THE RELATIONSHIP BETWEEN SHIFT WORK AND EMPLOYEE PERFORMANCE AT ABACUS PARENTERALS DRUGS LIMITED, UGANDA

BY

RITAH MUGISHA

11/MMSHRM/26/036

DISSERTATION SUBMITTED TO THE HIGHER DEGREES DEPARTMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER`S DEGREE IN MANAGEMENT STUDIES (HUMAN RESOURCE MANAGEMENT) OF UGANDA MANAGEMENT INSTITUTE.

JULY 2013

DECLARATION

I, RITAH MUGISHA, hereby declare that this research report is my original work and has not been submitted for academic award to any university or institution of higher learning.

Signed…….. **Date……**

APPROVAL

This is to certify that Ritah Mugisha S. was under our supervision and his research work

On shift working and employee performance at Abacus Parenteral Drug Limited and worth the award of Master`s degree in Human resource Management of Uganda Management institute

Signed

…….. Date……

Dr. Gerald Karyeija

Signed

……Date……

Dr, Stella Kyohairwe

DEDICATION

This work is dedicated to Almighty God who enabled me to go through the course and my sweet Husband Tomslin Samme-Nlar,my dear parents Mr. Mugisha Arisen and Late Mrs. Maggie Mugisha, brothers and my only sister for the love you have showed me since I began this course.

ACKNOWLEDGEMENT

My most sincere and heartfelt thanks go to Dr. Gerald Karyeija and Dr. Stella Kyohairwe, my supervisors, for their unreserved and timely support in checking, commenting and giving constructive advice all along. Had it not been for their genuine professional and scholastic approach the successful completion of this paper could have been in doubt.

I am also grateful to my great friends Nassazi, Harriet, Godliver, David, Emmanuel Muwawu, Carol Bagonza, Carol Kanagwa, Fiona Abaasa, for their friendship, moral, financial spiritual and technical support for this project; I am also indebted to Dr. Jessica Nanyujja for all the academic support she gave me and encouragement. Without her unreserved help, completion of the project will be difficult. I cannot forget without any reservation all my respondents from Abacus Parenteral Drugs Limited (APDL) for the support and corporation extended to me in their different capacities respectively.

My sincere gratitude should also go to my lovely cousins especially Andrew, Agaba.

Finally, but most importantly I acknowledge my God who gave me the grace, endurance and strength in the face of all challenges to carry on.

Table of Contents

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The study investigated the effects of shift working on employee performance at Abacus Parenteral Drugs Limited. Abacus`s problem is that they a supposed to produce 58,000 bottles every day that they don't. Expectancy and equity theories guided this research with three objectives. The general objective was to examine the relationship between shift work and employee performance at Abacus Parenteral Drugs Limited. Across sectional survey design was adopted and both qualitative and quantitative approaches were employed. Simple random sampling and purposive sampling were used. The major findings of the study were; a very weak relationship between shift length and employee performance, a weak but positive relationship between shift timing and employee performance and a weak positive relationship between circadian rhythm and employee performance. And conclusions where made that shift length, shift timing and circadian rhythms a related to employee performance at Abacus Parenteral Drugs Limited. The recommendations of the research were management should design all shifts to be eight hours only. Management should let employee chose the shift they want to work on before assigning them any task. Management should put lighter and little work for the night shift and it should be more involving and with lots of movement for these employees to keep them alert and moving from one place to another not to feel sleepy with working.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

A large amount of research has been conducted on shift work (Akerstedt1980; Barton et al 1995; Czeisler et al 1983; Melbin 1987;Folkard& Monk,1985; Smith & Barton, 1994;Taylor & Pocock 1972, Totterdell et al 1995 as cited by (Frurnaham & Hughes, 1998) and has focused on biological, psychological and organizational variables of shift work. Contemporary research on time of day effects in performance efficiency has indicated that task changes, circadian rhythms may be crucially important in determining on-shift performance and hence the choice of individual and shift system that is most suitable (Folkard, Monk, & Labban, 1979).

This study examined the influence of an equally distributed eight hour shift work for day, afternoon, and night employee`s performance in Abacus Parenteral Drugs limited company in Uganda and this chapter presents background, problem statement, purpose of the study, objective, research questions and many more.

1.2 Background of the study

1.2.1 Historical background

Shift work goes back to biblical times when the Romans divided work into three watches(evening, midnight and cockcrow), shift which apparently disappeared during medieval times and was revitalized by the industrial revolution when large capital investments were needed for machinery to be reduced with respect to the rate of production if work continued around the clock (Olson, 1984).Prior to the United States of America, industrialization period of

the mid- 1800's, most workers were either farmers or self-employed, thus determining their own work schedules (Simcha, 1981). Then standardized employer-set work schedules, with work carried out away from the home or a personal business, started appearing as large factories spread with industrialization. A "traditional full-time schedule" was assumed to be a forty-hour week where employees worked an eight-hour day over five days a week with fixed starting and stopping times (Avery & Zabel, 2001).As industries increased and demand for products increased, that's when shift working came into existence, so a large body of knowledge, which began to accumulate during the intense industrial activity of the First World War and is increasing. Industry depends increasingly on shift system, from fixed shift to change of shift every day (Connor, 1971).

Shift work is a reality in working population around the world and has increasingly spread more in industry and services sector. Shift work involves working outside the normal daylight hours (outside the hours of approximately 7.00 A.M. to 6.00 P.M), the time duration during which many people in our society work. Shift workers might work in the evening, in the middle of night, overtime, or extra-long workdays. Many shift workers rotate around the clock, which involves changing work times from day to evening or from day to night. In Sweden 8% have fixed hours outside the normal range and 27% have irregular working hours, 4% work on shift schedules (Madide, 2003). Despite the controversies about the study of shift work performance that it squeezes the greatest productivity out of the hapless shift workers, it increases the productivity of company (Monk, Folkard, & Wedderburn, 1996); still there are several reasons for shift work like "24-hour society" of ours requires that important services and production should be provided at all times of the day. Most firms and organizations function in such a way

that labor works in shifts of 12 hours or less on a daily basis, while others have shifts lasting 24 hours or more.

Today drug industries, Sugar industries, manufacturing plants, chemical plants, food industries, plastic industries, oil refineries, paper mills, and so forth in Uganda and other parts of the world often work with shifts. There are several reasons for shift work. A major reason is that modern technology has made it possible to do many activities at any time of the day or night. In Uganda, shift work exits in industries like Mukwano industries, Riham biscuit's, Picfair industries, The New vision and Daily monitor newspapers but this study will focus on Abacus parenteral drug limited.

1.2.2 Theoretical background

Assumptions of Vroom's (1964) Expectancy theory and Stacy's (1965) Equity Theory form the basis of this study. Vroom's theory assumes that behavior results from conscious choices among alternatives whose purpose is to maximize pleasure and minimize pain. Hence, the relationship between shifts work and employee performance is not as simple as was first imagined by other scientists. In his assumptions employees' performance is based on individuals' factors such as personality, skills, knowledge, experience, abilities and their differed expectations. On the other hand, the assumptions of equity theory are that employees compare themselves with other employees who do not put in the inputs that are equal to the outputs they receive. Hence, they tend to compare themselves with other employees to confirm fairness. Therefore, "Equity Theory" deals with the questions 'If I do a good job, will it be worth it?' and 'What's fair?' It has to do with perceptions of fairness and how those perceptions affect employees' willingness to perform. This study focused on equity, that if the employees are given same incentives, pay and same hours of work (Eight hours) will they perform the same? So both theories are expected to

explain the levels of performance in the morning, afternoon and night shift in Abacus parenteral drugs limited Uganda.

1.2.3 Conceptual background

Shift work is an employment practice designed to make use of, or provide service across, all 24 hours of the clock each day of the week. Shift work occurs whenever 24 hour coverage is necessary or when a 24 hour day optimizes work output and productivity. Shift work is also common in many industries with less than 24/7 coverage. In this study, shift working refers to employees working at different hours (morning, afternoon and night) replacing one another after 8hrs of work to continue the chain of production.

Employee performance is accomplishment of a given task measured against preset known standards of accuracy, completeness and speed. Performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract (Spruill, 2008). In this study, employee performance refers to standards, meeting targets, quality and quantity of products, speed and effectiveness of shift workers at APDL.

1.2.4 Contextual background

Abacus parenteral drug limited APDL has put in place different things to ensure high performance of employees like:- Transportation facilities in form of a bus, meals for all shift workers, first aid medication, incentive and bonus then safety gears. Incentives schemes, training for workers, shift van for emergencies, safety gear in the production area, eight hours per shift to boost their performance. Production in APDL is done in bunches (morning, afternoon and night) and all those three shifts have one daily targets (bottles to be produced are 58,000 daily), the 1st shift is expected to produces more bottles that is between 21,300 bottles to 30,000bottles but they

only produce 20,000, 2nd shift is expected to produce between20,700 bottles to 21,500 bottles but only produced 19,000 then the night shift is expected to produce 16,700 bottles but only produce 15,000 bottles as per the minutes of the general meeting held on 20th Dec 2011. Although incentives, bus, training have been put in place production/ performance is not high as expected because of high employee turnover, poor marketing strategies, machine break down and insecurity around the area, intervening factors like power black out all night, clearing in the morning which takes three hours of the morning among others, all these affect the performance of employees.

1.3 Statement of the problem

Shift work is an employment practice designed to make use of, or provide service across, all 24 hours of the clock each day of the week. Shift work occurs to keep an organization operating all day long. Shift work occurs whenever 24 hour coverage is necessary to optimizes work output and productivity. Abacus parental drugs Limited APDL has put in efforts to improve performance by using new technological machines, putting up incentive scheme, bonuses whenever individual targets are met, meals per shift, break for meals and resting, medication, shift van for transportation in case of emergence, safety gargets and training.

Although all this has been put in place to improve performance to a target of 58,000 bottles per day, this target is not met because of the number of rejects which are increasingly getting higher. This is because there are gaps that haven't been filled like: - exploring people's potentials because there are casual workers who work on contracts of four-six months, their work for longer hours, shift rotation is not done, shorter breaks during working and poor lighting in the factory at night, routine chain of production with less movement during production (Abacus parental drugs limited Human resource report 2010). Poor marketing strategies which delay the

products in the ware house (as told by the Assistant manager at APDL on the 6th July 2012). So if this gap is not filled APDL can lose its market shares to other competitors who supply the same products. They may lose competitive employee due to high employee turnover, if the management doesn't act on those issues above, it can lead to the collapse of the factory. Therefore this study was focused on finding out the relationship between shift work and employee performance at APDL.

1.4 General objective or purpose of the study

To examine the relationship between shift work and employee performance at Abacus parenteral drug limited Uganda.

1.5 The Specific objectives of this study are:-

1. To examine the relationship between shift length and employee performance Parenteral Drugs Limited.

2. To evaluate the relationship between shift timing and employee performance at Abacus Parenteral Drugs Limited.

3. To evaluate the relationship between circadian rhythm and employee performance at Abacus Parenteral Drugs Limited.

1.6 Research questions

1. What is the relationship between shift length and employee performance at Abacus Parenteral Drugs Limited?

2. What is the relationship between shift timing and the employee performance at Abacus Parenteral Drugs Limited?

3. What is the relationship between circadian rhythm and employee performance at Abacus Parenteral Drugs Limited?

1.7 Hypotheses of the study

1. There is a significantly relationship between shift length and employee performance.

2. There is a positive relationship between shift timing and employee performance.

3. There is a significant positive relationship between circadian rhythm and employee performance.

1.8 Conceptual framework

The framework shows the relationship between the independent variable and the dependent variable and how there influence the performance of shift work at Abacus Parenteral Drugs Limited.

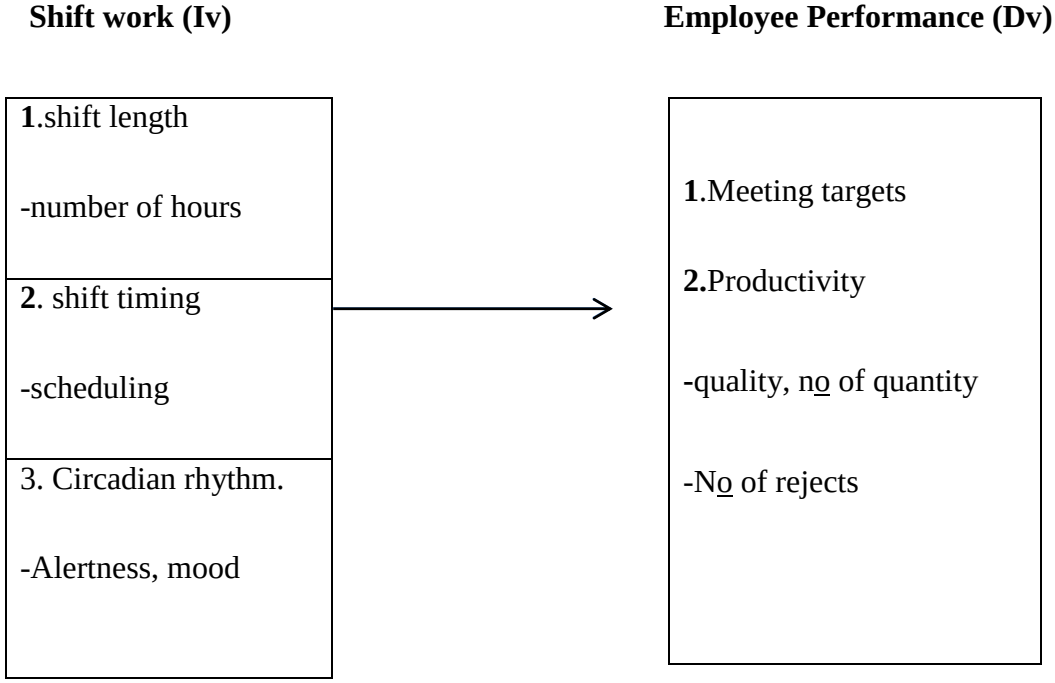

Figure 1: Conceptual Frame work depicting the relationship between shift work and employee performance at Abacus Parenteral Drugs Limited.

Source: Adapted from (Folkard, Monk, & Labban, 1979) **and modified by the researcher.**

This illustrates the entire study were various shift factors influence performance of a shift worker and thus his/her ability to meet targets or perform well. Shift work is not a simple problem and thus it does not have a simple single solution. The researcher looked at many different facts of the work situation, individual taking part in that work and the task that they are being asked to do (Monk, Folkard, & Wedderburn, 1996). In our Conceptual review the researcher looked at the relationship between employee performance and shift length, shift timing and circadian rhythm at APDL as shown in the conceptual frame work above and some moderating factors like power blackout for the whole night which affects the night shift, cleaning in the morning which takes 3 hours thus affecting the performance of morning shift workers at APDL.

1.9 Significance of the study

The importance of this study is to help future readers/ researchers to know the relationship between shift work and employee performance, that different work times affect differently various employees for example employee`s on the night shift have sleep deprivation during daytime, decreased vigilance and attention so this will affect their performance and that why this study helps to indicate the results of employee`s performance working on shifts. Therefore other researchers in this area will use the findings of this study for their future reference.

1.10 Justification of the study

There has been a few studies about shift work and performance in Uganda. This research is meant to contribute to the academic field and bridge the knowledge gap. A lot of studies talk

about shift work and health, well-being and a little work about performance that's why the researcher got interested in researching about shift work and performance.

1.11Scope of the study (geographical, time and content scope)

Content scope

This research was carried out to find the relationship between shift work and employee performance. Shift work was broken down into different shift work and we looked at how each shift work relates with performance, each shift work length relates with performance, how circadian rhythm relates with performance at APDL.

Geographical Scope

It was carried out in Mukono district in Uganda, with Abacus parenteral drugs limited, Uganda as the researcher`s case study. All the three shift type were covered so that it helps us to conclusively answer the relationship between shift work and performance.

Time scope

The study examined the relationship between shift work and employee performance from Jan 2009 to Dec 2011. This is because the factory was opened in 2008 and it became fully productive in 2009. So we looked at production percentages from 2009-2011 period.

1.12 List of abbreviations

APDL- Abacus Parenteral Drugs Limited.

CHAPTER TWO

LITERATURE REVIEW

2. Introduction

Shift work is any organization of working hour that differs from the traditional work period (Costa, 2003). A shift is the block of work time. Shift work is important because the public demands that health service, production, security and transportation be constantly available (Rutenfranz et al, 1977; Tastol et al, 1978; Winget et al, 1978 as cited by (Coffery, Skipper, & Jung, 1988). Shift work was traditionally seen as province of blue-collar worker but with the recent outlays for computer technology and the increased demand for production of drugs white collar workers are also engaging in it. In most shift work situations, the intensity of production may differ between morning, afternoon and night, most often with lower intensity during the night (Kecklund, Goransson, Akerstedt, & Mats, 2002).

This chapter presents the theoretical review; discusses the related literature, objectives then the summary of the chapter. According to (Amin, 2005) the theory informs both the conceptual framework and literature but in this study we shall use it as mainly for literature.

2.1 Theoretical review

Many scholars have come up with various performance theories, but in this research I believe that two theories of Expectancy Theory by Victor Vroom (1964) and Equity Theory by Adam Stacy (1965) are suitable and quite relevant to this study to explain the correlation of the variables in the study. The expectancy theory of motivation seeks its root from the University of Michigan where by in 1957; Basil Georgopoulos, Gerald Mahoney, and Nyle Jones worked on a research program in organizational behavior.

Their study focused on the conscious and rational aspects of employee motivation and the factors associated with levels of high or low productivity/performance. Their study looked at individual needs, individual perceptions and amount of freedom from restraining factors the individual has in following the desired path, examples of constraining factors like supervisory and group pressures or limitations of ability and knowledge. Vroom suggests that an employee's beliefs about expectancy, instrumentality, and valence interact psychologically to create a motivational force such that the employee acts in ways that bring pleasure and avoid pain. This can be used to indicate and predict such things as job performance and the effort one might expend at work.

Although there may be other factors that influence performance of any shift worker, the factors as indicated by Vroom where investigated for the purposes of this study. A theory to illustrate the antecedents of productivity/performance, Vroom proposed theory to explain the relationship of various factors that affect the performance employee. Vroom's Expectancy Theory is based upon the following beliefs like: valence (valence refers to the emotional orientations people hold with respect to outcomes [rewards]. The depth of the wants of an employee for extrinsic [money, promotion, time-off, benefits] or intrinsic [satisfaction] rewards). Employer must discover what shift employees value, like is it time off? Is it rewards? Expectancy (shift employees have different expectations and levels of confidence about what they are capable of doing). Employer must discover what type of training, or supervision different shift employees need; instrumentality (the perception of shift employees whether they will actually get what they desire). Employer must ensure that promises of rewards are fulfilled and that employees are aware of that. The expectancy theory therefore, says that individuals have different sets of goals and can be motivated if they believe that; there is a positive correlation between performance and reward, that favorable performance will result in a desirable reward (incentives), that the rewards

will satisfy an important need, and; that the desire to satisfy the need is strong enough to make the effort worthwhile.

Adams' equity theory on the other hand calls for a fair balance to be struck between an employee's inputs (hard work, tolerance) and an employee's outputs (salary, benefits, incentives, intangibles such as recognition, training). The equity theory of motivation is used to describe the relationship between the employees' perception of how fairly she/he is being treated and how hard she/he is motivated to work. According to the theory, finding this fair balance serves to ensure high productive relationship, if the employee feels that their out- put is equal to their input, this will advance an employee to perform better.

2.2 Relationship between shift work and employee performance.

This study is concerned with factors relating to employee performance working on shift. The researcher`s intention is not to review the area comprehensively, but to highlight some important area of interest. The study of such factors is very important in ensuring that acceptable performance is maintained. Shift work exists whenever employees are required to work outside the working hours that start from 7am to 9am in the morning depending on where you work. In this study Shift work refers to the three working shifts (morning, evenings and nights) which requires workers to switch back and forth among the three shifts (Tasto et al. 1978 as cited by (Coffery, Skipper, & Jung, 1988). Finding indicate that the incidence of shift work has increased over the past 20 or 30 years in that, about 20% of the working class in Europe and United states are currently working on some sort of shift (Rutenfranz et al, 1977: Tasto&Colliga 1978 as cited by (Coffery, Skipper, & Jung, 1988). This increase appears to be attributable to technology, increase in the provision of round the clock service so as a result the nature of job performance

of shift worker has changed from being predominantly manual to being more mental or cognitive nature.

Job performance of shift workers has been measured in terms of productivity, meeting targets and general performance. Studies of men which have measured job performance in terms of productivity indicate that the day shift typically has a higher production rate than the night or the evening shift (Marriott, 1953)(Malaviya& Ganesh 1976 as cited by (Coffery, Skipper, & Jung, 1988). Examination of these daily biological rhythms, known as circadian rhythms, indicates that, bodily functions tend to be at their highest level during the day and at their lowest level during the night.

Studies have shown that shift work, especially night shift work, tends to disrupt the normal synchronization of the worker's circadian rhythms, resulting in lowered worker alertness, speed, efficiency, productivity and safety (Kleitman 1963, Colquhoun et al. 1968a, 1968b, 1969, Colquhoun 1976, Colquhoun &Rutenfranz 1980 as cited by (Coffery, Skipper, & Jung, 1988). Although these studies suggest that there is some adaptation of the workers' circadian rhythms to their shift work schedule, that adaptation is not complete (Colquhoun et al., 1968a, 1968b, 1969 as cited by (Coffery, Skipper, & Jung, 1988). Examination of employee ' shift performance indicates that job performance is typically lowest by the night, followed by afternoon, and morning shifts. In relation to women, (Jamal & Jamal 1982 as cited by (Coffery, Skipper, & Jung, 1988) report that nurses on rotating shift schedules were rated lower by their supervisors in terms of job performance, motivation and patient care than were nurses on fixed shifts. Further, (Tasto et al. 1978 as cited by (Coffery, Skipper, & Jung, 1988) found that nurses on afternoon shifts were the least satisfied with their job performance, followed by the night and morning nurses.

Their a several different aspects of shift work problem that affect shift workers performance , example we are diurnal species, so society expects us to be asleep at night, working during day and recreating in the evening and weekends; that daylight is a power full time cue and circadian system is a time keeper inside our head and has momentum of its own and slow to adjust to night work (Monk, Folkard, & Wedderburn, 1996) so this will affect shift workers performance because already nature has decided where to be at what time. So looking at the above studies night employee has the least performance compared to evening and morning shift employees.

2.3.1 Relationship between shift length and employee performance.

The question “are 12-hr shifts, 10-hr shifts better than 8-h shifts?” depends entirely on the outcome measure under investigation. It is reasonable to hypothesize that 12-h shifts would not be so widespread if it was related to reduce productivity. However, a lot of literature does not support that position. Below is a table looking at performance under different time.

Table 1: Comparing performance on different shift length

Names	Impact	Notes	Females/sample	Family Info	Age(years)	Work type
Mills et al., 1982	No difference		30/30			
Todd et al., 1993	Worse on 12hrs	End of the shift worse	NO			Nursing
Reid et al., 1993	Worse on 12hrs	End of the shift worse	NO			Nursing
Williamson et al., 1994	Worse on 12hrs	Total system errors increased in 12 hrs	18 of 75	30% married, few with children	Mean 24	Computer operators
Axelsson et al., 1998	Better on 12hrs	Physical effort self-report but 12hrs on weekends only	4 of 31	Range 29 of 38		Power plant
Bakers et al., 2003	No difference	Absenteeism	NO			Mining coal
Jeanmonod et al., 2008	Worse on 12 hrs	Chart review patients seen per hour	? Of 283 shifts			Residents in ED

ED is emergency department. Adopted and modified from Ferguson and Dawson 2011.

Study examined resident productivity in an emergency department through review of patient charts. On 9-hshifts 1.15 patients were seen every hour compared to 1.06 patients per hour on the 12-h shifts (Jeanmonod, Jeanmonod, & Ngiam, 2008). With Such studies it is quite clearly that on a measure of productivity alone, 12-hrs is not 'better'. This shows that employees on an 8 hrs shifts will perform better than 10-hrs and 12-hrs shift.Shubin1978 as cited by (Coffery, Skipper, & Jung, 1988) feels that the enforcement of strict 8-hour shifts is necessary to reduce stress. Absenteeism can also be used as an organizationally relevant measure of the impact of a work

shift. Within a group of nine employees who changed from 8-hrs to 12-hrs shifts, an increase in absenteeism rates was seen in that group of employees in the mine that worked unregulated and frequent overtime (Beltrami, Barluchi, Torella, & Mathue, 2003).

Most experimental studies of shift work have been primarily concerned with the performance of relatively simple physical tasks but with the increasingly cognitive nature of the shift workers' job, it is necessary to consider whether the conclusions drawn from studies of physical tasks are valid for more cognitive ones. Available literature suggests that high cognitive and high physical workload tasks like those required in nursing and factory work may not be well suited to 12-hours shifts. Maintaining high levels of output for 12 hours may be quite difficult (Jonathon P.R Scott, 2006); (Todd, Morag, & Camilleri-Ferrante, 1998), doctors were reported to be less productive following a change to shifts. In industrial and plant-based environments, findings for results measures such as physical health have varied (Lees & Laundry1989). Increased domestic disruption and impairments in performance were associated with the 12 hours' work shift but so was increased satisfaction. While the populations were predominantly male, a study in female auto parts workers reported that sleep outcomes were worse on 12-hours shifts (Chan et al 1993).Monitoring tasks such as those performed by control room and computer operators can be categorized as high cognitive and low physical work load, in such environments, alertness is mostly reported to be worse on 12-hours shifts for all work types with the emphasis on the end of shifts. The majority of the data however are self-reports and self-assessments. Cognitive load is important because evidence suggests that sleep deprivation impacts decision making, judgment and job performance complex tasks more than simple tasks such as reaction time (Yvonne & Horne, 2000); (Thomas & Sall, 2010). Looking at different research above 12-hours create a negative impact on the way an employee performs their task compared to the 8-hours of

working. With cognitive or physical task 8-hours shift will produce more results or better performance than the 10-hours and 12-hours shift.

2.3.2Relationship between shift timing and employee performance

Effects of shift timing(morning, afternoon and night) on each employee is different, even the knowledge we have is not so sufficiently developed that we can arbitrarily rule people out or deny employees the ability to do shift work. Most test instruments that one might use have very obvious right or wrong results or answers for those who want the job. In summary age, gender, circadian type, genetics, personality, operationalization of shift work tolerance and many more may cause difference in performance in shift work timing.

Tepas and Monk (1987) came up with the following list of individual differences that may cause low or high performance, those over 50 years of age cannot work on the night shift because age comes with complications like blindness, gastrointestinal complaints, paralyzing of some body parts, so with such complications a person can't perform well. Those who are doing a lot of moonlighting (unofficial second jobs) like the men who take on 2nd jobs (night) elsewhere to sustain their families, will perform poorer because they don't get enough rest time. Some female employees who have heavy domestic workload will not perform well on the night shift cause of tiredness they come with at work, less alertness because they have been working all day long.

Employees who are the 'morning lark' will perform better in the morning but if they a put on the afternoon or night shift their performance will drop likewise the 'night-owl' employee will perform better on the night shift than when placed on the morning or afternoon shift. Workers who are 'rigid' rather than 'flexible' sleepers their performance will be affected if put on the night shift and have to sleep during the day, those with a history of sleep disorders, psychiatric

illness, alcohol or drug abuse, epilepsy, diabetes or heart disease and many more, all those individual differences will affect performance. In case of APDL the quality and quantity of drugs an employee is supposed to have produced by shift end will be affected by those individual difference caused by shift timing..

Shift work and Age

Studies reviewed in this research found out that young age was related to shift work tolerance, measured with both subjective sleepiness, performance tests, recovery after work and sleep time(Seo et al., 2000;Reid and Dawson 2001;Bonnefond et al. 2006). Studies indicate that the extreme age for reduced tolerance to shift work is between 40 and 50 years of age(Costa 2005, Another study show that both sleep duration and sleep quality among shift workers decrease with increasing age of about 45 years, but does not decrease any further after this(Parkes, 2002). These findings might be explained by older individuals' sensitivity to circadian effects of performance or individual differences in sleep loss between age groups. Studies favoring younger age measure the workers performance on cognitive, physical or work related tasks and other research investigate sleep, attitudes and valuations of the work, activity pattern and life style where by young employee will be able to meet their targets and perform better than the older employee no matter which shift timing they a working on.

Shift work and gender

A lot of research has been made on gender and their performance and who would copy with shift work better than the other but most studies reviewed seem to favor male gender. Studies report that female shift workers have more sleep related problems than men and more often use hypnotics to fall asleep than male shift workers(Marquie & Foret 1999,Rotenberg et al

2000,Admiet al 2008). Night working women have shorter sleep duration on the first sleep episode after the night shift than night working men, and that woman who have worked night shifts for more than one year also have shorter sleep duration than their male counterparts (Rotenberg et al 2000).

Although the results for gender and performance problems in shift work do not seem very strong, other studies investigating other measures of shift work come to the same conclusions that men perform better. Reports that men engage in more activity-based coping than women in order to handle shift work (Fullick, et al., 2009). Studies revealing a relation between male gender and better indicators of shift work performance are longitudinal. Study also reports that female shift workers generally work in an environment more similar to that of day workers (with less exposure to physical and psychosocial risk factors example noise and job insecurity), compared to what male shift workers do (Arber & Bara, 2009), therefore, it seems that females more often work in environments with less exposure to risk factors, which can explain the notion that females might have less risk of health problems than males. However, male shift workers seem to sleep better, work more consistently, have a healthier life style and experience less fatigue and sleepiness when working on different shifts in spite of working in possibly risky and noisy work place men will perform better.

2.3.3Relationship between circadian rhythm and employee performance

Shift work studies (Kleitman and Jackson, 1950; Kleitman, 1963; CoIquhoun et al, 1968a; 1968b; 1969) have confirmed that performance on various tasks like color naming and vigilance is impaired at night. This has been interpreted as reflecting a circadian rhythm (24 hours) in performance efficiency which is thought to be mediated by the circadian rhythm which exists in most physiological functions (Mills John Norton, 1970).Humans, like all animals, are essentially

rhythmic in their biological nature however, since the advent of modern norms of lighting and associated technologies, we have attempted in many and varied ways to either ignore or overcome this basic biological framework of organization to which we are all subject. Humans undertake shift work and other activities which demand individuals function at times when their circadian rhythms are expecting them to rest. Studies have provided significant support for the contention that an individual's biological rhythmicity is genetic in origin and as such essentially unchangeable. The application of this knowledge is slowly allowing the realization that some workers, irrespective of their individual desires to undertake shift work pattern may be genetically incapable of tolerating the biological demands associated with shift work. The exception of the "post-lunch dip" sometimes found in performance measures which slightly affects the afternoon shift employees. The human biological clock has two "sleepy" periods—

the primary one occurs during the conventional "night" between midnight and 6:00 AM, with a secondary period in the early to mid-afternoon "siesta time." The magnitude of this post-lunch dip in performance and alertness is individually determined as cited by (Mahowald & Ettinger, 2009). Like in some super market in Uganda you will find a lot of employee ladies who a resting in the toilet after lunch because of the post-lunch this affects performance because like on weekends that's when the queue is so long and not moving cause people who are supposed to be serving a few. A marked connection has been claimed to exist between the time of day effect in performance efficiency on shift workers who do physical tasks and the circadian rhythm (Kleitman 1963 as cited by (Coffery, Skipper, & Jung, 1988).Disorders of these rhythms are of more than academic interest; they affect alertness, concentration, and performance that may be crucial for safety in certain occupations such as transportation and manufacturing(Mahowald & Ettinger, 2009).

2.4 Summary of the literature review

After reviewing some literature the researcher found a gap that most of the studies were done outside Africa and that's why I choose Abacus Parenteral Drugs Limited which is in Africa to fill that gap but the researcher concurs with some writers like (Kecklund, Goransson, Akerstedt, & Mats, 2002), in most shift work situations, the intensity of production may differ between morning, afternoon and night, most often with lower intensity during the night because at ADPL the night shift worker have a lower target which is 16,000 bottles which they don't meet because of various reason associated with working at night so this affects their performance.

Various writers e.g. (Rotenberg et al 2000) wrote that Night working women have shorter sleep duration on the first sleep episode after the night shift than night working men, and that woman who have worked night shifts for more than one year also have shorter sleep duration than their male counterparts which causes them health problems like persisted headache which has been the same case like in APDL because according to the clinic records the female workers a more registered in the clinic book then the male workers. So the is a relationship between shift work and performance because they won't be able to meet their target hence evaluated as low performances.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides a road map in which research was carried out. It provides the research design, study population and sample, methods and instruments and data analysis techniques.

3.2 Research Design

This research specifically employed a cross-sectional survey design to collect information from subjects at one point in time. (Rutgers, 2001) encourages the use of a cross-sectional design especially if the researcher is collecting data from the field once. In an academic research, where it may not be possible to follow up cases, a cross-sectional design is very suitable and was chosen because the researcher was collecting data once from the field, and it was helpful because she got all the information she wanted from all the respondents using this cross-sectional design.

3.3 Study population

Abacus parenteral drug limited Uganda APDL is where this research was conducted. It is in Mukono District and has a total number of 176 employees as per Human resource data report 2012. Out of which 149 employee's work on the three shifts, 27 employees work as administration staff. The108 employees were my sample size. Each shift has mixers, machine operators, production chemists, overall supervisors, supervisor production line, chemists in water plant and casual laborers.

3.4 Sample size

The sample size of the chemists, machine operators packing supervisors and the casuals in every section was determined using statistical table of Morgan &Krejcie (1970) as adopted by (Amin,

2005)where the given total population (N) of 149 gives a sample size of 108. The breakdown of the sample size per category of employees that the researcher interviewed was as follows mixing chemists, dispensing chemists, sterilizer chemists, machine operators, packing supervisors and casuals. The sample size calculated for each category was got by getting the total number of staff in each category divide it by the total number in each shift and multiply it by the given sample size, 103employees represented all the shift workers at APDL since it was not cost effective to study the entire population and it would be time consuming for the researcher. Purposive and simple random sampling techniques were used so that different categories of employees would be selected in every shift.

Table 2: Information got from Human resource data base

Category	**Population**	**Sample size**	**Sampling technique**
Production section			Purposive sampling
Mixing chemists	3	3	Purposive sampling
Dispensing chemists	2	2	Purposive sampling
Sterilizer chemists	3	3	
M/C			
Operators	8	8	Purposive sampling
Casual shift	12	12	Purposive sampling
Packing section			
Packing supervisor	4	4	Purposive sampling
M/C operators	9	9	Purposive sampling
Casuals	105	64	Simple random
Water treatment			
Mc operators	3	3	Purposive sampling
Total	149	108	

Source: Primary data modified by the researcher with the help of Krejcie and Morgan (1970) tables we were able to come up with the total of the sample sizes.

3.5 Sampling techniques and procedure

Both probability and non-probability methods were used in my research, so was simple random sampling and purposive sampling techniques. This was because of the different categories of employees in every shift. To target specific elements in the sample, purposive or judgmental sampling (Mugenda & Mugenda, 2003) was employed. The researcher used purposive technique to select key informants among the respondents. This was used on both permanent workers and those on contract basis. Despite the inaccuracy of the method thee research chose it because of it is authenticity and informativeness.

For the researcher to come up with those numbers in the sample sizes, all population elements in any category which had less respondents (15 and below) were all taken as my respondents and all population elements with more than 15 elements the researcher used simple Radom sampling.

The researcher used purposive sampling because of the few elements she had in some categories and they were all key informative and work on different shifts and simple random sampling was used on casuals laborers the researcher interviewed people who came early for meal during break time because that was the appropriate time for giving questionnaires than during their work time.

3.6 Data collection methods

Both primary and secondary sources were used to collect data related to variables in the study. In this case, questionnaires, interview, documentary analysis and observation checklist were used. All these methods were used to help us get all the information we need to carry out research.

3.6.1 Questionnaire Survey

This involves the use of written down items to which respondents individually respond in writing. These items are in form of questions. Information from respondents was collected using prior designed and approved questionnaires comprising of structured and non-structured questions that were distributed to respondents. The likert scale is one of the most used techniques in measuring attitudes towards a particular subject. This was applied to generate varied answers from respondents.

3.6.2 Interview

The researcher generated an interview guide which was used during the interview process to avoid bias, long sentences and digressing. It was specifically prepared for Top management team who had less time to fill questionnaires and also to get factual first-hand information that was required. Carrying out an interview helped the researcher to observe and make informed observations which helped in discussion of study findings.

3.6.3 Documentary analysis

This is the review of data or information gathered over time by other scholars, researchers and schools in any field of study. The documents reviewed included the Human resource strategic plan, performance reports. This was very use full because it gave us information we couldn’t find about how performance has been since the company opened up.

3.6.4 Observation checklist

This is where you get information through watching, monitoring or studying behaviours and answers to questions asked. It is a key tool the researcher used to get first-hand information from nuances, body language and synthesis she adduced from the responses to questions asked.

3.7 Data collection instruments

Data collection instruments included self-administered questionnaire, interview guide, documentary and observation check list.

3.7.1 Self-Administered Questionnaire

Self-administered questionnaires targeted information from shift employees, both on permanent and contract. A questionnaire was selected because it yields first-hand information and it is faster and convenient. The questionnaire was administered to shift workers so as to get information from people on permanent or contract employment, day, evening or night shift workers

3.7.2 Interview Guide

An interview guide was used to solicit information from key informants which included Assistant production manager, Human resource manager, marketing manager and other key people in administration. This enabled the interviewer to get more information from these people who are key informants with vital information.

3.7.3 Documentary check list

This entails policy documents, HR manuals, minutes of meeting held by board members and other reference documents that are used at APDL. This helped the researcher to know the percentages of production in the past year (2008 production was 45,000 bottles daily compared to 54,000bottles produced since 2009), how performance was and human resource policies if there apply across to all workers to confirm equal treatment for employees.

3.7.4 Observation checklist

The researcher utilized the observation checklist to record what was observed during the data collection. As pointed out by (Mugenda & Mugenda, 2003) the behaviors to be observed must be clearly defined and a detailed list of behaviors developed beforehand. Observation was useful especially for information that was not easy to get but can be observed. The researcher observed all shift employee, to know in which shift a employees faster, which shift are employees slow or less alert, who a faster when working (male or female)?

3.8 Validity and reliability

Validity

According to (Amin, 2005), validity is the ability to produce findings that are in agreement with theoretical or conceptual values, in other words, to produce accurate research results. Questionnaire and semi-structured interview schedule were pre-tested (Mugenda & Mugenda, 2003) such that assurance is guaranteed that the instrument will fetch the right data for analysis the kind that represents respondent`s views. This implied that coefficient validity to be accepted it has to be0.7 and above as recommended by Amin (2005).A content validity index (CVI) was employed and the formula was:

$$CVI = \frac{\text{Number of items rated relevant}}{\text{Total number of items}} * 100$$

$$= \frac{36}{45} * 100$$

$$= 0.8$$

This formula is mostly used for quantitative data. To find out if my questionnaire was valid, I gave it to my supervisor, colleagues and another doctor to read through so that they can reward it

marks or rate it. Then I added up all those mark to find my average because the high the average the better my results are.

Reliability

Reliability refers to the extent to which the research instrument will yield consistent findings (Saunder, Lewis, Thornhill, & Thill, 2006). This means my instrument has the ability to produce the same results whenever it will repeatedly be used to measure variables or concept from the same respondents even by other researchers.

Reliability was also measured numerically as per the Cronbach alpha coefficient; where by any value above 0.5 was good and the high it got the better it was considered reliable. This was achieved when I did a pilot test and got results that I entered in SPSS then my results were above 0.5.The instructions was clear, consistent, anonymous and without names. The reliability was determined when this same tool was used across all shifts and we got answers.

Table 3: showing the reliability of different dimensions.

Variables	Alpha	No of items
Shift length	-0.063	9
Shift timing	0.015	9
Circadian rhythm	0.676	9
Employee performance	0.653	9
Moderating factors	0.57	9

Looking at the table above shift length has little and negatively relationship with performance of employee, shift timing has little positive relationship with employee performance this means that shift timing and shift length have little significance influence on employee performance.

Table 4: Reliability Statistics

Cronbach's Alpha	N of Items
.685	45

The total reliability was 0.685 and when you round it off it gets to 0.7 which is high and this shows that the questionnaire we used was reliable.

3.9 Procedure of data collection

The researcher got an introductory letter from Uganda Management institute which she used in collecting data from APDL. This letter served as confirmation that the exercise was for academic purposes and permission had been granted by the degree awarding institution.

3.10 Data Analysis

3.10.1 Quantitative Data

After data was collected, it was edited, coded and fed into a computer using the SPSS program which helped to summarize the coded data and produce the required statistics in the study. Quantitative data was analyzed using Pearson's correlation technique because its helps in determining the strength and direction of association between variables.

In testing the hypothesis the study applied correlation analysis to determine the relationship between two or more variables or set of variables as recommended by Cohen and Cohen (1983). Hypothesis testing was carried out by stating the null and alternate hypothesis, with the use of

Pearson's product moment correlation analysis to assess the level of significance. Multiple regression analysis was carried out to determine the strength, direction and relationship between shift working and employee performance at APDL.

3.10.2 Qualitative data

Qualitative was analyzed and coded using both thematic analysis and content analysis method by reporting narratively. This is because the two approaches complement each other since the themes emerge from the researcher and the description summaries from the respondents.

3.11 Measurement of variables

The variables were measured using a 5point Likert scale, measuring the extent of agreement or disagreement with a given statement. The scores given range from 1 to 5 with 1 representing the weakest score (Strongly disagree) and 5 representing the highest score (strongly agree). The study used targets, quality and quantity to measure employee performance.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

This Chapter presents and discusses the analysis, presentation and interpretation of the findings. The study aimed at investigating the relationship between shift work and employee performance at APDL. The chapter comprises of introduction, background information on the bio-data of respondents, assessment of the study objectives, descriptive statistics, correlation, and regression of variables. The actual findings were organized according to the objectives of the study as; to identify the relationship between shift length and employee performance, to evaluate the relationship between shift timing and employee performance and to evaluate the relationship between circadian rhythm and employee performance at APDL.

4.1 Response Rate

During the study, the number of the sampled respondents who participated in the study was calculated to establish their representation and data in the study. Below is the table showing the response rate of each category of the respondents in the study.

Table 5: Participates in all category

Category	Population	Sample size	Percentage
Production section			
Mixing chemists	3	3	100%
Dispensing &	2	2	100%
Sterilizer chemists	3	3	100%
Machine Operators	8	8	100%
Casual shift	12	12	100%
Packing section			
Packing supervisor	4	4	100%
M/C operators	9	9	100%
Casuals	105	59	56%
Water treatment			
Machine operators	3	3	100%
Total	149	103	95%

Source: Primary data

From the above table a response rate of 103 was got, according to Kregcie and Morgan (1970) a population of 149 calls for a sample of 108 but 103 respondents returned the questionnaire completed which implied that response percentage was 95%. This indicates that the response rate for this study which was above 50% was very good and adequate and therefore presents valid and reliable information about the study.

4.2 Background information of respondents

This section was organized according to the demographics of respondents based on Gender, Age, civil status, section/department, present shift and present contract, correlation, and regression for both quantitative and qualitative variables. The study adopted both quantitative and qualitative approaches, where results of qualitative source were used to supplement on the quantitative data source to give a full understanding of the problem and overcome weaknesses of relying on one

approach. This information was presumed very vital to the study because these characteristics can influence nature of participation, the opinion of respondents and at the same time gives a clear picture of respondents that participated in the study. A detailed research questionnaire was given to respondents to be completed by chemists, supervisors, machine operators and casual employees to fill, an interview guide was given to the selected key informants purposively the administrators in Human resource, marketing, production and accounts at APDL.

4.2.1 Respondents by Gender

The researcher set out to find out the Gender distribution of respondents at APDL. This was intended to establish whether gender balance is taken into consideration when recruiting and distributing employee on the different work shifts at APDL and results are presented as shown below

Table 6: Gender

		Frequency	Percent
Valid	Male	58	56.3
	Female	45	43.7
	Total	103	100.0

Source: Primary Data

In the table above out of 103 respondents who participated in the study 58(56.3%) were male and 45(43.7%) were female. This clearly indicates that the number of males employed at APDL is bigger than that of the females and therefore fewer females participate in the production,

packaging and water treatment in all shifts at APDL. Furthermore an interview with Human resource personnel, Production personnel and on reviewing documents in human resource manuals shows they recruit men for night shift and women for mainly morning and afternoon shift because they consider men to produce more than the ladies on the night shift. This greater number of men than women can be interpreted in various ways but according tot his research men can work on any shift comfortably than women that`s why their recruit more men than women.

4.2.2 Respondents by Age distribution

Respondents were asked to indicate their age distribution and the results are shown be

Table 7: Age distribution

		Frequency	Percent
Valid	21-25	76	73.8
	26-30	20	19.4
	31-35	3	2.9
	36-40	3	2.9
	Total	102	99.0
Missing	System	1	1.0
Total		103	100.0

Source: primary data

Table 7 above shows respondents by age distribution of employees of APDL. The highest number of employees fell within the age range of 21-25 years which constituted up to 76(73.8%) with the least number of employee falling between 31-35 years and 36-40 years which all was 3(2.9%) and one respondent who didn't indicate they age. This implies that the majority of employees at APDL are relatively young meaning young employee are more recruited than the mid –aged employees. It implies that young people are more active in shift working and have less social responsibilities like families or due to high unemployment rates in the country the young are ready to take up any available jobs. These people are flexible and can work on any shift this means production will remain high as well as performance for the shift employees.

4.2.3 Respondents by Marriage status/ civil status

Respondents were asked to indicate their civil status and the results are shown below.

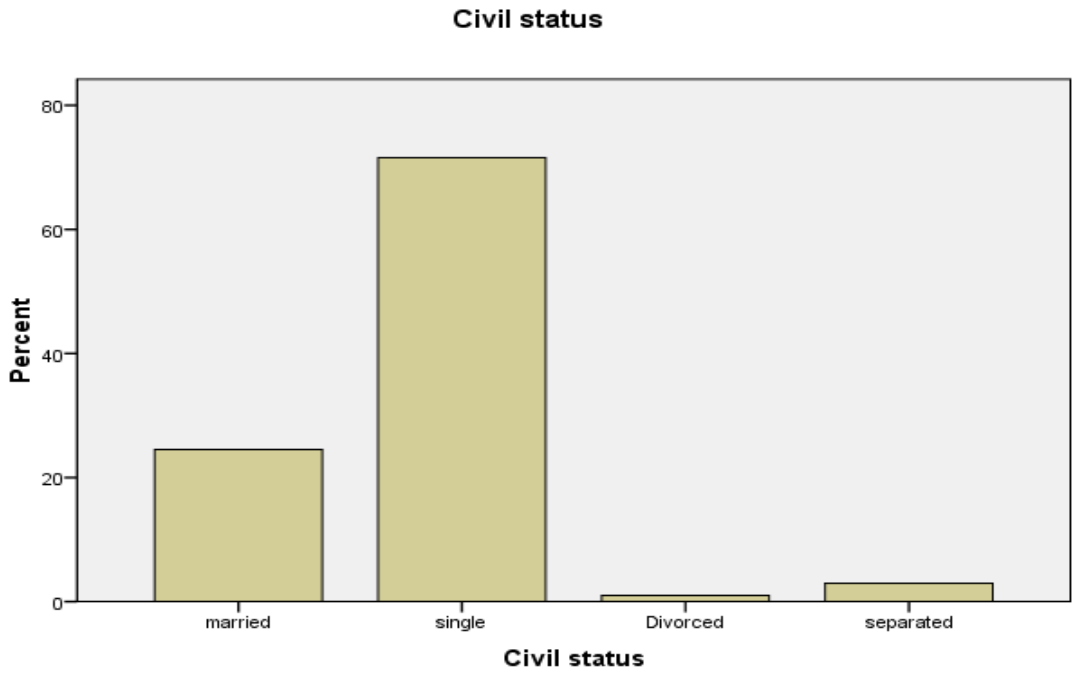

Figure 2: Respondents' civil status

Source: Primary data

From the figure above, it was found out that out of 103 respondents 73(70.9%) were single, 25(24.3%) were married, 3(2.9%) were separated, 1(1.0%) were divorced and one respondent didn't fill in. This implies that majority of respondents were single and were men, they are more flexible in working on any shift. Meaning they have fewer responsibilities which allow them work at APDL on the different shifts and these can be shifted from morning shift to night shift or from night shift to afternoon shift easily and they will still remain productive regardless of the shift they are working on at APDL. The evidence is corroborated by the comments from the administrator we interviewed who said "most of our employees are youth so rotating them from one shift to another isn`t a problem and they are all given training about all the different categories of work this also helps them to move from one shift to another at APDL with less difficulties" this means that a big number of employees are youth and it's easy to work with them because they are flexible.

4.2.4 Respondents by section/department

The respondent were asked to indicate the section or department where they belong to at APDL

Figure 3: Section/department

Source: Primary data

The table indicates that APDL has more employees in the packing section which is 55(53.4%) then all the other shift working sections because production section had 34(33.0%) and water treatment had2(1.0%) and the other 12(11.7%) respondent didn't fill in their respective departments. The packing section has many workers because this is where many casuals work who don't have any expertise needed to do a job.

4.2.5 Respondents by present shift.

Respondents were asked to indicate which shift they a presently working on and the table below shows the findings

Table 8: Response of employee by present shift

		Frequency	Percent
Valid	Morning shift	56	54.4
	afternoon shift	25	24.3
	Night shift	22	21.4
	Total	103	100.0

Source: Primary data

To find out how many people work on every shift at APDL the researcher had to categories the shift into three shift which are; morning shift with the highest percentage 56(54.4%) followed by afternoon shift 25(24.3%) and then lastly night shift 22(21.4%). The morning shift has the highest percentage because it has a lot of casual employees in the production department and it produces the highest volume of drugs because the circadian rhythm of a person is believed to be at its best and performance is high in the morning hours that why they give it a lot of people so that they can produce a lot. So in the morning shift is when they expect to see people more active than the afternoon and night shift.

4.2.6 Respondents by present contract

Respondents were asked to indicate which contract they work on as shown below

Table 9: Showing the different contract

		Frequency	Percent
Valid	Permanent	26	25.2
	Contract	74	71.8
	Total	100	97.1
Missing	System	3	2.9
Total		103	100.0

Source: Primary data

The table above indicates that APDL shift employees have two types of contracts permanent 26(25.2%) and contract 74(71.8%). All people on different contracts were sampled for interview so that we get balanced views from a cross- section of people and it indicates that most of APDL employees are on contracts because most of them a young people who are willing to take on the shift jobs and have plans of going back to school so don't want a permanent employment. The contract employee have less say and will be over exploited and paid less compared to the permanent workers that's why they are many.

4.3 Empirical findings on the effects of shift working on employee performance.

Findings were analyzed, presented and interpreted according to the objectives of the study. The first objective was; to identify the effects of shift length on employee performance at APDL. A number of factors were examined as shown below.

4.3.1 Relationship between shift length and employee performance at Abacus Parenteral Drugs Limited.

In this study shift length was considered as one of the dimensions of the independent variable and was measured using a total of nine questions which solicited respondent`s opinions. This

was done on the basis of five Likert scale (one-five) this measure was meant to establish whether shift length had a relationship with employee performance at Abacus Parenteral Drugs Limited APDL. The results were further explained using correlation and regression to show whether there was are relationship and direction between variables and the emerging results are shown in the table below;

Table 10: Description of shift length by respondents

Question	SD	D	N/A	A	SA	Mean	Sd
	Frequency	Frequency	Frequency	Frequency	Frequency		
I prefer working on the 8hrs shift.	4 3.9%	9 8.7%	4 3.9%	48 46.6%	37 35.9%	4.03	1.057
Am happy with my work hours.	12 11.7%	28 27.2%	5 4.9%	45 43.7	9 8.7%	3.11	1.261
My work is easy.	15 14.6%	34 33.0%	12 11.7%	27 26.2%	10 9.7%	2.83	1.276
I want to stay longer after the shift	28 27.2%	41 39.8%	6 5.8%	15 14.6%	11 10.7%	2.41	1.328
My work keeps me busy all the time.	1 1.0%	13 12.6%	6 5.8%	51 49.5%	23 22.3%	3.87	0.975
I want shorter shifts.	8 7.8%	15 14.6%	12 11.7%	43 41.7%	20 19.4%	3.53	1.212
I want to change my work hours.	10 9.7%	27 26.2%	8 7.8%	29 28.2%	15 14.6%	3.13	1.325
I would happily work on the 10 hours shift if it increased on my salary.	27 26.2%	19 18.4%	5 4.9%	25 24.3%	24 23.3%	3	1.583
I prefer working on 12 hours shift.	47 45.6%	27 26.2%	2 1.9%	4 3.9%	4 3.9%	1.7	1.062

Source Primary data

Key: SA= Strongly Agree, A= Agree, N/A= Not sure, D= Disagree, SD= Strongly Disagree, sd= standard deviation.

The table above shows responses as indicated by respondents on the shift length and employee performance, shift length is the duration of time a person spends working on a shift for example 8 hours, 10 hours and 12 hours, 46.6% of employees agreed that they prefer working on the eight hours shift compared to 8.7% who disagreed. This shows that most people prefer working for eight hours because many people are tired after the 8 hours and want to go home and many hours call for more work and naturally people hate working long hours, so they would prefer few hours of work.

It was established that 43.7% of employee accepted that they were happy with their work hours compared to 27.2% who disagreed. It means that most people where happy with the hours worked and they meet their targets or if they worked extra hours it earns them more money. To some employee it is a chance for them to have a job so they have no complaint even if they worked for more or less hours.

A total of 33.0% disagreed that their work is easy compared to 26.2% of employees who said their work was easy. This there for implies that work is relative not so hard and not so easy because the responded that disagreed that the work is not easy is not so big compared to the percentage that said it is easy meaning that some casuals work and the machine operators and mixers may be hard compared to other peoples work or some people a lazy to work. This may contribute to the over roll performance of the employees. This prompted the researcher to seek information about the work from the some administrative person who said “all shift workers are first trained before they start working so when you’re trained you have all the basics skills on what to do on job”.

It was established that 14.6%of employees agreed that they want to stay longer after their shift while 39.8% disagreed. This means that after every body's shift is over they want to go home to rest may be because of the too much work they have to do or to go meet with their families. Where as majority of respondents 49.5% employees indicated that their work keeps them busy all the time 12.6% disagreed. This means that shift employees are kept busy throughout their shift working with no time to rest because of lots of work or they don't get enough skill to do the work faster due to the little training their get when entering the organization that the person has a lot of on job learning to do.

A total of 41.7% of employees indicated that they wanted shorter shifts compared to 14.6% who disagreed and 12 people were not decided. This shows that people prefer shorter shift so that they can perform better than current performance, may be for the people who work for more than 8 hours with lots of work want shorter to perform better as well as the people who have 2 jobs prefer shorter shifts so that they can have time for their other jobs.

A total of 28.2% indicated that they wanted to change their work hours whereas 26.2% disagreed. Meanings that some employees like the work hours while others want a change in the work hours. The difference is little between the people who like and people who want to change this means APDL has tried to assign people the hours they want to work on but the big number that disagreed may be because they don't like the time their start and end their shift.

A total of 24.3% of employees agreed that they would happily work on the 10 hour shift if it increased on their salaries while 18.4% disagreed. This means that employee get tired so even if

their salary was increased and they were told to work for more hours they wouldn't because they are tired and can't perform any better those are the people who disagreed while the other percentage who agreed many be the casuals whose work is so manual that they don't mind extending to more hour if it increase their salary.

A total of3.9% of employees said they would prefer working on the 12hours shift compared to 26.2% who disagrees. This means that most employee at APDL don't want to work for longer hours because their work exhausts and any increase in hours with our increase in money would be rejected at all work places.

This shows that shift length at APDL affects employee performance since most employees with the mean of 4.03 accepted that they prefer working on the 8 hours shift; this means if they are given more hours they won't perform any better because they will be tried and worn out.

The information is backed by the interviewed respondents who agreed that shift length affects employee performance one respondent had this to say; "*8 hours give employee maximum concentration on the job and that is what recommended by the Ugandan laws".* Another respondent in the production department said; *"8 hours would be recommended because dividing the day in 8 hours for each shift is easy, more hours would lead to low labor turn over and more hours are hectic so the employee`s performances low if they are put on a shift with more work hours than 8"*. Therefore there is a relationship between shift length and performance of employee at APDL.

To test the research hypothesis that there is a significantly relationship between shift length and employee performance at APDL, the Pearson product moment correlation was done as shown in the table below.

Table 11: Correlations between shift length and employee performance

A correlation analysis was computed, examined and interpreted. This was done to find out if there is relationship between shift length and employee performance at APDL.

Correlations between shift length and employee performance.

		shift length	Employee performance
shift length	Pearson Correlation	1	.109
	Sig. (2-tailed)		.139
	N	102	102
Employee performance	Pearson Correlation	.109	1
	Sig. (1-tailed)	.139	
	N	102	103

The findings in the table above shows the correlations between shift length and employee performance. Shift length indicates a very weak relationship r (.109) and not statistically significant with employee performance of APDL P>0.05 (.139), this weak relationship indicates that the increase in number of hours from 8 to 10 or 12 hours will reduce employee performance. This means that there is a relationship between shift length and employee performance, so this no significance relationship does not influence employee performance. With the above comments therefore, our hypothesis that shift length significantly affects employee performance at APDL is not supported. In order to determine the strength of this relationship between shift length and

employee performance at APDL, regression analysis was done and results are in the table as below.

Table 12: Model summary of shift length and employee performance

Model Summary									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.109[a]	.012	.002	.66634	.012	1.194	1	100	.277

a. Predictors: (Constant), shift length

b. Dependent Variable: Employee performance

The results above show that shift length had R square (R^2) =0.012 or1.2%, R^2 shows how a set of independent variables explain variations of a dependent variable. Shift length as an independent variable accounts for 1.2% of the variations of the employee performance the dependent variable. The model summary table above revealed the correlation coefficient (R) using the predictor as shift length is .109, R^2 (.012) and Adjusted R square .002. In other words, 2% of shift length proportion of variance in independent variable of the study explains the 1.2% proportion of variance in employee's performance. It can be interpreted that increase in hours of work will lead to decrease in employee performance. This is supported by descriptive results that revealed that 46.6% of employees at APDL prefer working on an 8 hours shift and 41.7% want shorter shift compared to 3.9%who agreed that they prefer working on are 12 hours shift. This implies that .012*100 (1.2%) variations in employee performance is explained by shift length while the remaining percentage can be explained by other factors.

In summary shift length that is recommended at APDL is 8 hours because it is necessary to reduce stress. So employees working on eight hours will have less stress as it is supported by the response we got from people who agreed to the question that they would like to work on 8 hours shift being 46.6% and according the person in administration who told us that “8 hours give employee maximum concentration on the job”.

4.3.2 Relationship between shift timing and employee performance at Abacus Parenteral Drugs Limited.

The study was also set to evaluate the relationship between shift timing and employee performance at Abacus Parenteral Drugs Limited and the findings of this objective were got as shown in the table below.

Table 13: Description of shift timing by respondents

Questions	SD	D	N/A	A	SA	Mean	Sd
	Frequency	Frequency	Frequency	Frequency	Frequency		
I work on the shift i want	21 20.4%	25 24.3%	12 11.7%	34 33.0%	8 7.8%	2.83	1.319
Am changed frequently from one shift to another	21 20.4%	25 24.3%	8 7.8%	36 35.0%	5 4.9%	2.78	1.306
I like the shift am working on	13 12.6%	17 16.5%	7 6.8%	52 50.5%	11 10.7%	3.31	1.253
I spend quality time with my families	18 17.5%	32 32.0%	8 7.8%	29 28.2%	7 6.8%	2.73	1.284

I meet my social obligations easily	17 16.5%	38 36.9%	8 7.8%	21 20.4%	10 9.7%	2.67	1.298
I would like to work on a different shift	10 9.7%	27 26.2%	9 8.7%	34 33.0%	14 13.6%	3.16	1.289
I would like to work on the morning shift	12 11.7%	15 14.6%	11 10.7%	39 37.9%	22 21.4%	3.44	1.319
I would like to work on the afternoon shift	23 22.3%	31 30.1%	12 11.7%	17 16.5%	10 9.7%	2.57	1.33
I would like to work on the night shift	34 33.0%	24 23.3%	11 10.7%	15 14.6%	9 8.7%	2.37	1.374

Source: Primary data

Key: SA= Strongly Agree, A= Agree, N= Not sure, D= Disagree, SD= Strongly Disagree, sd=Standard deviation.

The table 13above shows responses as indicated by respondents on the shift timing and employee performance, shift timing is the different time that a person works on a shift, for example morning, afternoon and night, in summary age, gender, circadian type, genetics, personality, operationalization of shift work tolerance and many more may cause difference in performance in shift work timing, 33.0% of employees agreed with item one that they work on the shift they

want compared to 24.3% who disagreed with the statement. The majority of the respondents wanted the shift they are working on because it suits in their daily work that it enables them to do other things like take care of their families that's why their agreed that they like the shift they work on.

On Item two 35.0% respondents agreed that they are changed frequently from one shift to another whereas 24.3% disagreed while 7.8% were not sure. This shows that those employees are frequently changed from one shift to another so that everybody gets a chance to work on all the shifts and this motivates them.

On item three 16.5% employees disagreed that they like the shift they are working on compared to the 50.5% who agreed that they like the shift they are working on. This shows that respondents like the shift they are working on, the morning employee like the morning, the afternoon like the afternoon and the night like working on the it whereas the percentage that disagreed a the ones who work for example on the night shift yet they want morning shift or work on the morning but prefer night so that they can use their day time for other commitments.

On item four28.2% of employee agreed that they spend quality time with families compared to 32.0% who disagreed and 7.8% did not give their view. This means that a large number of employees spend less quality time with their families because of evening or night shift working although others who agreed that they do may be morning workers who go back home at 2pm.

On item five 20.4% agreed that they meet their social obligation easily compared to 36.9% employees who disagreed with the statement. This shows that most employee don't meet their social responsibilities like being with family and children on weekend or evening time and other employees don't get enough breaks to go for burial when its needed due to shift working.

On item six 33.0% accepted that they would want to work on a different shift compared to 26.2% employees who disagreed and 8.7% were undecided. This shows that a bigger percentage would like to work on a different shift than the one they a working on, many be employee working on the morning shift and would like to work on the night shift or employee with different responsibilities would like to take on different shifts.

On item seven 37.9% employees agreed that they want to work on the morning shift while 14.6% employees disagreed to work on the morning shift. This means that are big number of employees would like to work on the morning shift because these are the normal working hours for every one or this is the time when our biological clocks dictates us to be up and working.

On item eight 16.5% accepted that they would like to work on the afternoon shift compared to the 30.1% who disagreed with working on the afternoon shift. This means that a good percentage of our respondents don't like to work on the evening shift because this would make them miss to socializes with their families and friends.

Finally employees that agreed to work on the night shift were 14.6% compared to the 23.3% who disagreed to work on the night shift. This implies that majority of the respondents do not want to work on the night shift except the night – owls or people who want to take on 2 jobs.

The information is backed by the individuals we interviewed who agreed that shift timing affects employee performance at APDL like the production person who told the researcher that "*some people who like less supervision will opt for night shift where there is less supervision so that they can perform better when its them in control*" so if these people are put on the morning shift where supervision is at its maximum their won't perform well. Employee with primary school going children will not perform well if put on the night shift because they have other obligations to meet at home so such people best perform on the morning shift.

Therefore shift timing may have a relationship with employee performance at APDL. To test the research hypothesis that there is a significant positive relationship between shift timing and employee performance at APDL, the Pearson product moment correlation was done as shown in the table below.

Table 14: Correlations between shift timing and employee performance at APDL.

A correlation analysis was computed, examined and interpreted. This was done to find out if there is a relationship between shift timing and employee performance at APDL.

Correlations			
		shift timing	Employee performance
shift timing	Pearson Correlation	1	.282**
	Sig. (1-tailed)		.004
	N	103	103
Employee performance	Pearson Correlation	.282**	1
	Sig. (2-tailed)	.004	
	N	103	103

**. Correlation is significant at the 0.01 level (2-tailed).

The findings in the table above shows the correlations between shift timing and employee performance. The finding shows the Pearson correlation (r=0.282**), significant at p<0.01 (0.004) and at 95% confidence level. Shift length indicates a weak positive relationship with employee performance at APDL. This means that shift timing is positively related to employee performance and this implies that these two variables will move in the same direction when shift timing is done well like if everybody gets to work on the shift they want then performance will get better. Therefore, this supports the hypothesis that there is a relationship between shift timing and employee performance at APDL. Basing on the positive results above a regression analysis was done to ascertain the extent to which shift timing relates to employee performance and the results are below.

Table 15: Model Summary of Shift timing and Employee performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.282[a]	.080	.070	.64035	.080	8.729	1	101	.004

a. Predictors: (Constant), shift timing
b. Dependent Variable: Employee performance

The model summary table above shows that correlation (r) using the predictor shift timing is r =.282 and the R^2 (.080) at 90% confidence level and this means that there is a positive relationship between shift timing and employee performance. The R^2 demonstrates how a set of independent variable explains variations of the dependent variable (Mugenda & Mugenda, 2003). This implies that 8.0% (.080*100%) variation in employee performance is explained by shift timing. Adjusted R squared (.070) means that 7.0% is the proportion of the variance in

employee performance that is explained by shift timing as an independent variable. In other words 7.0%of shift timing proportion in the independent variable of the study explains 8.0% proportion in the employee performance. This positive relationship can be supported by the descriptive results which revealed that 50.5% employees like the shift they are working on. The weak relationship is revealed by 24.3% employee who disagreed that they work on the shift they want. This means that the employees are not given an opportunity to choose which time they wanted to work, although the remaining percentage can be explained by other factors.

In summary if the employees chose their work time they would perform better at APDL. Female shift workers perform better generally in an environment more similar to that of day compared to male shift workers who can work on any shift. In our interview with the shifts supervisor he said "we put men more on the night shift then the woman because it's easier for men to travel to this place at night then the woman because woman make a lot of excuses when put on the night shift to be absent". Our research supports this that if APDL put more women on the morning shift than afternoon and night shift then performance would be higher.

4.3.3 Relationship between circadian rhythm and employee performance at APDL.

Shift work studies have confirmed that performance on various tasks like color naming and vigilance, is impaired at night, this has been interpreted as reflecting a circadian rhythm (24 hours) in performance efficiency which is thought to be mediated by the circadian rhythm which exists in most physiological functions that's why the researcher designed the items below to seek for respondents views and in the table below a results.

Table 16: Description of Circadian rhythm by respondents

Questions	SD	D	N/A	A	SA	Mean	sd
	Frequency	Frequency	Frequency	Frequency	Frequency		
I stay alert all the time	8 7.8%	12 11.7%	11 10.7%	42 40.8%	19 18.4%	3.57	1.207
I need more breaks in my shift	10 9.7%	18 17.5%	9 8.7%	51 49.5%	12 11.7%	3.37	1.203
I get enough sleep after my work	6 5.8%	23 22.3%	10 9.7%	42 40.8%	16 15.5%	3.4	1.315
I can perform equally well on all the shifts	11 10.7%	29 28.2%	7 6.8%	35 34.0%	15 14.6%	3.4	1.315
I don't feel sleepy when am working	16 15.5%	18 17.5%	10 9.7%	37 35.9%	17 16.5%	3.21	1.372
I always have good healthy regardless of the shift am working on	18 17.5%	24 23.3%	13 12.6%	34 33.0%	11 10.7%	2.96	1.325
Am always in the right mood and attitude at	15 14.6%	27 26.2%	9 8.7%	34 33.0%	12 11.7%	3.01	1.327

work							
I have enough leisure time	30 29.1%	25 24.3%	7 6.8%	26 25.2%	8 7.8%	2.55	1.391
My age and gender doesn`t affect my working any way	9 8.7%	12 11.7%	7 6.8%	42 40.8%	22 21.4%	3.61	1.258

Source: Primary data

Key: SA= Strongly Agree, A= Agree, N= Not sure, D= Disagree, SD= Strongly Disagree, Sd= standard deviation

According to table 16 above indicates that respondents agreed with item one that they stay alert all the time 40.8% employees compared to 11.7% employee who disagreed and 10.7% were undecided. This shows that those employees are alert most of the time on their jobs because they know they are being supervised all the time so have to stay active.

On item two 49.5% employees agreed that they need more breaks in the shift compared to 17.5% who disagreed. This means that employees need more breaks when working. This was observed as the afternoon and night employee were working they were yawning and starching. Also one of the administrators mentioned that "*at night lots of accidents happen because the employees are sleepy so they need more breaks to relax*" so this emphasized the need for more breaks.

As on item three 40.8% respondent agreed that they get enough sleep after work while 22.3% disagreed and9.7 were un decided, this means that employee get enough sleep after working on their shifts, this may be the morning and afternoon employee who get home early to sleep.

On item four 34.0% respondents agreed that they can perform equally well on all the shift compared to 28.2% who disagreed. This implies that employee can perform well if put on any shift cause they are given training as they begin work but there is a big percentage as well who disagreed that they don't perform well this may be due to different shift that a person works on but doesn't fit well on that shift.

Item five 35.9% respondents agreed that they do not feel sleepy when working compared to 17.5% who disagreed. This implies that respondents do not fell sleepy when working and this big percentage of people who agreed may be the morning and afternoon employee who work when it's normal working time for everyone.

On item number six 33.0% respondents agreed that they have good healthy regardless of the shift they are working on compared to 23.3% employee who disagreed .

On item seven 33.0% respondents agreed that they are always in the right mood and attitude at work compared to 26.2% who disagreed. This implies that people are always in the right mood and attitude as evidenced on the people working on the morning shift who are faster and work with smiles.

On item eight 25.2% respondents agreed that they have enough leisure time compare to 24.3% employees who disagreed. This shows that the respondents have enough leisure time but also a big number of respondents also disagreed this may be the night workers who are always working on the night shift or working on weekend.

Finally 40.8% respondents agreed that age and gender does not affect my work in any way compared to 11.7% respondents who disagreed and 6.8% were undecided.

The above results shows that circadian rhythm affects employee performance with 49.5% agreed that they need more breaks during the shift this means that their biological system most especially the night works needs more breaks because by the time they are working the biological systems dictates sleep, so they need more breaks to freshen up. With a highest mean of 3.61 saying that the age and gender doesn't affect their work, this means that both old and young perform as well as the female and male can do the work the other gender can do well.

To test the research hypothesis that there is a significant positive relationship between circadian rhythm and employee performance.

Table 17: Correlation between circadian rhythm and employee performance

A correlation analysis was computed, examined and interpreted. This was done to establish whether there is a relationship between circadian rhythm and employee performance.

Correlations			
		circadian rhythm	Employee performance
circadian rhythm	Pearson Correlation	1	.399**
	Sig. (1-tailed)		.000
	N	103	103
Employee performance	Pearson Correlation	.399**	1
	Sig. (1-tailed)	.000	
	N	103	103

**. Correlation is significant at the 0.01 level (1-tailed).

The findings in the table above show the correlation between circadian rhythm and employee performance. The findings show (r=0.399) the significance value p<0.01 (.000) 99% confidence level, N represents the number of respondents 103. Circadian rhythm indicates a positive correlation with employee performance in APDL. This implies that circadian rhythm is positively related with employee performance and these two variables move in the same direction. Circadian rhythm affects employees while they are working, for example feel sleepy, low alertness and bad moods, this means that employee performance will also be affected and if it doesn't then performance will be high. Therefore does support the hypothesis that there is a significant positive relationship between circadian rhythm and employee performance.

On the basis of the results got show a strong positive significant relationship between circadian rhythm and employee performance at APDL. A regression analysis was done to support the extent to which circadian rhythm affects employee performance at APDL and table below shows the results.

Table 18: Model summary of Circadian rhythm and employee performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.399[a]	.159	.151	.61214	.159	19.076	1	101	.000

a. Predictors: (Constant), circadian rhythm

b. Dependent Variable: Employee performance

The model summary table above shows that correlation coefficient(R), using the predictor circadian rhythm, is .399 and R^2 (.159) and at 99% confidence level and this means that there is a positive relationship between circadian rhythm and employee performance. The R2 demonstrates how a set of independent variable explains the variation of a dependent variable as (Mugenda and Mugenda 1999). This implies that 15.9% (.159*100%) variation in employee performance are explained by circadian rhythm. Adjusted R square (.151) means that 15.1% is the proportion of the variance in employee that is explained by circadian rhythm as an independent variable. In other words 15.1% of circadian rhythm proportion in the independent variable of the study explains the 15.9% proportion in employee performance while the remaining 84.1% of variation can be explained by other factors. However results show that if circadian rhythm (biological clock) works normal as it is expected then it will have a positive impact on the employee performance. This significant relationship can be supported by the descriptive results which revealed are percentage of 49.5 employees who agreed that they need more breaks in shifts. As told to us by an administration person "*that shift workers especially the*

night shift need more than one break with in those 8 hours of work to relax so as to improve on their performance".

In summary, we found out that the circadian rhythm affects shift workers especially the night shifts because we observed that the night workers are slow when doing their work then the rest of the shift workers and lots of accidents happen at night because of the low alertness that employees have at APDL.

4.3.4 Summary

The findings as discussed above showed that frequencies, correlation, regression and tested hypothesis between shift timing, shift length and circadian rhythm. The findings accepted the hypothesis of shift timing, circadian rhythm and rejected the shift length. Shift timing and circadian rhythm were found to have a weak significant relationship to employee performance at APDL, shift timing had are (95%) level of confidence were as circadian rhythm had (99%) level of confidence. Shift timing was related to employee performance but with a weak relationship and there for does support the hypothesis that shift timing significantly affects employee performance at APDL.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.

5.0 Introduction

This chapter comprises of summary of the study, discussion of the findings, conclusions and recommendations. It also presents the contributions of the study and areas for further research. The summary, discussion of the findings, conclusion and recommendations are presented according to the objectives and referred to the related literature. This is presented under the sub-heading of shift timing, shift length, circadian rhythm on employee performance at APDL. The findings are based on the study to examine the effects of shift working on employee performance at APDL.

5.1 Summary of the findings

The purpose of this research was to examine the effects of shift timing on employee performance at APDL and its objective were to examine the effects of shift length on employee performance at APDL, to evaluate the effects of shift timing on the employee performance at APDL to evaluate effects of the circadian rhythm on employee performance at APDL. A correlation and cross sectional survey study was carried out to examine the effects of shift working on employee performance at Abacus Parenteral Drugs Limited APDL between Jan 2009 up to Dec 2011. The direction and degree of strength of the relationship were determined by Pearson product-moment correlation and regression analysis using SPSS.

5.1.1 Relationship between shift length and employee performance at APDL.

According to the results of the analysis, it was established that there was a weak and not significant relationship between shift length and employee performance with a correlation of 0.109 and a p value of 0.139. The regression model summary helped the researcher to explain R square 0.012 which explains that 1.2% total variation in shift length causes variation in employee performance. This indicates that the percentage that didn't like their hours is high and if APDL doesn't satisfy them by putting only eight hours per shift it will lead to continuous low performance.

5.1.2 Relationship between shift timing and employee performance at APDL.

The study found out that there was a weak positive and highly significant relationship between shift timing and employee performance. The Pearson correlation was establish at 0.282** with a p-less than 0.01. In the regression analysis it was revealed that 0.080 which implied that 8.0% of shift timing was the total variation of employee performance. This weak relationship is due to the result we got from the employees who disagreed that they do not meet their social obligations easily like having enough time with their families or attending social functions on weekends, because they are busy working and are not able to help the children with homework after school as told to the researcher in the interview with one of the respondents. So if APDL does not put employee on the shift they want to work on then its risking its productivity or performance in the market.

5.1.3 Relationship between circadian rhythm and employee performance at APDL.

It was established that there was a weak and very highly significant relationship between circadian rhythm and employee performance. The Pearson correlation was establish at 0.399** with a p-value less than 0.01. In the regression analysis it was revealed that 0.151which implied

that 15.9% of circadian rhythm explains the variation in employee performance. This is revealed by the results we got when we asked if employees need more breaks in the shift and a lot of employee agreed to the statement, this shows that they get tired and want more breaks with in the shift.

5.2 Discussion of the findings.

The discussion of the findings of our study will be done following our study objective. The 1st objective was to identify the effects of shift length on employee performance at APDL, to evaluate the effects of shift timing on the employee performance at APDL, to evaluate effects of the circadian rhythm on employee performance at APDL.

5.2.1 Shift length and employee performance at Abacus Parenteral drugs limited.

In the findings, the importance of shift length to employee performance at APDL could not be under estimated if the organization is to progressively improve on its employee performance. Shift length is comprised of different number of hours (8hrs, 10hrs, 12hrs) that employee are supposed to work on to find out which number of hours make people perform to their best. According to Shubin 1978 as cited by (Coffery, Skipper, & Jung, 1988) feels that the enforcement of strict 8-hour shifts is necessary to reduce stress because with the eight hours an employee gets enough rest after work, some good time to spend with family and enough time to fully concentrate on the job so that he/she performs well compared to other longer hours of work. Shubin findings a related to our finding, in our findings 46.6% of the employee at APDL agreed that they would like to work on an 8 hours shift. As well as (Jeanmonod, Jeanmonod, & Ngiam, 2008)confirmed that employees who worked for a few hours produced more that those who worked on longer hours. Our findings as well agree with those of (Jeanmonod, Jeanmonod, & Ngiam, 2008) because the morning shift produces20,000 bottles but work for 8hours compare to

the afternoon shift where some employee a supposed to work up to midnight but only produce 19,000 bottles. Analysis of the research variables established a weak relationship and not significant between shift length and employee performance.

From the information got from the respondents during the study, it was confirmed that most employees like to work on the 8hrs shift with the highest mean of 4.03% to support it. This is supported by management people who have tried to put every shift employee on an 8hrs shift. Despite the 8hrs that have been put in place by APDL production/ performance has not improved and that lead us to a conclusion that it`s not only the 8hrs that can increase production at APDL but also other factors attribute to performance at APDL, like as the shift supervisor of APDL told us that "not only 8hrs of shift will improve performance but other factors like high employee turnover because all shift workers a contractors this means high performing employee will leave when their contract expires" this means new and inexperienced staff will come in.

These findings are related to the previous finding of (Sally & Drew, 2011)who carried out research on 12hrs-8hrs, which hours do produce more results. Sally and Drew review suggests that it is not sufficient to evaluate a shift pattern on the basis of a single dimension of a working time arrangement, such as shift length. Numerous factors associated with the work practice influence the outcome of a shift including start times, policies in place. Moreover, the type of work being done and the demographics or characteristics of the workforce are additional mediating factors. So shift length alone cannot significantly affect employee performance.

5.2.2 Shift timing and employee performance at Abacus parenteral drugs limited

The findings of the study revealed that students indicated a weak but significant relationship between shift timing and employee performance. This was revealed after the results we got form our respondents on all shift timing questions. The findings of our study are consistent with the findings of Tepas and Monk (1987) who asserted that shift timing is associated with employee performance.

According to the findings of the study shift timing was important to employee performance at APDL. Many of our respondents with the highest mean of 3.44% agreed that they would like to work on the morning shift. This means that in the morning everybody is alert and active ready to produce as much as possible, this is reflected in the number of produce with the morning shift given the highest number of production that's between 21,300 bottles to 30,000 bottles. Though documentary review (Human resource report 2010) we discovered that housekeeping that takes place every first 3 hours of the day affect production because this makes the morning shift employee to work for less time or work with disturbance because of the cleaning taking place. To add on that the human resource report revealed to us that little training is given to the employees because of the short time that they will work with APDL most of the employees a casual workers so they work on a contract basis. So this little training also has an impact on the performance of shift workers.

According to the respondents since they are just awarded the shift they are working on, this impacts on their performance, just like how Tepas and Monk (1987) came up with the following list of individual differences like the morning lark and night-owl this may cause low or high performance because while others like the night shift and if they a put on the morning shift psychological they won`t be happy or perform to their expectation so if everybody was put on

the shift they wanted to work on then they would produce more or their expected targets because that would be a motivator to them.

Our findings as well are related to the findings of (Arber & Bara, 2009), who reports that female shift workers generally work in an environment more similar to that of day workers (with less noise and job insecurity) compared to what male shift workers. This was found to be true at APDL because the night shift has the least number of women compared to the male employee and morning shift had a lot of woman workers compared to the male employee.

5.2.3 Circadian rhythm and employee performance at Abacus parenteral drugs limited**.**

The study revealed that circadian rhythm affect employee performance more than shift length and shift timing. Circadian rhythm affects mostly the night and the evening employees of APDL because they are the ones who were working in the evening and night time when the biological clock is dictating that time to be at home with family, leisure time or to be sleeping.

From the findings of the study circadian rhythm was perceived as critical to the employee performance at APDL. With the majority of 49.5% agreeing that they need more breaks during their shift, this implies that they get tired and need more breaks during their shift to add on the one break which they get to have a meal not to chat with each other or to just relax their minds and muscles. Vigilance, is impaired at night this has been interpreted as reflecting a circadian rhythm (24 hours) in performance efficiency which is thought to be mediated by the circadian rhythm which exists in most physiological functions (Mills John Norton, 1970), that is why in APDL the night has the lowest target of 16,700 bottles which they don't even meet because of the low mood, low alertness which is caused by the biological clock that dictates that we should be sleeping at night and stay away during the day.

However as we observed that circadian rhythm is vital in employee performance though it doesn't affect every body like the staff of the morning shift who work in the normal working hours are not affected by it because the hours they work are the same hours that everybody is supposed to be working, so which such a shift their performance or productivity cannot be look at as being affected by circadian rhythm accept other factors as the respondents told us that low salaries which don't motivate them to work harder affects their performance and lack of enough transport thought there is Van but they a many that it cannot take all of them. So this affects their movement while coming to work in the early hours of the morning given the insecurity of the place, so this will affect the employee performance because if you came in late you won't be able to meet your individual targets which will affect the overall target for a shift.

This study is in constant with the finding of (Mills John Norton, 1970) who stated that performance on various task and vigilance is impaired at night. This has been interpreted as reflecting a circadian rhythm (24 hours) in performance efficiency which is thought to be mediated by the circadian rhythm which exists in most physiological functions. The researcher observed this by looking at the speed the night worker were using, the stretching and yawning at night as they were working, and records we got about the accidents that majorly happen at night.

5.3 conclusions

The conclusions of the study are arranged objective by objective. The interview with the key respondents showed that APDL has a big responsibility of supplying the Ugandan government with quality infusion like Ringer lactate, Darrow`s solutions and eye and ear drops so that they do not import in any for all government hospitals use. This calls for timely and bulky supply all the time. For APDL to achieve this it requires a lot of trained employee and good human resource policies to achieve its targets. Shift working is among the vital factors that help APDLto

achieve its goal because this helps in its 24hrs production weekly to meet the huge demand they have among other factors that contribute to the performance of APDL. Basing on the above the below conclusions were made.

5.3.1 Shift length and employee performance at Abacus parenteral drugs limited

Referring to the first research question asked, what is the relationship between shift length and employee performance at APDL? It was revealed that there is a very weak relationship between shift length and employee performance. The number of hours (8, 10 and 12) a person works affects their performance.

The findings also discovered that shift length had no significant relationship with employee performance. This may be attributed to the long hours that shift workers at APDL work. So the employees don't have enough time for families and resting after work.

The findings revealed that shift length explains little on the variation in the employee performance. This may be attributed to the fact that shift length is not the sole determinant of employee performance. Other factors may be explaining more variation in employee performance at APDL. The effect of shift length on the employee performance of workers should not be ignored. Management should put in place few hours of production that the employee remains productive throughout. And eight hours a recommended for in the factory setting for better results.

5.3.2 Shift timing and employee performance at Abacus parenteral drugs limited

Basing on the second research question asked, what is the relationship between shift timing and employee performance at APDL?

Studies revealed that shift timing employees who are morning larks and are working on the morning shift are happy with their work and do it well like the night owl who are on the night shift have good moods while working, these are the people you find singing while work and enjoying their jobs.

Working at different times and being rotated from one shift to another can be result yielding because everyone gets to work on that shift they want and this will give better result because every employee will work on that shift that will make him or her perform to their fullest.

It would be better if the entire employee would choose a shift they want to work on (morning, afternoon or night shift) for good performance.

5.3.3 Circadian rhythm and employee performance at Abacus parenteral drugs limited

Referring to the third research question asked, what is the relationship between circadian rhythm and employee performance at APDL?

The findings of the study revealed that circadian rhythm has a strong relationship and highly significant to employee performance at APDL. This is due to the fact that circadian rhythm is not the sole determinants of employee performance at APDL. Other factors like human resource policies like remuneration and contract of work, rotation of shift workers influence the performance of employee at APDL.

It was also revealed that some employee a kept on the night shift most of the time and this affects their performance because the biological clock dictates for us to be sleeping at night so if these people are always working at night they will have low moods and will be less alert all the time.

According to our observation the most group that is affected by the circadian rhythm is the night shift and the afternoon shift. In this group is where i saw a lot of sleepiness, less alerts, low work mood, employee a slower in this group.

Therefore this is the group that should be rotated the more that people do not stay no this shift for more than a week. There should be more than one break in every shift for employee to relax and the night shift should be given more breaks than the other shifts so that this motivates them to perform higher.

5.4 Recommendations

Our research ended up with the following recommendations presented in three dimensions shift length, shift timing and circadian rhythm. Circadian rhythm being the critical factor in the employee performance at APDL but also shift length and shift timing cause an impact on the performance of employee at APDL. Based on the findings and conclusions, the following recommendations are made.

5.4.1 Shift length and employee performance at Abacus Parenteral Drugs Limited.

There is need for APDL to divide the 24hours of the day into 8 hours only per shift. The 1st shift should begin at 6am then 2nd at 2pm and the 3rd at 10pm. There should be no one working for more than 8 hours and they should put some people on part time that in case an employee is absent or sick or on leave the part timer should come and fill in for them. Instead of making one person to work for 16 hours because those people would not be productive. There is need for APDL management (human resource department) to implement only eight hours shift to so as they can produce their daily target.

Because with eight hours they will be lesser reject per bunch people will perform high because even eight hours is a motivator for high production, people are alert with in the eight hours of

hour, there a less accidents at work when people are alert and active this will help APDL to produce there expected target or even to produce more so that they can satisfy the current market and even export more to other countries.

5.4.2 Shift timing and employee performance at Abacus Parenteral Drugs Limited.

APDL management should engage the employees choosing the shift they want to work on before they assign them any because this will enable the employee choose the best time they can work on and produce high results. As the human resource department is recruiting employee for shift work they should try and ask them what time they feel like reporting and starting to work every day so that they fix them in those shifts where they lie.

They are employees who were working on the morning shift but would like to work on the night shift because this would help them find other jobs to look after their families so they said that so if these people are put on the night shift performance would be high. As well as the woman working on the afternoon and night shift told us that they have less time with their family so they always think of their children as they are working, so this increase the errors they make hence contributing to the amount of rejects. If such woman were to be put on the morning shift they would produce more because they know that they will go back in the evening to spend time with their children so this will reduce on the number of errors they make hence leading to high production.

5.4.2 Circadian rhythm and employee performance at Abacus Parenteral Drugs Limited.

The researcher would recommend that APDL management should put more lighter and little work for the night shift and this work should be more involving making them to move a lot so that they do not stay in one place or doing the same thing for long because this will make the

employee feel sleepy. The human resource department should revise the salaries of employee at APDL because money its self is a motivator for high performance, so this will motive the employee to work even harder. More breaks should be put for the night shift workers and incentives at the end of the week for the night workers.

And APDL should put more shift employees and more work to the morning shift because this shift every body`s brain is alert and everyone has the right mood towards work because those are the working hours for every one and that's the time our biological clock dictates us to be working. So employee on this shift a supposed to work more

5.5 Limitation of the study

There is a lot of literature about shift working but most of it talks about shift work and well-being, shift work and safety and little has been written about on shift work and employee performance. Most shift work studies or reports are carried out in hospitals, power plants, control rooms, police and little talk about drug manufacturing.

The fact that the study was carried out among employee of APDL example mixing chemists, dispensing chemists, sterilizer chemists, m/c operators, packing supervisors and casuals. Most of the respondents were hesitant to fill in the questionnaire thinking it would affect their jobs or lead them to be expelled from work but the researcher had to assure them that it's anonymous doesn't require you to write your names on it so no one will trace you and it`s purely academic then the respondents filled in the questionnaires.

The study was carried out amount the three shifts (morning, afternoon and night),this was a problem for the research to move at night to go interview the night shift during their meal time

which takes place at 3:00am? The factory is far from Mukono town and it is so insecure to move after 10:00pm so I had to hire local police men and taxi to go with me for security reasons.

The fourth limitation was in my questionnaire I used N/A to mean undecided this was a limitation because some respondents didn't know where to apply it during answering. My Questionnaire didn't have a box to cater for the respondents below 21 years old. Instead of marital status I used civil status may be this confused some people and it even missed out the widows. The researcher had to explain to the respondents that N/A means undecided and the boxes that were missing I told my respondents to write their age above and marital if it were missing so that I can include all when am entering data.

Another limitation was I didn't interview or give questionnaires to people like supervisors at night or security people may be they would have given me different ideal. Despite the above mentioned limitation the research about shift working and employee performance at APDL was conducted and information was got successively

5.6 Contribution of the study

The study has made a contribution to the existing body of knowledge in the areas of shift work and employee performance in the drug manufacturing industries in Uganda. Basing on the empirical findings it shows that most people would like to work on the morning shift but they are those that would perform better if put on the night shift. The employer should engage their employee when choosing which shift to allocate to them. People have different time for concentration this will motivated them internally to work harder.

5.7 Areas for further research

During the study the research examined the effects of shift working on employee performance at APDL. The dimensions of shift length, shift timing and circadian rhythm were studied using descriptive research design to find out their effect on employee performance at APDL. Therefore I would recommend other researchers to carry out research on psychological impact of shift work in manufacturing companies, effects of rotational shift on employee performance in manufacturing companies.

REFERENCES

Amin, E. M. (2005). *Social science research: conceptual, methodology and analysis* . Kampala: Makerere publisher.

Arber, S., & Bara, A. C. (2009). Working shift and mental health. Findings from the British house holdpanel survery(1998-2005). *Work Environment Health*, 35:361-367.

Barton, J., Spelten, E., Totterdell , P., Smith, L., & Folkard, S. (1995). Is there an optimum number of night shift? *Work and stress 9*, 109-123.

Coffery, L., Skipper, J. K., & Jung, F. D. (1988). Nurses and shift work: Effects on job performance an job reated stress. *Advanced Nursing 13.*, 245-254.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for behaviour csience.* L.E rbaum Associates.

Colquhoun, W. P., & Rutenfranz, J. (1980). *Studies of shiftwork.* London: Taylor and Francis.

Connor, B. E. (1971). Bacterial infection and sickle cell anemia. *Medicine*, 97-112.

Costa, G. (2003). Factors influencing health of workers and tolerance to shift work. *Theoretical issue in Ergonomic science*, 263-288.

Folkard , S., & Monk , T. (1985). Temporal factors in work-scheduling. *Hours of Work*.

Folkard, S., Monk, T., & Labban, M. (1979). Towards a predictive test of adjustment to shift work. *Ergonomics 22*, 79-91.

Frurnaham, A., & Hughes, K. (1998). Individual difference correlates of night work and shift work rotation. *Personality and individual difference 26*, 941-959.

Fullick, s., Charlotte, G., Benjamin, E., Christoper, M. J., Thomas, R. P., Richaedson, D. J., et al. (2009). *Relationships between leisure-time energy expenditure and individual coping strategies for shift-work.* Liverpool: Taylor & Francis.

Jeanmonod, R., Jeanmonod, D., & Ngiam, R. (2008). Resident productivity: does shift length matter? *Emergency Medicine 26 (7)*, 789-91.

Jonathon P.R Scott, L. R. (2006). Effects of sleep deprivation and exercise on cognitive, motor performance and mood. *Physiology and Behaviour*, 396-408.

Kecklund, G., Goransson, B., Akerstedt, T., & Mats, G. (2002). Operator performance and signs of sleepiness during day and night work in a simulated thermal power plant. *Industrial Ergonomics*, 101-109.

Lawrence, S., & Barton, J. (1994). Shiftwork and personal control. *European work and Organisational psychologist*, 101-120.

Madide, S. (2003). *Effects of night shift schedule on the nurse working in a private hospital in South Africa* . Sweden.

Marriott, R. W. (1953). Night work and shift changes. *Industrial Medicine*, 164-172.

Martin, C. C.-E. (1982). Rotating shift work shedules that disruptsleep are improve by applying circadian principles. *Science*, 460-463.

Mills John Norton, C. R. (1970). *Human Circadian rthythms.* London: Churchill.

Monk, T., Folkard, S., & Wedderburn, A. (1996). Maintaining Safety and high Performance on shift work. *Applied Ergonomic*, 17-23.

Mugenda , O. M., & Mugenda, A. M. (2003). *Research methods: quantitative and qualitative approaches.* Nairobi: Nairobi African centel for technology studies.

Nakvik, S., Bjorn, B., Moen, E., Borge, S., & Borge , S. S. (2011). Personality factors related to shift work tolerance in two and three shift workers. *Applies ergomics*, 719-724.

Olson, C. M. (1984). Shift work and health. *Medicine*, 37-43.

Parkes, K. R. (2002). Age, smoking and negative affectivity as predictors of sleep among shift workers in environment. *Occupation Health Psychology*, 7:17.

Rutgers, G. (2001). The malleability of implicit prejudice and strereo types. *Personality and social psychology*, 856-868.

Saunder, M., Lewis, p., Thornhill, A., & Thill, J. V. (2006). *Research methords for bussiness students.* Pearson Education limited.

Simcha, R. (1981). An innovation in the quality of work life. *Flexible work hours*.

Spelten, E., Smith, L., Barton , J., Folkard, S., & Totterdell, P. (1995). Recovery from work shift: how long does it take? *Journal od applied psychology 80*, 43-57.

Spruill, E. L. (2008). *A correlational analysis relating organisation climate to employee performance.* Phoenix: Proquest LLC.

Thomas, M., & Sall, F. (2010). Prior sleep, prior wake and crew performance during normal flight operation. *Aviat Space Eviromental Med*, 81:665-70.

Todd, C., Morag, F., & Camilleri-Ferrante, C. (1998). Team midwifery: the views and job satisfaction of midwives. *General practice Midwifery*, 14:214-24.

Torbjorn, A. (1980). Inter individual differences in adjustment to shift work. *studies of shift work*, 121-130.

Yvonne, H., & Horne, J. A. (2000). The impact of sleep deprivation on decision making. *Experimental psychology*, 6:236-49.

APPENDICES

APPENDIX 1: QUESTIONNAIRE

UGANDA MANAGEMENT INSTITUTE

Researcher: Ritah Mugisha

Effects of shift working on employee performance at Abacus Parenterals Drugs limited.

This research is designed to explore the effects of shift working on employee performance in Abacus Parenteral Limited Uganda.

This study is in fulfillment of the requirement for a Master in Management studies (Human Resource)

INSTRUCTIONS

1. Participation to questionnaire is voluntary.
2. All information will be treated with strict confidentiality and will not in any way be used against you.
3. Please read all questions carefully and answer appropriate.
4. Please complete all questions by filling or ticking in the appropriate column for each question.
5. Please complete all questions before submitting the questionnaire.
6. Information obtained from the study will be used for recommendations.

Personal Data

1. Gender Male ☐ Female ☐

2. Age (Please specify in the box)

21-25 ☐

26-30 ☐

31-35 ☐

36-40 ☐

41-45 ☐

46 and above ☐

3. Civil Status

Married ☐ Single ☐ Divorced ☐ Separated ☐

4. The section/ department you work in.

Production section ☐

Packing section ☐

Water treatment ☐

5. Present shift ☐

Morning shift ☐

Afternoon shift ☐

Night shift ☐

6. Present contract

Permanent ☐

Contract ☐

Independent variable

Shift working

From question 1-9 of each section, tick (√) on the scales of 1-5 how strongly you agree or disagree with the statements given.

Scale	**1**	**2**	**3**	**4**	**5**
	Strongly disagree	**Disagree**	**N/A**	**Agree**	**Strongly Agree**

A	**Shift length**	1	2	3	4	5
1	I prefer working on the 8hrs shift					
2	Am happy with my work hours					
3	My work is easy					
4	I want to stay longer after the shift					
5	My work keeps me busy all the time					
6	I want shorter shifts					
7	I want to change my work hours					
8	I would happily work on the 10 hours shift if it increased on my salary					

9	I prefer working on 12 hours shift					
B	**Shift timing (morning, afternoon or evening)**	**1**	**2**	**3**	**4**	**5**
1	I work on the shift i want					
2	Am changed frequently from one shift to another					
3	I like the shift am working on					
4	I spend quality time with my families					
5	I meet my social obligations easily					
6	I would like to work on a different shift					
7	I would like to work on the morning shift					
8	I would like to work on the afternoon shift					
9	I would like to work on the night shift					
C	**Circadian rhythm**	**1**	**2**	**3**	**4**	**5**
1	I stay alert all the time					
2	I need more breaks in my shift					
3	I get enough sleep after my work					
4	I can perform equally well on all the shifts					
5	I don't feel sleepy when am working					
6	I always have good healthy regardless of the shift am working on					
7	Am always in the right mood and attitude at work					
8	I have enough leisure time					
9	My age and gender doesn`t affect my working any way					
D	**Employee performance**	**1**	**2**	**3**	**4**	**5**
1	I always meet my individual targets					
2	I produce good quality products					
3	I produce products in large quantity					
4	We have equal work load on all shifts					
5	I achieve my targets with easy					
6	I have task abilities to perform my work well					
7	I have enough knowledge to perform my work					
8	We produce quality goods					
9	Am paid enough salary that am motivated to work harder					
E	**Moderating**	**1**	**2**	**3**	**4**	**5**
1	Power never goes off					
2	Machines produce as expected					
3	Cleaners clean well					
4	Cleaners keep time					
5	Employee are always provided with safety gears					
6	Employee accidents a few					
7	Work starts at the right time					
8	Am feel secure on my way to work					
9	My work place has good lighting system.					

Thank You

APPENDIX II: OBSERVATION CHECKLIST

Behavior to be observed	**Comment**
1.Time keeping	
2.Speed when working	
3. Alertness at work	
4.Breaks taken during work	
5.Talking during work	
6.Facial expression	
7.Stretching	
8.Sleepness	
9.Accidents	
10.Mood	
11.Amounts of production	
12.Tiredness	
13. Gender difference in performance?	
14.Age difference	
15.Attitude	
16. Work environment	
17. Efficiency	
18.	

APPENDIX III: STRUCTURED INTERVIEW GUIDE

1. Department…….

2. Title……

Performance

1. How do you measure performance in your department?.....

2. What are your departmental targets?
……

3. What incentives do you give to employee so that performance remains high?.....

4. How do you motivate employees at work?……

5. How do you measure quality in products and performance?.....

6. How do you measure quantity products…….....

6. How are targets met?.....

Shift wok

1. Hours you recommend for shift work.....

2. Which shift produces more products…….

3. Which shift produces less products…….....

4. How do the shift workers benefit from that training?.....

5. How is shift rotation done?.....

6. What strategy you use to encourage people to perform high?.....

7. Does the biological clock affect performance in any way?.....