

# Identification of hazards associated with shift work



## Chapter 1

### 1. 0 Introduction

Modern society has acquired rapid changes that have been shaped and dominated by economic and productivity strategies, as well as human behaviour on individual, social and professional perspectives. The 24-hour society' represents a platform whereby time constraints, that previously used to limit human activities, have been lifted in order to balance the essential and urgent needs of the society at any given moment, irrespective of day or night. Therefore, a comprehensive management of the working time is a key issue as it is the first and foremost instrument that bridges human capacity with production means (Costa, 2003).

Shift work has become a very important and fundamental structure part of the modern society as it sustains a continuous mechanism in the production and implementation of services on a national scale. It includes various professions such as health care, law enforcement services, fire and rescue services, electrical utilities and transportation (Wright *et al.*, 2012). In the past few decades, the global population has witnessed a significant rise (Zhao and Turner, 2008). Accordingly, the demand for these basic services has amplified leading to an expansion in the availability of such services to the general population. This means that the need for broadening the scope of shift work has intensified. More attention, measures, human and technological resources have been devoted to shift work.

As medical assistance has to be made available to the population round the clock, health care, on a global aspect, remains one of the high-priority work

sectors in society (Zhao *et al.*, 2010). The duty of the health care system comprises the provision of medical service to the sick and injured people through application of science, knowledge, skills, expertise and latest technology available (Chakravarthy & Battu, 2014). It is expected that a healthy and psychologically balanced workforce is of ample importance in maintaining an efficient health care system (Shree, 2012).

Mauritian nurses provide health services in hospitals, clinics and other health care facilities in order to meet and satisfy the health needs of the population in emergency, in-ward, out-patient, and day-time and specialist clinics (Shree, 2012). Shift work is considered to be an essential schedule for the majority of health care personnel. A unique work practice environment is created. It is clearly established that nurses are among the first and major representatives in the line of staff constituting the health care personnel (Ahsan *et al.*, 2009; Chakravarthy & Battu, 2014). The nature of their duty is associated with a round the clock rendering of health care service. Hence they have to work during the day and night as per a shift system (Deori, 2012). In the process of administering such a service, and taking into account the high demands involved, shift work can have adverse effect on the nurses and their health, which will reflect directly on the efficiency of the health care system (Kecklund & Harma, 2010). This is directly associated with the quality of medical services from which the population benefits. Ultimately, a proper functioning of the system depends largely on the work productivity of nurses, of which shift work is a core element. A thorough investigation on the nurses and their shift system paves the way to obtain a clear picture concerning their health, work productivity, problems associated

with their profession, as well as certain issues, owing to their occupation, that impact on their private life.

### 1. 1 Problem statement

Nurses represent a vital part of the hospital staff. Being the main driving force, they serve as role models while delivering patient care. Shift work represents a challenge as it is the core structure which supports the work of nurses. Be that as it may, shift work can be the cause of many physical, psychological and social effects on the life of the worker and disrupt the well-functioning of the organisation (Jahromi *et al.*, 2013). Night shift can undoubtedly pose certain problems by compromising with their health and their safety. One of the main effects of shift work is the disruption of the internal body clock (circadian rhythms) and associated sleeping difficulties (Boughattas *et al.*, 2014; AlMetrek, 2014). As stated by Vijayalaxmi (2014), as a result, fatigue, performance deficits, slowed physical and mental reaction time arise. Eventually an increase in errors and accidents is more likely to happen.

Shift work is strongly associated with health effects such as gastrointestinal diseases (Pati *et al.*, 2001) and problems of the female reproductive system (Knudtson and Brzyski, 2013). Non-medical issues arising as a consequence of shift work influence social and family life (Costa, 2003; Finn, 1981) to a wide extent, thus causing major problems. Roland (2014) has implicated shift work as a noteworthy source of stress for nurses associated with poor performance. These effects obviously do not happen to all shift workers and

with proper management. Hence the risks and instance of complications can be minimised.

In the case of Mauritius, no valid study on shift work concerning the safety and health of nurses has been performed. Up to the present time, the health, sleep and well-being of nurses have not been considered as an occupational safety and health issue within Mauritius. It has not been thoroughly investigated and little information is available about their current situation. Therefore it is important to have a greater understanding of the impact of shift work on our health care workforce. By analysing the conditions of shift work as wellbeing of the nurses, information will be acquired pertaining to their physical and mental states. The study will provide valuable report about their views, opinions and suggestions with regard to the system of shift work. Further, the study serves as unique platform to channel, classify and simplify the health problems of the nurses in a systematic manner. Moreover, the survey will help to identify weak points and flaws of the existing shift system in Mauritius, because of which, the health of nurses is directly affected. Hence, potential methods to combat the health problems can be worked out for the sake of improving their condition and ameliorate their performance on a professional level.

## 1. 2 Aim and objectives of study

The study will introduce an occupational safety and health (OSH) perspective to shift work by systematically identifying the hazards associated with shift work. In general, the aim of the study is to analyse how shift work can have

an impact on nurses' safety and health in the health care sector by achieving some of the objectives set for this study.

The objectives of the study are:

1. To analyse which health effects are the most common among nurses as a consequence of working shift.
2. To examine the most practiced shift work schedule in the hospital.
3. To what extent shift work causes stress among nurses.
4. To analyse whether shift work affect the social and family life of nurses.
5. To come up with appropriate recommendations to address health and family problems identified during the course of the study.

### 1. 3 Outline of study

The study will then proceed with the following chapters

#### Chapter 2: Literature review

It contains a comprehensive review of the literature related to the study under investigation. It consists of theories relevant to the problem drawn out and provides definitions to ensure uniformity and understanding of the different terms throughout the dissertation.

#### Chapter 3: Methodology

It presents the research methodology and procedures used to gather data for the study. The different measuring tools are outlined and the different variables they assess are explained.

## Chapter 4: Results and data analysis

The results of the analysis and findings which have emerged are outlined in this chapter. It consists of detailed descriptions derived from the data obtained through the survey and it also displays data visually, using a number of different formats, such as tables, bar charts, pie charts and others.

## Chapter 5: Discussion

The results obtained from surveys will be interpreted with regards to the literature review.

## Chapter 6: Recommendation

This chapter contains the recommendations of the study which addresses the limitations present in the research and proposes some measures. This allows incorporating the information generated by the study.

### 1. 4 An overview of the health sector in Mauritius

Mauritius is among one of the few countries in the world where health care is provided free of charge at the point of use to the entire population (Kassean & Juwaheer, 2010). Under the aegis of the Ministry of Health and Quality of Life of Mauritius (MOH & QOL), a regionalized system of health services operates in the country in order to support an extensive network of accessible health care institutions and ensure that a competent health service is delivered to the Mauritian population. Being the employer of the

public health system, the MH&QOL coordinates the performance of all the staff working under its auspice (Health Statistics Report Mauritius, 2013).

Category	Number of employees
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Doctors	2046
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Dentists	58
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Pharmacists	23
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Nurses (including midwives)	3118
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Population of

Mauritius = 1,

218, 060

Source: – Health Statistics Report of Mauritius (2013)

According to the World Health Cooperation Strategy of Mauritius (2008-2013), health care system of Mauritius operates on 3 levels.

1. Level of

health

care

service

Components

2. Primary 2 Community



Hospitals

5 Medi-clinics

19 Area Health

Centres (AHC)

116 Community

Health Centres

(CHC)

3. Seconda Two district

ry hospitals :

4. Mahebourg

Hospital

5. Souillac

Hospital

Five regional

hospitals :

6. Dr A. G.

Jeetoo

Hospital

7. Flacq

Hospital

8. Jawaharlal

Nehru

Hospital

9. Princess

Margaret

Victoria

Hospital

10. Sir

Seewoosag

ur

Ramgoola

m Hospital

11. Te Five specialized

rtiary hospitals :

12. Brow

n Sequard

Mental

Health

Care

Centre

13. Poud

re d'or

Hospital

14. S.

Bharati

Eye

Hospital

15. Ear

Nose and

Throat

Centre

16. Cardi

ac Centre

#### 1. 4. 1 Primary Level

These peripheral health units are the first points of contact. Basic services offered include treatment of common injuries and diseases, maternal and child care and family planning. Upon necessity, cases are referred from these centres to regional or specialized hospitals for further investigation follow up and care of specialist doctors (WHO Cooperation Strategy Mauritius, 2008-2013).

#### 1. 4. 2 Secondary Level

Curative health services are delivered through the two hospitals at the district level. The five regional hospitals provide services which include accident and emergency services, general medicine, general and specialized surgery, gynecology and obstetrics, chest medicine, orthopedics, traumatology, pediatrics and intensive care services. Radiotherapy services are provided at Victoria Hospital. The ' Service d'Aide Medicale d'Urgence' (SAMU) is attached to each Accident & Emergency Department and operates on a 24-hour basis (WHO Cooperation Strategy Mauritius, 2008-2013).

#### 1. 4. 3 Tertiary Level

It is the highest level. Specialized health care is available at these five hospitals. All of them operate on a 24-hour basis. Complicated cases are referred to these centres for further management. The Brown Sequard Mental Health Care Centre is a psychiatric hospital with 803 beds. The Poudre D'or Hospital is a Centre where severe chest diseases are treated. It also serves as quarantine for tuberculosis patients. The S. Bharati Eye Hospital is responsible for treating complicated eye diseases and carrying out major and minor ophthalmic surgeries. At the Ear Nose and Throat Hospital, conservative management as well as a wide range of surgeries is accomplished. The Cardiac Centre is a 53-bedded institution, specialized in cardiac surgery and invasive cardiology. It also provides a neurosurgical service.