**HEALTH STAFF SHIFT BOOKING SYSTEM**

**(CASE STUDY: KADAMA HEALTH CENTRE III)**

BY

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# Chapter **1:Introduction**

## 1.0 Background of the Study

In the wide field of healthcare, the physical and mental status of health workers is a silent but very important issue that needs to be looked at before a worker is assigned the day to day professional duties by their managers since their services are a critical thing and one of the most important services to the people.

Health workers due to the fact that they are humans, face a lot of personal challenges that sometimes limit them from proper delivery of the services they trained to offer to the country. Such challenges include poor health of the workers themselves, sickness of their immediate relatives such their own children, husbands and wives, parents, and other personal problems and for such inconveniencies, health workers may not sometimes be able to work in the shifts allocated to them by their bosses.

The field of technology then offers a promising solution to not to prevent such personal problems from directly affecting the day to day provision of healthcare services by the field professionals. An automated system has ability to help health workers to book their periods of interest to work in.

This study aims to design and implement a comprehensive staff shift booking system that can address the need for health workers to tell their bosses in time about their personal inconveniences such that such are allocated to work in shifts of their own convenience.

Through intensive exploration of current management and practices at health centers , large clinics and large pharmacies, this study aims to contribute to better service delivery from professional health workers of all kind. The resulting system is intended to be user-friendly, adaptable and able to integrate easily with already existing healthcare systems.

## 1.1 Problem Statement

Timetabling workers is a complex, tiresome and time consuming activity to the managers, this gives hard time to managers especially when there is need to allocate working sifts to a bigger number of workers. Kadama Health Centre III like any other health facility has not yet seen that personal problems of health workers contribute to the poor service delivery of health care services in the institution especially to do with the exact shift a given worker is meant to work in. Currently, the head of Kadama Health Center III(clinical officer) assigns the different shifts to work in for the different health workers inconsiderate of their interest which brings about poor service delivery of the workers as some worker may be having a genuine personal commitment in a shift allocated to them to work in.

## 1.2 Main Objective

The main objective of the study is to develop a staff shift booking system which will allow health workers to book for their shifts of convenience to work in a given day.

## 1.3 Specific Objectives

1. To review the literature and determine the requirements for the Health Staff Shift Booking System.
2. To design the Health Staff Shift Booking System for Kadama Health Center III.
3. To implement the system for Kadama Health Center III.
4. To test and validate the functionality and efficiency of the Health Staff Shift Booking System.

## 1.4 Significance

On the successful development and further implementation of the Health Staff Shift Booking system, the study shall lead to the following significances;

* The study will equip the researcher with more knowledge and skills about the Health Staff Shift Booking system which will as well be used as a reference by other researchers who would wish to carryout research on the same field of Staff Shift Booking systems.
* Health Staff Shift Booking system enables a Health worker to suggest to their senior their convenient shift booking the shift and no other worker can book an already taken shift.
* Effective provision of services by Health workers due to a safe and sound mind since the worker works in a shift of their own interest, no personal challenges such as self-sickness of the worker.

## 1.5 Scope

The study only covers a computerized system for allowing health workers book their shifts of interest to work in, the area of interest is data capture, processing, storage, retrieval and backup policy.

**Area.**

It will be conducted at Kadama Health Center III located in Kadama Town council, Kibuku District along Mbale-Tirinyi-Iganga road.

**Time.**

As regards to time, it is meant to cover a period of four (4) months.

**Content.**

* Shift Creation: Allows administrators to define and create shifts with details such as date, time, duration, and associated roles.
* Shift Booking: Enables staff members to browse available shifts and book or request to be assigned to a specific shift based on their availability and skills.
* Shift Allocation: Automates the process of assigning staff to shifts, considering factors like skills, preferences, and availability to optimize the allocation process.
* Shift Swap/Trade: Allows staff to propose and execute shift swaps or trades with other team members, ensuring flexibility and adaptability to changing schedules.
* Shift Reminders: Sends automated reminders to both staff and administrators about upcoming shifts, reducing the likelihood of missed assignments.
* Reporting and Analytics: Provides comprehensive reports and analytics on shift attendance, staff availability, and other relevant data to aid in decision-making and resource planning.

# Chapter 2: Literature Review

## 2.0 Introduction.

This section reviews literature on a system, Health, Health Staff, Shift booking systems.

As part of the literature review, a case study will be carried out on Kadama Health Center III to investigate on how the station head(Clinical officer) allocates his subordinates their daily duties.

It is very important to care about a worker’s mental and physical health status.(B & Forsyth, 2009).

Workers need ample time to have a rest from their daily duties so as to gain momentum and interest to work under limit pressure and supervision.(A et al., 2004).

## 2.1 A system.

A system is a set of objects together with relationships between the objects and between the attributes,(A.D & R.E, 1956).

A system is a large collection of interacting functional units that together achieve a defined purpose or In other words a system is made up of three components a goal , a set of things and or rules and the way these things or rules are organized or connected in between them,(Rowe, 1965)

A system is a group or complex of parts (such as people, machines, etc.) interrelated in their capacities for one major aim.(RJ, 1968)

## 2.2 Health

Health is resource for everyday life, not the objective of living; It is a positive concept, emphasizing social and personal resources, as well as physical capacities.(Copenhagen & WHO, 1984).

Health is a state of complete physical , mental and social well-being and not merely the absence of disease or infirmity.(Jadad & O’Grady, 2008).

Health is the ability to adopt and self-manage in the face of social, physical and emotional challenges.(M et al., 2011).

Health is a state characterized by anatomical, physiological and psychological integrity.(J et al., 1982).

Health is the ability to adopt to one’s environment, it is not a fixed entity. It varies for every individual depending on their circumstances.(Lancet, 2009).

The health of a person is greatly determined by the social well-being of the person, therefore all workers should be treated like all the other community members.(Bryant et al., 2020).

## 2.3 Health Staff

Health staff refers to all personnel both medical and non-medical that ensure proper delivery of medical services at any health facility.

## 2.4 Shift Booking System

Is a system that allows employees to view their shifts over the internet. It will also allow them to book the future shifts they wish to work in.(Smith, 2021)

# Chapter 3: Methodology

## 3.0 Introduction.

This chapter presents all the methods, procedures, assumptions and tools used to carry out the study. It contains sections; 3.1 area of study, 3.2 population and sampling, 3.3 sampling methods, 3.4 data collection methods, 3.5system design methods, 3.6 system implementation tools

## 3.1 Area of study.

The study shall be conducted at Kadama Health Center III for a period of four (4) months

## 3.2 Population and sampling.

The population sample comprised of one (01) Physician, one (01) medical personnel and three (03) Nurses

## 3.3 Sampling methods.

The sampling and the method used are shown in the table 3.1 below

|  |  |  |
| --- | --- | --- |
| Sample | Quantity | Reason |
| Physicians | 01 | Purposeful sampling because he was the only one to provide information |
| Medical Personnel | 01 | Purposeful sampling because he was the only one to provide information |
| Nurses | 3 | Simple random sampling because the number is smaller |

## 3.4.0 Data collection methods.

The task of data collection begun after research problem was defined and research design/ plan checked.

Various data collection methods both qualitative and quantitative were used.

## 3.4.1 Interviews.

I will conduct a face-to-face interviews with 1 Physician, 3 nurses, 1 pharmacist one by one which will give me basic knowledge to fully understand their experiences while at Kadama Health Centre III.

Some interviews are to be conducted online through phone calls to the clinical officer to get data about the hierarchical organization of the Health Centre.

## 3.4.2 Observation.

I shall use this technique to gather accurate information about how the Health workers do their daily assigned duties. It will involve keenly seeing how operations are made in the health facility.

## 3.4.3 Questionnaire

These are well structured set of questions that are designed in a way that depict trends that can be useful where a path of action to be followed is ambiguous and the developer needs to choose for the stakeholders the best suitable action. Questionnaires can either be in structured or unstructured form that is in short hand; answers are in forms of YES or NO and sentence form respectively. They are used to get unbiased views and enable handling many respondents in a short time.

I will use this technique to give well-structured questions to 3 non-medical also to understand their experiences about whether they are sometimes affected by shifts allocated to them to work in.

## 3.5 System design methods.

The following strategies shall be used in the design of the system: system architecture, context diagram, data flow diagram (DFD), unifying modelling language (UML), using case diagrams and entity relationship diagrams (ERD) for backend and database.

## 3.6 System implementation tools.

The system shall be implemented using the following software:

Back end; MYSQL, front end; HTML, CSS, PHP, Visual studio code, Bootstrap.

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### Appendices

**Appendix A: Estimated Budget**

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| --- | --- |
| **Item** | **Cost** |
| Software | Shs.50,000 |
| Transport | Shs.10000 |
| Stationary | Shs.10,000 |
| Airtime and Data bundles | Shs.20,000 |
| Miscellanous | Shs.35,000 |
| **TOTAL** | **Shs. 125,000** |

**Appendix B**: **Time schedule**

|  |  |  |
| --- | --- | --- |
| Activity | Duration | Deliverables |
| Planning and requirements gathering | 1 month | * Project scope document * Requirement specification document * Stake holder meeting notes |
| System design and architecture | 1 month | * High- level system architecture diagram * Database schema design * Data flow diagram * User interface design * System design document |
| Development | 1 month | * Source code repository * Core functionalities implemented * Feature implementation documentation * Code review reports |
| Testing and deployment | 1 month | * Unit testing reports * Integration testing reports * User acceptance testing reports * Final documentation (user manuals, system manuals) * Deployed and tested system |