: EFFECTS OF SKIN INFECTIONS**

19. Would you say that skin infections increase the cost of health care on you and your relatives?
20. Does/Did the skin infections you suffered on admission at the hospital cause you any anxiety and emotional discomfort?
21. Did the skin infection develop into ulcers or impair your skin integrity?
22. Did these skin infections cause you to be stigmatized among other inmates and staff?

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**DATA EXTRACTION SHEET**

**Assessment Skin Infections Among Long Stayed Patients at the Accra Psychiatric  
Hospital.**

<b>No.</b>	<b>Initials of participant</b>	<b>Age</b>	<b>Length of stay</b>	<b>Type of skin infection</b>	<b>Remarks</b>
1					
2					
3					
4					
5					

**UNIVERSITY OF GHANA SCHOOL OF PUBLIC HEALTH**



**Assessment Skin Infections Among Long-Stayed Patients at the Accra Psychiatric Hospital.**

**Observational Check List on Patient-related factors and Hospital-Based Factors that can cause Skin Infection**

<b>Observation</b>	<b>Tick (✓)</b>	<b>Remarks</b>
1. Sharing of personal items and clothes, combs, etc		
2. Personal hygiene by patient.		
3. Sitting and Picking of items from the floor		
4. Sharing or sleeping on other patients mattress		
5. Regular disinfection of surfaces and floor		
6. Proper storage of personal belongings such as clothes.		
7. Garbage eating		
8. Regular change of beddings		
9. Patient sits, play and walk bare footed on the floor		
10. Ventilation		
11. Presence of rodents such as cats, mice etc		
12. Presence of crawling and flying insects such as bed bugs ,cockroaches, lice, etc		
13. Overcrowding		

## **Appendix B: Consent Form**

### **School of Public Health**

### **University of Ghana**

#### **Project Topic**

Assessment of skin infections among long stayed patients at the Accra Psychiatric Hospital.

#### **Background**

Dear Participant, my name is Kwame Kyeremateng, a student of the School of public Health, University of Ghana, Legon. I am undertaking a study on Assessing skin infections among long-stayed patients at the Accra Psychiatric Hospital.

#### **Procedures**

Questions will be asked based on patients experience of skin infection during admission at the hospital. I would be grateful to have you as part of this study.

#### **Risk and Benefit**

The study will not cause any discomfort to participants. It is hoped that results obtained for this study will be used by policy makers and the hospital in particular to either improve upon health care delivery at the hospital. . No risk or discomfort is foreseen concerning your participation in this research apart from your time that will be spent in participating in the interview. It is anticipated that each interview will take 30-40 minutes on the average to complete .No direct benefit to participant, however the outcome of this study will be used to inform management on the prevalence and causes of skin infections among long-stayed patients at the Hospital to ensure quality of health care delivery.

**Right to refuse**

Participation in this study is voluntary and participants can choose not to answer any particular question or all questions. You are at liberty to withdraw from the study at any time. However, it is encouraged that you participate since your opinion is important in determining the outcome of the study.

**Anonymity and Confidentiality**

I would like to assure you that whatever information provided will be handled with strict confidentiality and will be used purely for the research purposes. Your data will not be shared with anybody who is not part of the research team. Data analysis will be done at the aggregate level to ensure anonymity. Your identity will not be disclosed in the material that will be published.

**Dissemination of results**

The results of this study will be mailed to you if you provide your address below. Before taking the consent, do you have any question you wish to ask about the study?

Yes.....

No.....

**Participants consent**

I.....

..., declare that the purpose of the study has been thoroughly explained to me in English language and Twi and I have understood. I hereby agree to participate in the interview.

Signature..... Date.....

Thumb print.....

**Interviewers Statement**

I, the undersigned, have explained this consent form to the subject in English language that he/she understands the purpose of the study, procedures to be followed as well as risks and benefits involved. The subject has freely agreed to participate in the study.

Interviewers signature.....

Date.....Address.....

If you have questions later, you may contact me on 0249505178/0201875319 or Administrator, Ghana Health Service Ethics Review Committee, Miss Hannah Frimpong-(0507041223/0243235225).