ISSN No:-2456-2165

An Analysis of How a 12-Hour Shift System Affects the Caliber of Performance in Law Enforcement

Dr. John Motsamai Modise
South African Police Service

Abstract:- The aim of this study is to review existing data sources to identify what we know about the prevalence of 12-hour shifts in nursing and the impact on both staff and administration personnel in the police. Specifically, this study aims to address the following questions: What is the prevalence of 12-hour shifts in policing? How much internal variation in shift length is there in policing? What impact does shift length have on quality of policing and staff experience? To simulate a 12 hour shift rotation and measure the difference in performance if any. Significant reductions in neuro behavioural performance during shift work and particularly night work have long been recognised. There are conflicting reports of the effects of 12 hour shifts on performance, alertness, and safety. Furthermore, research suggests that older shift workers have more sleep disruption and maladaptation to shift work. When this is combined with longer hours at work there may be considerable reductions in performance for older compared with younger workers.

Keywords:- *Shift Work, Shift Length, Job Performance, Job, Satisfaction, Burnout, Professional, Absenteeism, Personnel Turnover, 12 Hour Shifts; Performance; Age, Sleep Reduction, Night Work.*

I. INTRODUCTION

Police work is a 365-day a year, 24/7 operation. As such, the issue of police scheduling is of utmost importance in achieving appropriate service area coverage at all times on all days. Traditionally, police departments have relied on a 5-day, 8-hour scheduling framework with three standard shifts (day, evening, midnight) in each 24-hour period. Nevertheless, many agencies have adopted alternative work schedules such as compressed schedules and workweeks, the type of schedule in which the workweek is shortened and the length of the day is extended. Yet to date, there has been no randomized experiment of the impacts of these shifts in law enforcement.

Nontraditional, compressed schedules in law enforcement are not new; many agencies have initiated pilot programs or employed CWWs over the past several decades. Since the early 1970s, this topic has been the focus of numerous articles in professional publications such as Police Chief magazine and *FBI Law Enforcement Bulletin.* For example, in 1970, Huntington Beach, California, instituted a pilot test of the 10-hour shift (Robitaille, 1970). Also, Gavney, Calderwood, and Knowles (1979), in reporting that the Inglewood, California, Police Department had implemented a 4-day workweek in 1976, noted that many law enforcement agencies had established, experimented with, or considered a 4-day workweek. As agencies began to implement compressed schedules in the 1970s, some data began to surface, although most was of little scientific merit. The provision of 24-hour policing work inevitably involves shift work and flexible working, including “long days” or 12-hour shifts (Newey and Hood 2004, Lorenz 2008). However, these shift patterns have become increasingly controversial, with concerns raised over performance, fatigue and stress. Historically, traditional shift work patterns were based on three eight-hour shifts per day (Ferguson and Dawson 2011, Estabrooks et al. 2009), but over the past 20 years there has been a tendency to move away from this pattern of working in preference for the 12-hour shift (Todd et al. 1989, McGettrick and O’Neill 2006).

In South Africa, South African police service officers utilise 12-hour shifts primarily because managers believe it is a more cost effective way of providing 24-hour policing, with lower costs and greater continuity of staffing (Estabrooks et al. 2009). Some police officers also prefer to work longer daily ad nights hours with fewer shifts, which gives them greater flexibility, it’s easier to balance work and personal responsibilities (Messing, 1997)and more days away from work (Josten et al. 2003). However, there are increasing concerns over police quality of work in the 12 hours shift (Stimpfel and Aiken 2013), and some employers now question the benefits of such extended hours and are choosing to revert to eight-hour shifts (Geiger-Brown and Trinkoff 2010). Although the handover period has been criticised for being unproductive, with no formal ‘overlap’ 12-hour shifts can have a negative impact on opportunities for ward meetings, teaching, mentorship, teambuilding and research (Sprinks, 2012). A study in the US in “nursing” by Stimpfel and colleagues published in 2013 found that nurses who worked shifts of 12-hours or longer were significantly more likely to report poor quality care. No study in policing was found to compare.

Shift work is a common feature across many industries. Fatigue associated with long shifts has been linked with disasters such as the Chernobyl nuclear accident, Three Mile Island incident and the grounding of the Exxon Valdez (Miller, 2011). However, research to date is equivocal and

some studies have found little differences in terms of cost or productivity (Williamson et al. 1994) or levels of fatigue (Duchon et al. 1994) by shift length. A systematic review by Smith et al. (1998) compared eight and 12-hour shifts across a broad range of industries and concluded that longer shifts increased fatigue but also led to an increase in job performance. Tucker et al. (1998) examined the effect of shift length on alertness. Their findings showed that more rest days between shifts were associated with slightly higher levels of alertness and lower levels of fatigue.

Shift work is widely known to have adverse health effects: correlations have been found with incidence of cancer, diabetes, cardiovascular disease and lowered fertility, as well as sleeping problems, fatigue and stress, which can lead to accidents at work. When someone is working shifts, their social life also often suffers, because of the irregular and unsocial hours they work. Previous research has shown that 8-hour shift systems with fast rotations better enable employees to recover than slowly rotating 8-hour systems. Studies on 12-hour shift systems with slow rotations have also suggested that risks related to fatigue tend to accumulate in such circumstances, although employee satisfaction is often high. However, there have been fewer studies on 12-hour systems with fast rotations. Research on extended work hours has assessed the likelihood of acute myocardial infarction, diabetes mellitus, hypertension, subfecundity, and premature birth among individuals in good health. However, there is a dearth of information regarding the management of symptoms and the course of the disease in employees who already have chronic disorders.

II. THEORETICAL FRAME WORK FOR 12-HOUR WORKING SHIFTS

➢ *Chronobiology*

Chronobiology is the study of biological rhythms and their relationship to time. Humans have a natural circadian rhythm, which is a 24-hour cycle that regulates sleep-wake patterns, hormone levels, and other bodily functions. Shift work can disrupt circadian rhythms, leading to a number of problems, including fatigue, sleep disturbances, and health problems.

➢ *Shift Work Adaptation Syndrome*

Shift Work Adaptation Syndrome (SWAS) is a set of symptoms that can occur in people who work shifts. Symptoms of SWAS can include fatigue, sleep disturbances, difficulty concentrating, irritability, and mood swings. SWAS can also lead to more serious health problems, such as heart disease, stroke, and diabetes.

➢ *Social Jetlag*

Social jetlag is a mismatch between our biological clock and our social schedule. When we work shifts, we often have to adjust our sleep-wake patterns to match the work schedule. This can lead to social jetlag, which can cause a number of problems, including fatigue, sleep disturbances, and difficulty concentrating.

➢ *Theoretical Framework*

The following theoretical framework can be used to understand the effects of 12-hour working shifts:

- *Chronobiological Disruption:*

12-hour shifts can disrupt circadian rhythms, leading to a number of problems, including fatigue, sleep disturbances, and health problems.

- *Shift Work Adaptation Syndrome:*

Shift Work Adaptation Syndrome (SWAS) is a set of symptoms that can occur in people who work shifts. Symptoms of SWAS can include fatigue, sleep disturbances, difficulty concentrating, irritability, and mood swings. SWAS can also lead to more serious health problems.

- *Social Jetlag:*

Social jetlag is a mismatch between our biological clock and our social schedule. When we work shifts, we often have to adjust our sleep-wake patterns to match the work schedule. This can lead to social jetlag, which can cause a number of problems, including fatigue, sleep disturbances, and difficulty concentrating.

➢ *Implications for Research and Practice*

The theoretical framework above can be used to guide research on the effects of 12-hour working shifts. For example, researchers could investigate the following questions:

- How does the length of a shift affect the risk of SWAS and social jetlag?
- How do different shift patterns affect workers' health and well-being?
- What are the best ways to manage the negative effects of 12-hour working shifts?

The theoretical framework can also be used to develop interventions to help workers cope with the challenges of 12-hour working shifts. For example, employers could provide workers with training on how to manage their sleep and circadian rhythms. Employers could also offer flexible work arrangements and other support to help workers maintain a healthy work-life balance. 12-hour working shifts can have a number of negative effects on workers' health and well-being. The theoretical framework above can be used to guide research on the effects of 12-hour working shifts and to develop interventions to help workers cope with the challenges of these shifts.

➢ *How does the Length of a Shift Affect the Risk of SWAS and Social Jetlag?*

The length of a shift can affect the risk of SWAS and social jetlag in a number of ways.

- *SWAS*

✓ *Sleep Deprivation:*

12-hour shifts can lead to sleep deprivation, which is a major risk factor for SWAS.

✓ *Circadian Disruption:*
12-hour shifts can disrupt circadian rhythms, which can make it difficult to sleep and wake up at the same times each day. This can also lead to SWAS.

- *Social Jetlag*

✓ *Sleep Disturbances:*
12-hour shifts can lead to sleep disturbances, which can contribute to social jetlag.

✓ *Mismatch Between Work and Social Schedule:*
12-hour shifts can make it difficult to maintain a healthy work-life balance. This can lead to social jetlag, as workers may have to adjust their sleep-wake patterns to match their work schedule.

Studies have shown that workers who work 12-hour shifts are more likely to experience SWAS and social jetlag than workers who work shorter shifts. For example, one study found that nurses who worked 12-hour night shifts were more likely to report fatigue, sleep disturbances, and difficulty concentrating than nurses who worked 8-hour night shifts.

Another study found that shift workers who worked 12-hour shifts had higher levels of social jetlag than shift workers who worked 8-hour shifts. The reasons for this are not fully understood, but it is likely that the longer hours of work make it more difficult for shift workers to get enough sleep and maintain a healthy work-life balance. The length of a shift can affect the risk of SWAS and social jetlag in a number of ways. Shift workers who work 12-hour shifts are more likely to experience these problems than shift workers who work shorter shifts.

➢ *How Do Different Shift Patterns Affect Workers' Health And Well-Being?*
Different shift patterns can affect workers' health and well-being in a number of ways.

- *Rotating Shifts:*
Rotating shifts involve working different shifts on different days. This can be difficult for workers to adjust to, as it can disrupt their sleep-wake patterns and circadian rhythms. Rotating shifts have been linked to a number of health problems, including fatigue, sleep disturbances, cardiovascular disease, and mental health problems.

- *Fixed Shifts:*
Fixed shifts involve working the same shift on the same days each week. This can be easier for workers to adjust to than rotating shifts, but it can still lead to health problems if the shift is outside of the worker's natural sleep-wake cycle. For example, working night shifts has been linked to a number of health problems, including sleep deprivation, cancer, and heart disease.

- *Compressed Workweeks:*
Compressed workweeks involve working longer hours on fewer days. For example, a compressed workweek might involve working 10 hours per day for 4 days per week. Compressed workweeks can also disrupt sleep-wake patterns and circadian rhythms. Studies have shown that workers who work compressed workweeks are more likely to experience fatigue, sleep disturbances, and difficulty concentrating. Different shift patterns can affect workers' health and well-being in a number of ways. Rotating shifts, night shifts, and compressed workweeks have all been linked to health problems such as fatigue, sleep disturbances, cardiovascular disease, and mental health problems.

➢ *Which Shift Pattern Is The Worst For Workers' Health And Well-Being?*
It is difficult to say definitively which shift pattern is the worst for workers' health and well-being. This is because the effects of different shift patterns can vary depending on a number of factors, such as the individual's age, gender, health status, and lifestyle. However, some studies have suggested that rotating shifts may be the worst for workers' health and well-being. This is because rotating shifts can disrupt sleep-wake patterns and circadian rhythms more than other shift patterns.

➢ *What can be Done to Minimize the Negative Effects of Shift Work?*
There are a number of things that can be done to minimize the negative effects of shift work, such as:

- Providing workers with training on how to manage their sleep and circadian rhythms.
- Offering flexible work arrangements to help workers maintain a healthy work-life balance.
- Scheduling shifts in a way that minimizes disruption to sleep-wake patterns and circadian rhythms.
- Providing workers with access to support services, such as counseling and stress management programs.
- By taking these steps, employers can help to protect the health and well-being of their shift workers.

➢ *What are the Best Ways to Manage the Negative Effects of 12-Hour Working Shifts? (From Employee Perspective).*
The best ways to manage the negative effects of 12-hour working shifts include:

- *Get Enough Sleep.*
This is the most important thing you can do to stay healthy and well-rested while working 12-hour shifts. Aim for 7-8 hours of sleep per night, even if it means going to bed earlier or waking up later.

- *Establish a Regular Sleep Schedule and Stick to It as Much as Possible, Even on Days Off.*
This will help to regulate your circadian rhythm and make it easier to fall asleep and wake up at the same times each day.

- *Create a Relaxing Bedtime Routine.*

This could include taking a warm bath, reading a book, or listening to calming music. Avoid watching TV or using electronic devices in the hour before bed, as the blue light emitted from these devices can interfere with sleep.

- *Make Sure Your Bedroom is Dark, Quiet, and Cool.*

These conditions are ideal for sleep.

- *Take Breaks During Your Shift.*

Get up and move around every 2-3 hours to avoid fatigue.

- *Eat Healthy Foods.*

Avoid sugary drinks and processed foods, which can lead to energy spikes and crashes. Instead, focus on eating whole, unprocessed foods that will give you sustained energy.

- *Exercise Regularly.*

Exercise can help to improve sleep quality and reduce fatigue. However, avoid exercising too close to bedtime, as this can make it harder to fall asleep.

- *Manage Stress.*

Stress can make it difficult to sleep and can worsen the negative effects of shift work. Find healthy ways to manage stress, such as yoga, meditation, or spending time with loved ones.

- *Limited Family and Social Time During Working Days.*

It's possible that shift employees will see their spouses and kids less often during the workday. Conflicts between child care and day care might also arise because many babysitters might not be able to work longer hours and because child care centers' hours don't align with shift schedules. It could be more challenging for single employees to plan get-togethers and dates with friends.

- *Sleep Schedule Inflexibility.*

Shift workers may find it difficult to get the right quantity of sleep at the right time of day due to the restricted number of hours they have off throughout the workday. The decreased flexibility for sleep time can potentially lead to disruptions in sleep schedules. On the other hand, depending on their sleep physiology, night shift workers on an 8-hour schedule have the option of sleeping in the morning when they get home or staying up late and sleeping later in the day. Workers on 12-hour shifts are not as flexible, and they must train themselves to go to bed early and sleep into the early afternoon when working nights.

- *Irregular Pay Weeks.*

Most 12-hour schedules switch back and forth between 36- and 48-hour work weeks. It could be harder for employees to manage their money because most individuals base their budgets on a 40-hour workday.

- *Concerns of Older Workers.*

Compared to younger workers, older shift workers exhibit fewer favorable reactions to 12-hour shifts. Since it could interfere with their established work and social routines, many older workers are less eager to make schedule modifications. Additionally, they could think that 12 hours is just too much for a regularly scheduled workday. Actually, compared to younger people, those in their mid-50s or early 60s have a harder time maintaining attention over extended periods of time due to physiological differences. The elder shift worker may also have fewer motivations to work longer hours in order to shorten the workweek; for example, they may no longer be the parents of little children and may find that taking frequent vacations or extended breaks is not as necessary.

- *Reduced Tolerance of Long Commutes.*

When a shift worker commutes one hour each way to work, their actual time away from home could be as much as fourteen hours. This leaves little time for anything other than eating and sleeping. Regular exercise and leisure activities could be jeopardized. Thus, on 12-hour shifts, the distance between home and the plant can become more significant.

- *Difficulties in Scheduling Meetings.*

The average length of time that most employees desire to spend on-site is twelve hours. Therefore, the workday may be unnecessarily extended if shift workers are required to stay beyond the night shift for plant meetings or training. As a result, a lot of companies that use 12-hour shifts hold meetings and training sessions on "scheduled days off." Anecdotal evidence and survey results indicate that most shift workers would rather attend meetings on their days off than stay late after work, provided that the meetings are scheduled well in advance, don't exceed four hours, and happen no more than once every four weeks.

- *Reduced Tolerance to Physically Demanding Jobs.*

Working 12-hour shifts can make these occupations more challenging. If remedial action is not taken to address the issue, there could be a surge in injuries specific to the job as well as general discomfort, such back and foot pain. Reworking specific job procedures or switching up jobs during a shift are other solutions, and the extra recuperation days help to reduce many physical issues.

- *More Pay Lost When a Day is Missed.*

When shift workers take an unpaid day off, they might not get paid as much as they would if they worked eight hours a day. Their individual financial loss from absences is exacerbated by this. Nonetheless, with more days off, there is a greater than 50% chance that an illness will strike on a day off rather than a workday.

ISSN No:-2456-2165

- *Driver Fatigue Returning Home.*

It is normal for workers on all schedules to feel sleepy or to "fight" sleep when driving home, therefore being sleepy while driving is always a worry. One may expect that working a 12-hour shift would make the already challenging challenge of keeping awake while driving home after an 8-hour midnight shift much more difficult. This worry is, however, far more closely associated with the time of day that one commutes than with the duration of the shift. Thus, driving fatigue risk can be decreased with the aid of awareness training and other safety measures.

- *Fast-Rotating 12-Hour Schedules.*

When a schedule "flip-flops," from nights to days, it can lead to sleep issues since the body finds it difficult to adapt to frequent shifts. A well-thought-out, biocompatible plan that allows for adequate rest periods in between rotations can help minimize this issue.

- *Longer Hours Away from Home in the Evenings.*

Long work hours are not desirable when it comes to family and home security. These concerns can be alleviated through phone buddy networks, alarm systems, and watchdogs.

- *Increased Percentage of Night Shifts: Half of the Work Shifts Being Night Shifts on*

A 12-hour schedule, as opposed to just one-third of the shifts being night shifts on an 8-hour schedule. Naturally, this is offset by the fewer shifts worked and the fact that half of the workday will be dedicated to the day shift.

➢ *12-Hour Schedule from Management Perspective*

From a management standpoint, 12-hour shifts have the following main drawbacks:

- *Greater Challenge to Sustain Vigilance:*

For someone on watch duty, twelve hours might just be too long to keep up steady attention. An operator of a machine or console whose only duty it is to watch over a process for twelve hours can be getting close to or past the point at which they can continue to be completely successful. Nevertheless, this is merely an instinctive worry, and this impression isn't supported by any rigorous scientific research. Furthermore, the majority of jobs have not shown any issues based on survey and anecdotal evidence to date, with the exception of those that require a lot of physical labour and repetitive tasks. In these situations, reducing the amount of physical labour required, switching up job assignments across crew members during shifts, or redesigning the position or workstation are all potential answers.

- *Extended Exposure to Work-Related Stress.*

The day shift frequently presents strong demands for work-related activity and distraction for some shift workers who are assigned to control room duty. It also entails a high volume of interactions with maintenance, instrumentation engineers, contractors, and other support staff that work straight day shifts. During the week, this is especially true. For a control room operator, twelve straight hours might be a long time to handle the stress of these circumstances. Even while 12-hour hours are becoming increasingly common, publications to now have only mentioned a few rare instances of fatigue and stress related to working four consecutive 12-hour shifts.

- *Diminished Communication and/or Personal Interaction.*

There is less opportunity for management staff to contact with crews that work 12-hour shifts. Workers on rotating 12-hour shifts may only work seven days on day shifts in a 28-day cycle, reducing their exposure to day management. Employees may have less interactions with training professionals and be less available for meetings with management, HR, medical, and other staff members. To have the necessary employee interaction, management might need to be more accommodating with their own work schedule.

- *Unequal Distribution of Work Hours.*

Twelve-hour schedules range between 48- and 36-hour work weeks during each seven-day pay cycle. Given that overtime pay is mandated by federal law for labour over forty hours per week, it might be necessary to modify the payroll structure and basic pay rates in order to preserve cost neutrality. The process can be complicated by current collective bargaining agreements, but this has been easily handled with provisional modification letters based on mutual understanding.

- *Increased Risk of Getting Out of Touch.*

Extended vacations from the plant may be beneficial for the personal lives of shift workers, but they may not be necessary for industrial operations. After taking too many days off in a row, shift workers might not be as accustomed with operational changes, and they could need some time to acclimate back to work after a prolonged absence. To maintain operational "continuity," they might need to reacquaint themselves more frequently with the "big picture" of plant operations following extended pauses.

- *Potential Compromise in Alertness and Performance.*

Employees working shifts could be prepared to forfeit their attentiveness and productivity in the workplace in exchange for a longer string of days off. Even though there aren't many examples of shift workers' performance declining on 12-hour schedules to date, some shift employees may become biased when it comes to the possible negative aspects of 12-hour shifts.

- *Increased "Moonlighting".*

The idea that recuperation days will be less beneficial has been fostered by worries that some shift workers will take advantage of the extra days off offered by 12-hour shifts to take on second jobs, particularly physically demanding ones like farming and construction. As highly motivated individuals, only 7–10% of shift employees actually engage in this activity, and such workers also tend to be the most productive.

ISSN No:-2456-2165

- *Increased Ergonomic Risk.*

Shift workers with physically demanding occupations may have potential injury issues. Even while just 16% of workers hold these "hands on" positions today, working 12-hour shifts instead of 8-hour ones may put more people at risk for health ailments including carpal tunnel syndrome and back problems. To lessen the physical strain on employees, job processes and job rotation may need to be re-evaluated and changed. It is necessary to identify and address ergonomic concerns. Although actual experience hasn't always supported this, it is nevertheless a valid worry for certain positions.

- *More Difficult Absence Coverage.*

Establishing protocols to handle unforeseen absences is essential since it is not advisable to assign shift workers overtime hours on scheduled work days, extending the workdays beyond 12 hours. The efficacy of strategies like a volunteer overtime list backed by a scheduled (annual) call-out list determines how tough it can be to arrange training and planned overtime as well as cover for absences and vacations.

- *Difficulties of Change.*

Any new schedule selection and conversion is difficult and time-consuming. Management must frequently make an effort to enlighten shift workers on the various challenges that come with 12-hour shifts in order to facilitate decision-making, smooth the adjustment, and boost employee morale.

If you are struggling to manage the negative effects of 12-hour working shifts, talk to your doctor. They can offer additional advice and support.

Here are some additional tips that may be helpful for shift workers:

- *Avoid Caffeine and Alcohol before Bed.*

Both of these substances can interfere with sleep.

- *Expose Yourself to Bright Light During the Day.*

This will help to regulate your circadian rhythm and make it easier to fall asleep at night.

- *Take Naps During the Day If You Need to.*

However, avoid napping for more than 30 minutes, as this can make it harder to fall asleep at night.

- *If You are Working Night Shifts, Try to Get Some Sunlight Exposure During the Day.*

This will help to improve your alertness and mood.

- *Get Regular Medical Check-Ups.*

This will help to identify any health problems early on.

By following these tips, you can help to manage the negative effects of 12-hour working shifts and improve your overall health and well-being.

III. BUILDING A CULTURE OF HIGH PERFORMANCE

A. Theme One: Compare the Advantages and Disadvantages of a 12-Hour Shift to those of an Eight-Hour Shift.

➢ *Advantages of 12-Hour Shifts:*

- *More Days Off:*

Workers on 12-hour shifts typically work fewer days per week, which means they have more days off to spend with their families and friends, pursue hobbies, or relax.

- *Longer Weekends:*

Many 12-hour shift schedules include long weekends, such as three days off in a row every other week. This can be a major benefit for workers who want to spend more time with their families or have more time to relax.

- *Fewer Consecutive Days Worked:*

Workers on 12-hour shifts typically never work more than two days in a row. This can help to reduce fatigue and stress.

- *Increased Continuity and Accountability.*

The majority of the time, crew A gives the plant over to crew B at night, and crew B returns it to crew A the following morning. In contrast to eight-hour shifts, no one who discovers a problem can "pass the buck" to a third crew member. Workers are encouraged to "do as they would like to have done to them," which means that when they turn over and take over the plant, the issues should be resolved or at the very least acknowledged and discussed.

- *Reduced Adaptation Time.*

Many shift workers require a ramp-up phase in order to acclimate to their new shifts, which includes setting up tools and configuring monitors. Many claim that around the eight-hour mark, they are "in the groove" and would want to keep going rather than have to adjust to starting again the next day. Twelve-hour shifts reduce the percentage of adaption time since they require 91 fewer shifts annually than eight-hour shifts.

- *Higher Project Completion Rates.*

Extended maintenance activities and other lengthy assignments can be finished in a single shift. Crews are able to finish more of the processes they start during 12-hour shifts because there are still several hours left to complete the work plan. The majority of maintenance jobs necessitate lengthy lock out/tag out protocols. In order to ensure a safe crew change over, a significant amount of time is lost if the tasks are not finished before the conclusion of the shift. With an 8-hour shift, this can happen three times a day; with 12-hour shifts, it can only happen twice a day.

- *Reduced Absenteeism.*

Shift employees frequently "think twice" before skipping a shift because doing so consumes twelve hours of paid time off. They also have a tendency to feel more responsible to their team or to the person who might have to fill in for them for 12 hours on a day off. Thus, 12-hour shifts can be quite advantageous when implemented in plants where absenteeism is an issue. The drawback of this, though, is that some shift workers who ought to stay at home due to illness will show up for their 12-hour shifts, according to supervisors. More vacation days, however, also mean fewer conflicts with personal and family matters that could encourage absence. More time is available to attend to personal issues like sick children or doctor's appointments. Along with a 50% risk of illness occurring on days off, individuals are only scheduled to work half of the year, compared to 75% of the days with a regular 8-hour shift pattern. This reduces absences and unscheduled overtime covering.

- *Lower Attrition and Turnover.*

Generally speaking, shift workers are less interested in switching to different plants, non-shift jobs, or other careers. Employees with more experience are typically kept more easily. The temptation to support a return to 8-hour workdays is too strong given the increased number of vacation days. 96.5% of chemical plant workers who worked 12-hour shifts said they would not be interested in returning to an 8-hour schedule in an industry-wide survey.

- *Improved Morale.*

It is usually the case that shift workers and their families prefer twelve-hour shifts. There is less stress and a noticeable improvement in both work and home life quality.

- *More "Dedicated" Employees.*

Shift workers typically focus more on their work throughout the three to four days that they spend on duty when working 12-hour shifts. There's not much time left over for anything other than work, sleep, food, and commuting. Employees who work 12-hour shifts are more inclined to steer clear of significant social gatherings, binge drink excessively, or engage in physically demanding activities during their limited leisure time.

- *Increased Productivity, Reduced Errors:*

Some studies have shown that workers on 12-hour shifts can be more productive than workers on 8-hour shifts. This is likely because 12-hour shifts allow workers to complete tasks without having to switch gears multiple times throughout the day. There are only two shift turnovers per 24-hour day instead of three. Thus, there are fewer opportunities for miscommunication when there is a changeover in shift work personnel. There is less disruption of ongoing operations and reduced potential for errors. Because productivity often drops significantly and error and accident rates increase in many operations during shift transition times, this simple difference between 8- hour and 12-hour shifts has been found to have a significant impact on productivity and error rates. Reducing these "high risk" low productivity and high error periods by one-third can have significant financial and efficiency benefits for the operation.

- *Reduced Absenteeism:*

Workers on 12-hour shifts are less likely to call in sick than workers on 8-hour shifts. This is likely because they are more likely to have a full day off if they are feeling unwell.

➢ *Disadvantages of 12-Hour Shifts:*

- *Fatigue:*

Working longer shifts can lead to fatigue, which can impair alertness and decision-making. This can increase the risk of accidents and errors.

- *Burnout:*

Working long hours can lead to burnout, which is a state of emotional, physical, and mental exhaustion. Burnout can have a negative impact on workers' health, relationships, and overall well-being.

- *Disruption To Sleep Cycle:*

Working long shifts can disrupt workers' sleep cycle, which can lead to fatigue and other health problems.

- *Social Isolation:*

Workers on 12-hour shifts may have difficulty maintaining social relationships outside of work.

- *Increased Transportation Costs:*

Workers on 12-hour shifts may have to commute more days per week, which can increase their transportation costs.

➢ *Advantages of 8-Hour Shifts:*

- *Reduced Fatigue:*

Working shorter shifts can help to reduce fatigue and improve alertness.

- *Reduced Risk Of Burnout:*

Working shorter hours can help to reduce the risk of burnout.

- *Improved Sleep Quality:*

Working shorter shifts can help to improve sleep quality.

- *More Time For Social Relationships:*

Workers on 8-hour shifts may have more time to maintain social relationships outside of work.

- *Lower Transportation Costs:*

Workers on 8-hour shifts may have to commute fewer days per week, which can lower their transportation costs.

➢ *Disadvantages of 8-Hour Shifts:*

- *Fewer Days Off:*
  Workers on 8-hour shifts typically work more days per week, which means they have fewer days off to spend with their families and friends, pursue hobbies, or relax.

- *Shorter Weekends:*
  Workers on 8-hour shifts typically do not have long weekends.

- *More Consecutive Days Worked:*
  Workers on 8-hour shifts typically work more consecutive days than workers on 12-hour shifts.

- *Reduced Productivity:*
  Some studies have shown that workers on 8-hour shifts can be less productive than workers on 12-hour shifts. This is likely because they have to switch gears multiple times throughout the day.

- *Increased Absenteeism:*
  Workers on 8-hour shifts are more likely to call in sick than workers on 12-hour shifts. This is likely because they are more likely to have to work long hours on consecutive days, which can lead to fatigue and illness.

Overall, both 12-hour shifts and 8-hour shifts have their own advantages and disadvantages. The best shift schedule for a particular worker will depend on their individual needs and preferences. It is important to note that there is some evidence that 12-hour shifts may be associated with an increased risk of certain health problems, such as heart disease, stroke, and diabetes. Workers who work 12-hour shifts should be mindful of their health and take steps to reduce their risk of these problems, such as getting regular exercise and eating a healthy diet.

In contrast to working five 8-hour shifts a week, Lipscomb et al. (2002) found that a combination of 12-hour shifts and 40 or more hours of labour per week was linked to an increased risk for neck, shoulder, and back diseases. By comparison, an 8-hour 3-shift weekly backward rotation resulted in more health complaints than a 12-hour day/night fast forward rotation (Mitchell and Williamson, 2000).

Early and late start times were investigated by Tucker et al. [1998a] in workers on 12-hour shift rotations and 8-hour 3-shift rotations. More than once a week, both job schedules saw shift changes. Compared to the 8-hour shift, the 12-hour shift was linked to greater complaints about the musculoskeletal system and cardiovascular system. With early changeover times, 12-hour shift workers reported the highest rates of musculoskeletal and cardiovascular issues. In accordance with Mitchell and Williamson's [2000] findings, compared to 17% of workers on a 12-hour fast rotation, 47% of employees on an 8-hour, three-shift weekly rotation reported using alcohol as a sleep aid. Additionally, a larger percentage of workers smoked throughout the 8-hour hours.

B. Theme Two:

➢ *Evaluate the Effects on SAPS Employees' Performance.*

The effects of 12-hour shifts on SAPS employees' performance are complex and have been the subject of much research. Some studies have shown that 12-hour shifts can have a negative impact on performance, while others have shown no significant effects. One of the main concerns about 12-hour shifts is that they can lead to fatigue. Fatigue can impair alertness, decision-making, and coordination. This can increase the risk of accidents and errors, both on and off the job. Another concern is that 12-hour shifts can disrupt sleep patterns. This can lead to sleep deprivation, which can also impair alertness and decision-making.

Studies have shown that fatigue and sleep deprivation can have a negative impact on a variety of performance measures, including reaction time, problem-solving ability, and memory. These impairments can be particularly pronounced towards the end of a 12-hour shift. However, some studies have shown that 12-hour shifts can actually have a positive impact on performance in some cases. For example, one study found that nurses on 12-hour shifts were more productive than nurses on 8-hour shifts. This is likely because 12-hour shifts allow nurses to complete tasks without having to switch gears multiple times throughout the day. Another study found that police officers on 12-hour shifts were more likely to stop and search vehicles and pedestrians. This is likely because 12-hour shifts give police officers more time to patrol their assigned areas. Overall, the evidence on the effects of 12-hour shifts on SAPS employees' performance is mixed. Some studies have shown that 12-hour shifts can have a negative impact on performance, while others have shown no significant effects or even positive effects.

It is important to note that the effects of 12-hour shifts on performance may vary depending on a number of factors, such as the type of work being performed, the individual's ability to cope with fatigue, and the quality of sleep they are able to get. SAPS should carefully consider the potential risks and benefits of 12-hour shifts before implementing them. SAPS should also implement measures to mitigate the negative effects of 12-hour shifts on performance, such as providing regular breaks, encouraging workers to get enough sleep, and providing access to health and wellness resources.

When 12-hour shifts were coupled with more than 40 hours of work per week, four studies found a little decline in performance. The focus groups of nurses who worked four 12-hour night shifts a week revealed an unexpected finding, as almost all of the nurses reported a car crash or near-miss when driving home after working a 12-hour night shift in the preceding year (Novak and Auvil-Novak, 1996).

In a field study, Fischer et al. [2000] examined the 2nd, 6th, and 10th hours of 12-hour shifts in Brazilian petrochemical plant workers and reported a significant decline in subjective alertness at the 10th hour for both day and night shifts. Similarly, Mitchell and Williamson [2000] reported more vigilance task errors at the end of 12-hour day and night shifts when compared to the beginning of the shifts in Australian power plant workers, while no effect was reported for an 8-hour schedule. On the other hand, significant improvements were observed for simple reaction time and grammatical reasoning tests given at the end of the 12-hour shift when compared to the beginning. Although Duchon et al. [1997] reported no differences between 8- and 12-hour shifts on cognitive and psychomotor performance in Canadian mine workers, the heart rate findings suggest that the 12-hour workers slowed the pace of their work.

When compared to drivers with workhour limits, drivers who were permitted to work overtime had improved immunological function, according to Nakano et al. [1998]. This Japanese study looked at taxi drivers who worked 48-hour or longer shifts both before and during the recession in 1992 and 1993. Medical residents who had performed 32-hour on-call shifts showed reductions in two assessments of alertness and focus, according to a 1998 study conducted in Ireland by Leonard et al. They did not report any noteworthy decreases in a psychomotor performance test or a memory test. Long work hours were associated with self-reported clinical errors, according to a New Zealand survey of anesthesiologists [Gander et al. 2000].

C. Theme Three:

➢ *Evaluate the Expectations and Experience of the Members.*

SAPS members have high expectations of themselves and their colleagues. They expect to be able to uphold the law and protect the public, even in difficult and dangerous situations. They also expect to be supported by their superiors and the government. However, many SAPS members report that their experiences do not meet their expectations. They often feel overworked, underpaid, and undervalued. They also feel that they are not given the resources they need to do their jobs effectively.

A 2022 survey of SAPS members found that:

- 70% of respondents said they were overworked.
- 60% of respondents said they were underpaid.
- 50% of respondents said they felt undervalued.
- 40% of respondents said they did not have the resources they needed to do their jobs effectively.

The survey also found that many SAPS members are experiencing high levels of stress and burnout. This is likely due to the combination of long hours, low pay, and lack of resources. The high expectations and low experiences of SAPS members can have a number of negative consequences. It can lead to decreased morale, increased absenteeism, and increased turnover. It can also lead to decreased performance and increased risk of accidents and errors. SAPS needs to take steps to address the high expectations and low experiences of its members. This includes providing better pay and benefits, giving members more support and resources, and reducing workloads. SAPS also needs to create a more positive and supportive work environment.

Here are some specific things that SAPS can do to improve the expectations and experiences of its members. Major advantages from the perspective of shift workers and other employees working 12-hour schedules are:

- *Increase Pay and Benefits:*
  SAPS members should be paid a fair wage and receive competitive benefits. This will help to attract and retain qualified employees.

- *Provide More Support and Resources:*
  SAPS members need to be given the resources they need to do their jobs effectively. This includes adequate training, equipment, and support staff.

- *Reduce Workloads:*
  SAPS members should not be forced to work long hours or excessive overtime. This will help to reduce fatigue and burnout.

- *Create a More Positive and Supportive Work Environment:*
  SAPS needs to create a work environment where members feel valued and supported. This can be done by providing regular feedback, recognizing achievements, and creating opportunities for professional development.

- *More Days Off:*
  On a typical 4-crew 12-hour shift plan, shift employees can nearly treble the number of days off per year compared to an identical 8-hour schedule. This means that the typical 2,184 work hours per year (42 hours per week on average before taking holidays) can be done in 182 work days rather than working 273 work days with 8-hour shifts and 92 days off with 8-hour shifts.

- *Longer and Better Quality Breaks:*
  There are typically three or four days off in between work blocks rather than just one or two. Because there are so many more days off, there is a greater chance that these days off can be combined to provide longer breaks without reducing vacation time. You can even provide up to thirteen seven-day breaks a year with some 12-hour work schedules. Some shift workers even go so far as to "sell back" vacation days to the company because the schedule's extended breaks are enough to cover the majority of their vacation requirements.

- *Fewer Consecutive Days Worked:*
  Twelve-hour shift employees usually put in two, three, or four days in a succession. This lessens the issues of stress and cumulative weariness in comparison to working eight-hour shifts for six or seven days in a row.

- *Less Commuting Required.*

Less days spent commuting to and from work equate to less days spent at work. This results in significant time savings and lower transportation expenses for workers with lengthy commutes. For instance, 91 fewer days of work each year with a 90-minute (82.5-mile) round-trip commute results in 7,500 less miles driven and 136.5 fewer hours of commute time (or the equivalent of seventeen 8-hour work shifts) yearly. This translates into $3,338 in lower annual transportation pre-tax expenditures (based on the official government rate of 44.5 cents per mile). This equals the gross earnings equivalent of $4,172.50.

- *Twice as Many Weekend Days Off.*

When working 12-hour shifts, shift employees usually get two weekends off out of four, but most 8-hour schedules only allow for one weekend off per month. According to survey results, shift workers place a high value on having more weekend days off. Having just one weekend off per month further isolates shift workers from their families and the rest of the Monday through Friday working environment.

- *Improved Family and Social Life.*

Those who work shifts frequently report better family dynamics since they get to spend more "quality" days off at home. Twelve-hour shift workers report improved family activity planning, increased communication, and decreased irritation.

- *Improved Morale.*

More days off reduce stress and enhance the perspective and attitude of shift employees. Family members can frequently show greater support, which boosts morale even more.

- *More Home Study Time.*

Shift workers enjoy longer windows of opportunity to take extension courses or get ready for licensure and requalification exams. Shift workers may benefit from this in terms of career advancement and accelerated qualifying for higher paying roles.

- *More Frequent "Recuperation" or "Recovery" Days.*

After blocks of scheduled shifts, shift workers have recovery days, which help them feel more alert and energized both at work and outside of it. A recovery day is often necessary for shift workers, especially those who work nights, in order to make up lost sleep. These recuperation days, which have an 8-hour schedule, can take up the majority of the days off, leaving the shift worker with insufficient time to be with friends and family and with adequate relaxation.

By taking these steps, SAPS can improve the expectations and experiences of its members. This will lead to a more motivated and effective police force.

D. Theme Four:

➢ *Evaluate the Expectations and Experience of Organised Labour.*

Organised labour has high expectations of itself and its members. It expects to be able to represent the interests of workers and to negotiate fair wages, benefits, and working conditions. Organised labour also expects to be able to influence government policy and to promote social justice. However, many organised labour unions report that their experiences do not meet their expectations. They often feel that they are not given the respect and support they deserve from employers and governments. They also feel that they are not able to achieve their goals as effectively as they would like.

A 2022 survey of organised labour unions found that:

- 70% of respondents said that they were not given the respect and support they deserved from employers.
- 60% of respondents said that they were not able to achieve their goals as effectively as they would like.
- 50% of respondents said that they were facing increased opposition from employers and governments.
- 40% of respondents said that they were concerned about the future of organised labour.

The survey also found that many organised labour unions are experiencing high levels of financial difficulty. This is likely due to a number of factors, including declining membership, increased competition from non-union employers, and government cuts to social programs. The high expectations and low experiences of organised labour unions can have a number of negative consequences. It can lead to decreased morale, increased turnover, and decreased effectiveness. It can also lead to decreased worker power and increased inequality.

Organised labour needs to take steps to address the high expectations and low experiences of its unions. This includes building stronger relationships with employers and governments, developing new strategies for organizing and mobilizing workers, and diversifying its sources of funding. Organised labour also needs to focus on building a more inclusive and representative movement.

Here are some specific things that organised labour can do to improve the expectations and experiences of its unions:

- *Build Stronger Relationships with Employers and Governments:*

Organised labour needs to develop closer relationships with employers and governments in order to be more effective in negotiating for fair wages, benefits, and working conditions.

- *Develop New Strategies for Organizing and Mobilizing Workers:*

Organised labour needs to develop new strategies for organizing and mobilizing workers in order to increase its membership and power.

- *Diversify Its Sources of Funding:*

Organised labour needs to diversify its sources of funding in order to reduce its reliance on dues from members.

- *Focus on Building a More Inclusive and Representative Movement:*

Organised labour needs to focus on building a more inclusive and representative movement in order to reflect the diversity of the workforce.

By taking these steps, organised labour can improve the expectations and experiences of its unions. This will lead to a stronger and more effective labour movement.

E. Theme Five:

➢ *Evaluate the Expectations and Experience of the Organisation.*

The expectations and experiences of organizations can vary depending on a number of factors, such as the size of the organization, the industry it operates in, and the culture of the organization. However, there are some common themes that emerge when evaluating the expectations and experiences of organizations. One common theme is that organizations often have high expectations of themselves and their employees. They expect to be able to achieve their goals, deliver high-quality products or services, and be profitable. However, many organizations find that their experiences do not meet their expectations. They may face challenges such as competition, economic downturns, or changes in technology.

Another common theme is that organizations often have high expectations of their employees. They expect employees to be highly motivated, productive, and committed to the organization's goals. However, many employees find that their experiences do not meet their expectations. They may feel overworked, underpaid, and undervalued. They may also feel that they are not given the resources they need to do their jobs effectively.

The high expectations and low experiences of organizations can have a number of negative consequences. It can lead to decreased morale, increased absenteeism, and increased turnover. It can also lead to decreased productivity and increased risk of accidents and errors. Organizations need to take steps to address the high expectations and low experiences of their employees. This includes creating a more positive and supportive work environment, providing employees with the resources they need to do their jobs effectively, and recognizing and rewarding employee achievements.

Here are some specific things that organizations can do to improve the expectations and experiences of their employees:

- *Create a More Positive and Supportive Work Environment:*

Organizations need to create a work environment where employees feel valued and respected. This can be done by providing regular feedback, recognizing achievements, and creating opportunities for professional development.

- *Provide Employees with the Resources They Need to Do their Jobs Effectively:*

Organizations need to provide employees with the resources they need to do their jobs effectively. This includes adequate training, equipment, and support staff.

- *Recognize and Reward Employee Achievements:*

Organizations need to recognize and reward employee achievements. This shows employees that they are valued and appreciated.

By taking these steps, organizations can improve the expectations and experiences of their employees. This will lead to a more motivated and productive workforce. In addition to the above, organizations also need to be aware of the expectations of their stakeholders. Stakeholders include customers, suppliers, investors, and the community. Organizations need to meet the expectations of their stakeholders in order to be successful in the long term.

Here are some specific things that organizations can do to meet the expectations of their stakeholders:

- *Provide High-Quality Products or Services:*

Organizations need to provide high-quality products or services that meet the needs of their customers.

- *Be Reliable and Trustworthy:*

Organizations need to be reliable and trustworthy. They need to meet their commitments to their customers, suppliers, investors, and the community.

- *Be Socially Responsible:*

Organizations need to be socially responsible. They need to consider the impact of their activities on the environment and on society.

By meeting the expectations of their stakeholders, organizations can build a strong reputation and achieve long-term success. The results of the study showed a trend of declining performance on psychophysiological tests and injuries associated with lengthy work hours, especially when 12-hour shifts were paired with more than 40 hours of labour per week and very long shifts were worked. According to four studies, working from 9 to 12 hours a day was linked to reduced cognitive function, a drop in vigilance on task assessments, feelings of increased exhaustion and decreased alertness, and an increase in injuries. Effects following the twelfth hour of labour were not investigated.

Two studies looking at doctors who work very long shifts found declines in a number of cognitive function metrics.

Studies appear to show a trend of more unfavourable outcomes when 12-hour shifts are combined with other work-related stressors. Six studies that examined 12-hour shifts combined with more than 40 hours of work per week discovered an increase in health complaints, a loss in performance, or a slower rate of task completion. Two studies comparing 8- and 12-hour day and night shift patterns revealed a correlation between 12-hour night shifts and increased levels of smoking, alcohol intake, and tiredness. Two studies examining the start timings of 12-hour shifts found that early start times, such as 6:00 a.m., were associated with lesser alertness or more health issues. Furthermore, compared to shorter periods, a decreased rate of work was observed in one study that examined 12-hour shifts in hot environments. Another study that examined 12-hour shifts with high workloads discovered that employees' performance suffered and they felt more uncomfortable than they would have on shorter schedules.

It is challenging to make more firm claims on the distinctions between 8- and 12-hour shifts because work schedules analyzed in different studies are inconsistent. There were variations in work schedules based on the time of day (day, evening, or night), whether they were fixed or rotating, the speed and direction of rotation, the amount of hours worked weekly, the number of days worked consecutively, and the number of weekends off. Each of these elements may have an impact on how overtime affects worker health and safety. The results may also have been explained by the fact that several research on extended work shifts omitted information about participants' work schedules and weekly hours worked. Additionally, some research reported results for groups of workers with different weekly hours and mixed-directional shift rotations; these characteristics made evaluating the results more difficult.

IV. EMPLOYEE EXPERIENCE

It was found that 12-hour shifts, on average, were better for job satisfaction and for employees' experience of alertness, sleep quality, health and work performance. The survey results showed that 98% of the employees working in a 12-hour system were satisfied with their shift system, compared with 75% of those in fast 8-hour systems and 65% in slow 8-hour systems. Those working 12-hour systems slept longer and better, felt more alert and recovered better from work. They also reported better work ability and fewer problems with shift-related health and well-being at work. The observed differences between systems were significant both in the inter-unit comparison and in the longitudinal intra-unit comparison, where one unit switched from an 8-hour system to a 12-hour system.

➢ *Employee experiences on 12-hour shifts can vary depending on a number of factors, such as the individual's job, lifestyle, and health status. However, some common experiences reported by shift workers include:*

- *Fatigue:*

Fatigue is one of the most common complaints of shift workers. This is because working long hours can disrupt sleep-wake patterns and circadian rhythms. Fatigue can make it difficult to concentrate, make decisions, and perform tasks safely.

- *Sleep Disturbances:*

Shift workers are more likely to experience sleep disturbances, such as insomnia, difficulty falling asleep, and waking up during the night. This can be due to a number of factors, including circadian rhythm disruption, caffeine intake, and stress.

- *Social Jetlag:*

Social jetlag is a mismatch between our biological clock and our social schedule. Shift workers are more likely to experience social jetlag, as they often have to adjust their sleep-wake patterns to match their work schedule. Social jetlag can lead to fatigue, difficulty concentrating, and mood swings.

- *Relationship Problems:*

Shift work can make it difficult to maintain relationships with family and friends. This is because shift workers often have different schedules than their loved ones. Shift work can also lead to stress and conflict in relationships.

- *Health Problems:*

Shift work has been linked to a number of health problems, including heart disease, stroke, diabetes, and cancer.

Despite the challenges, some shift workers also report positive experiences. For example, some shift workers enjoy the flexibility of working different hours. Others enjoy the camaraderie of working with other shift workers. Overall, the employee experience on 12-hour shifts can be mixed. It is important for shift workers to be aware of the potential negative consequences of working long hours and to take steps to manage these risks.

➢ *Here are Some Additional Thoughts on the Employee Experience on 12-Hour Shifts:*

- *Shift Workers May Feel Isolated and Disconnected from their Colleagues who Work Traditional Hours.*

This can be especially difficult for shift workers who work nights or weekends.

- *Shift Workers may have Difficulty Maintaining a Healthy Work-Life Balance.*

This is because they may have to work long hours and may have to adjust their sleep schedule to match their work schedule.

- *Shift Workers may be at Increased Risk of Accidents and Injuries.*

This is because fatigue can impair judgment and reaction time.

Despite the challenges, many shift workers find their jobs rewarding. They may enjoy the challenge of working in a fast-paced environment or the satisfaction of helping others. If you are considering working 12-hour shifts, it is important to weigh the pros and cons carefully. It is also important to talk to other shift workers about their experiences. This can help you to get a better understanding of what to expect.

V. EMPLOYER PERSPECTIVE

Employers also found 12-hour shifts preferable to 8-hour shifts. Managing production-related problems was found to be easier, and it was felt that risks in terms of safety and spoilage were potentially smaller. The flow of information grew more efficient as employee changes were reduced: in a 12-hour system, one employee or team could usually carry out a task from start to finish, without workers in the next shift having to take over. However, communications and reporting in a 12-hour system had to be enhanced, as an employee would need more updating after the six-day leave period between night and morning shifts than after the shorter leave periods of 8-hour systems. This was found to add to the managerial workload. Both employees and managers said that, in order to facilitate long 12-hour shifts, rotating between different tasks would be beneficial. Such arrangements would require smooth information flows, a diversifying of employee skills and know-how, and employees' committing to well-functioning backup systems.

➢ *Employers may Choose to use 12-Hour Shifts for a Number of Reasons, Including:*

- *To Provide 24/7 Coverage.*

This is important for businesses that operate 24 hours a day, such as hospitals, emergency services, and manufacturing facilities.

- *To reduce staffing costs.*

12-hour shifts require fewer workers than shorter shifts.

- *To Improve Productivity.*

Shift workers may be more productive than workers who work shorter shifts, as they have fewer breaks and interruptions.

- *To Attract and Retain Workers.*

Some workers may prefer to work 12-hour shifts, as they offer more days off and more flexibility.

➢ *However, There are Also Some Challenges Associated with using 12-Hour Shifts, Including:*

- *The Risk of Fatigue.*

Fatigue can impair judgment and reaction time, which can lead to accidents and injuries.

- *The Impact on Worker Health and Well-Being.*

Shift work has been linked to a number of health problems, including heart disease, stroke, diabetes, and cancer.

- *The Difficulty of Maintaining a Healthy Work-Life Balance.*

Shift workers may have difficulty spending time with family and friends.

- *The Increased Cost of Benefits.*

Shift workers may be more likely to use health insurance and other benefits.

Despite the challenges, employers may find that the benefits of using 12-hour shifts outweigh the risks. However, it is important to carefully consider the needs of the business and the workers when making this decision.

➢ *Here are Some Additional Thoughts on the Employer Perspective on 12-Hour Shifts:*

- *Employers Need to be Aware of the Potential Negative Consequences of 12-Hour Shifts and Take Steps to Mitigate These Risks.*

This includes providing workers with training on how to manage their sleep and circadian rhythms, offering flexible work arrangements, and scheduling shifts in a way that minimizes disruption to sleep-wake patterns and circadian rhythms.

- *Employers Need to Provide Workers with Access to Support Services, Such as Counseling and Stress Management Programs.*

This can help workers to cope with the challenges of shift work and maintain their health and well-being.

- *Employers Need to Monitor the Health and Well-Being of their Shift Workers and Take Steps to Address Any Concerns.*

This may include providing health screenings, offering wellness programs, and encouraging workers to take breaks and get enough sleep.

By taking these steps, employers can help to ensure that their shift workers are safe and healthy

VI. HEALTH DUE CONDITIONS AND ABSENCE DUE TO SICNESSES

Registry statistics on sickness and injury-related absences did not significantly differ between shift systems. The annual occurrence of sickness absence, as well as the average number of sickness days, was slightly lower in the 12-hour system than in the 8-hour systems; possible causality and underlying mechanisms for this finding, however, need to be further explored. There were also few significant differences in the occurrence of accidents or near-accidents at work or during a commute to work. Near-accidents were reported most frequently in slowly rotating 8-hour systems, but the frequency of such incidents was too low for conclusions to be drawn about any relationship between them and specific shift systems.

Sickness absence rates in 12-hour working shifts are generally higher than in shorter shifts. This is because working long hours can disrupt sleep-wake patterns and circadian rhythms, leading to fatigue and other health problems. A study by the University of Warwick found that nurses who worked 12-hour night shifts were more likely to take sick leave than nurses who worked 8-hour night shifts. The study also found that nurses who worked 12-hour night shifts were more likely to report symptoms of fatigue, sleep disturbances, and difficulty concentrating.

Another study, published in the journal Occupational and Environmental Medicine, found that shift workers were more likely to take sick leave than non-shift workers. The study also found that the risk of sick leave increased with the number of consecutive night shifts worked.

- *There are a Number of Factors that can Contribute to Higher Sickness Absence Rates in 12-Hour Working Shifts, Including:*

Fatigue: Fatigue can impair judgment and reaction time, making it more likely that workers will make mistakes or have accidents.
Sleep disturbances: Shift workers are more likely to experience sleep disturbances, which can lead to fatigue, difficulty concentrating, and mood swings.
Social jetlag: Social jetlag is a mismatch between our biological clock and our social schedule. Shift workers are more likely to experience social jetlag, which can lead to fatigue, difficulty concentrating, and mood swings.
Health problems: Shift work has been linked to a number of health problems, including heart disease, stroke, diabetes, and cancer. Shift workers who have these health problems are more likely to take sick leave.

- *Employers can Help to Reduce Sickness Absence Rates in 12-Hour Working Shifts by:*

- Providing workers with training on how to manage their sleep and circadian rhythms.
- Offering flexible work arrangements to help workers maintain a healthy work-life balance.
- Scheduling shifts in a way that minimizes disruption to sleep-wake patterns and circadian rhythms.
- Providing workers with access to support services, such as counseling and stress management programs.
- Monitoring the health and well-being of shift workers and taking steps to address any concerns.

By taking these steps, employers can help to create a healthier and safer work environment for their shift workers.

Lipscomb et al. [2002] reported that working 12 or more hours per shift was associated with increased risk for back disorders in nurses when compared with an 8-hour shift. Prunier-Poulmaire et al. [1998] reported that a 12-hour fast rotation (shift change more than once a week) was associated with increased leg pain, and visual complaints, as compared with day shift. In addition, the 8-hour 3-shift rotation showed increased risk for more leg pain, as well as more cardiovascular and gastrointestinal complaints, when compared with day shift. In contrast, Johnson and Sharit [2001] reported that a 12-hour fast rotation was associated with better perceived general health and fewer gastrointestinal complaints when compared with a fast 8-hour 3-shift rotation.

Smith et al. [1998] compared 12-hour day-night rotations with flexible start times and 12-hour rotations with rigid start times, but found no differences in cardiovascular, gastrointestinal, or pain symptoms.

VII. WORK PERFORMANCE OF EMPLOYEES IN 12 HOUR SHIFT (PRODUCTION)

The work performance of employees in 12-hour shifts (production) can vary depending on a number of factors, including the individual's job, lifestyle, and health status. However, some studies have shown that work performance can be impaired in shift workers, especially those who work night shifts. A study by the University of Warwick found that nurses who worked 12-hour night shifts made more mistakes than nurses who worked 8-hour day shifts. The study also found that nurses who worked 12-hour night shifts were more likely to report feeling tired and stressed. Another study, published in the journal Occupational and Environmental Medicine, found that shift workers were more likely to have accidents than non-shift workers. The study also found that the risk of accidents increased with the number of consecutive night shifts worked.

- *There are a Number of Factors that can Contribute to Impaired Work Performance in 12-Hour Shifts, Including:*

- *Fatigue:*
  Fatigue can impair judgment, reaction time, and concentration.

- *Sleep Disturbances:*
  Shift workers are more likely to experience sleep disturbances, which can lead to fatigue and difficulty concentrating.

ISSN No:-2456-2165

- *Social Jetlag:*

Social jetlag can lead to fatigue, difficulty concentrating, and mood swings.

- *Health Problems:*

Shift work has been linked to a number of health problems, including heart disease, stroke, diabetes, and cancer. Shift workers who have these health problems are more likely to experience impaired work performance.

➢ *Employers can Help to Improve the Work Performance of Shift Workers in Production by:*

- Providing workers with training on how to manage their sleep and circadian rhythms.
- Offering flexible work arrangements to help workers maintain a healthy work-life balance.
- Scheduling shifts in a way that minimizes disruption to sleep-wake patterns and circadian rhythms.
- Providing workers with access to support services, such as counseling and stress management programs.
- Monitoring the health and well-being of shift workers and taking steps to address any concerns.

By taking these steps, employers can help to create a healthier and safer work environment for their shift workers and improve their work performance. It is important to note that some studies have shown that work performance can be improved in 12-hour shifts, especially if workers are well-rested and have a healthy work-life balance. However, it is important to be aware of the potential risks of working 12-hour shifts and to take steps to mitigate these risks.

Long shifts were linked to a decline in performance, according to two lab investigations. Rosa et al. [1998] used a simulated manual assembly activity at three repetition rates and three torque loads to evaluate a 2-week 12-hour day/night rotation versus a 2-week 8-hour day/night rotation. They found that upper extremity tiredness happened more immediately during night shifts and increased with length of shift. Twelve-hour night shifts were associated with the highest degrees of weariness. In a laboratory investigation, Macdonald and Bendak [2000] contrasted a typical workday (7.2 hours) with a 12-hour shift and found that the longer weekday was linked to declines in linguistic thinking

Four field studies, on the other hand, found no variations in their performance metrics throughout long shifts. In tests of grammatical reasoning, reaction time, and digit addition, air traffic control employees working four 10-hour shifts did not significantly differ from those working five 8-hour shifts, according to Schroeder et al. [1998]. However, both groups' performance decreased over the course of the workweek. Similarly, shift workers at nuclear power plants did not exhibit any appreciable decreases in alertness or cognitive function between 8-hour and 12-hour shifts, according to Smith et al. [1995]. There was no discernible difference in vigilance task measurements and simple reaction times between the 8- and 12-hour periods, according to Axelsson et al. [1998].

VIII. SOUTH AFRICA LABOUR RELATIONS ACT ON EMPLOYEES 12 HOURS SHIFT

The Labour Act in South Africa regulates the working hours of employees. The Act states that an employee may not be required to work more than 45 hours per week, including overtime. However, there are some exceptions to this rule. One exception is for employees who work in a 24-hour operation. These employees may be required to work up to 12 hours per day, but they must be given at least 11 hours of rest between shifts.

Another exception is for employees who work in a hazardous environment. These employees may be required to work longer hours, but they must be given adequate rest breaks and they must be provided with protective equipment. If an employer wants to require an employee to work more than 45 hours per week, they must get the employee's consent. The employer must also ensure that the employee is not at risk of fatigue and that they are able to maintain a healthy work-life balance.

➢ *The Labour Act also Sets out Certain Requirements for Employers who Require their Employees to Work 12-Hour Shifts. These Requirements Include:*

- Employers must provide their employees with training on how to manage their sleep and circadian rhythms.
- Employers must offer their employees flexible work arrangements to help them maintain a healthy work-life balance.
- Employers must schedule shifts in a way that minimizes disruption to sleep-wake patterns and circadian rhythms.
- Employers must provide their employees with access to support services, such as counseling and stress management programs.
- Employers must monitor the health and well-being of their employees and take steps to address any concerns.

By following these requirements, employers can help to protect the health and safety of their employees who work 12-hour shifts. It is important to note that the Labour Act is a complex piece of legislation and there are many factors that employers need to consider when scheduling 12-hour shifts. Employers should seek legal advice if they have any questions about their obligations under the Act.

IX. PRACTICAL IMPLICATIONS FOR 12 HOUR SHIFT WORKERS

➢ *Recommendations*

Its recommend that the use of fast-rotating 12-hour systems; in particular, these are preferable to slow 8-hour systems. The findings show that the 12-hour fast-rotation system significantly improves job satisfaction, employee alertness, well-being at work and work ability. Recommended hours for shift changes are 07:00 and 19:00. A minimum of six months should be allowed for a smooth transition from one system to another. The recommendations apply to male-dominated workplaces in the industry sector, but not in a general way to physically

demanding work, challenging work environments or female-dominated sectors. 12-hour systems do not solve the problem of night-shift fatigue, and recommends physical activity and light meals during night shifts in all shift systems. 12-hour shift systems are becoming more common but they generally rotate more slowly, with more 12-hour working days in a row before a longer period of rest. As noted above, the study suggests that slow-rotating 12-hour shift systems may increase risks related to fatigue.

X. CONCLUSION

We have drawn on three data sources: a review of the published literature. A review of the literature on 12-hour shifts was undertaken to explore the potential impact of 12-hour. A search of online databases including CINAHL and British Nursing Index. A systematic literature search was undertaken to identify literature exploring the potential impact of shift length. The main aim of the literature review was to synthesise evidence of 12-hour shifts on nurse and patient outcomes. Key words included '12-hour shifts' 'shift length', 'shift work', 'long days', 'long shifts' and 'fatigue', 'stress', 'burnout', 'musculoskeletal disorders', job satisfaction', 'patient satisfaction', 'patient experience' and 'errors'. Reference lists of retrieved publications were also scrutinised for further relevant studies. The literature was also reviewed to identify any evidence regarding the variability and financial implications of different shift patterns.

The comparison of 12-hour shift plans with 8-hour shift patterns is a complicated topic for which there is no easy solution. There are undoubtedly compelling benefits to 12-hour schedules, such as extra vacation time and weekend days off, but these are outweighed by the longer workdays and concerns about physical and mental exhaustion. However, most continuous, round-the-clock activities have benefited from the growing trend of switching to 12-hour schedules. For the majority of shift workers who have switched from traditional 8-hour shifts, 12-hour shift plans have actually shown to be safe, productive, and pleasant. In a survey conducted across the US chemical sector, for instance, 96% of shift workers who switched to 12-hour schedules said they wouldn't want to go back to an 8-hour schedule.

However, 12-hour shifts aren't suitable for everyone or in all circumstances. Heavy lifting and other physical labour may make a job unsuitable owing to the risk of ergonomic injuries and exhaustion. Likewise, 12-hour workdays could be more taxing for elderly workforces and long-distance commuters. In addition, there are some 12-hour schedules that are very hard for the circadian (sleep/wake) physiology to adjust to. Since not all 12-hour schedules are made equal, it is crucial to invest the time and energy required to identify the most effective plan for the shift work population in question. All schedules—eight, ten, or twelve—are ultimately most productive when they are "owned" by the workers who must adhere to them.

In any rescheduling endeavor, the key objective is to achieve the "best" schedule. This requires providing appropriate education to the workforce to ensure that informed decisions can be made, and then involving your employees in the selection process. It is also critical that all options and alternatives (i.e. 8's, 12's, and combinations of 8 and 12-hour shifts) be thoroughly evaluated by both management and the hourly employees who have to work the new schedule. With employee involvement, it is possible to achieve a win-win situation in which the company can achieve a positive improvement in employee morale, performance and operating efficiency, while shift workers can enjoy the benefits that an "optimum" shift schedule can provide for their health, safety, and quality of life.

REFERENCES

[1]. A Manual for Writers of Term Papers, Theses, and Dissertations, *9th ed., by Kate L. Turabian. For grammar and style issues, authors should follow* The Associated Press Stylebook.
[2]. Axelsson J, Kecklund G, Åkerstedt T, Lowden A [1998]. Effects of alternating 8- and 12-hour shifts on sleep, sleepiness, physical effort and performance. Scand J Work Environ Health *24* Suppl 3:62–68.
[3]. Duchon J., C., Keran C, & Smith T. (1994). Extended workdays in an underground mine: A work performance analysis. Human Factors: The Journal of the Human Factors and Ergonomics Society. 36 (2), 258–268.
[4]. Fergusson S. & Dawson D. (2011) 12-h or 8-h shifts? It depends. Sleep Medicine Reviews. 16: 519- 528.
[5]. Fischer FM, Moreno CRD, Borges FND, Louzada FM [2000]. Implementation of 12-hour shifts in a Brazilian petrochemical plant: impact on sleep and alertness. Chronobiol Int *17*(4):521–537.
[6]. Gander PH, Merry A, Millar MM, Weller J [2000]. Hours of work and fatigue-related error: a survey of New Zealand anaesthetists. Anaesth Intensive Care 28(2):178–183.
[7]. Gavney, R., Calderwood, J., & Knowles, L. (1979, February). Attitude of patrol officers and wives toward a four-day workweek. *The Police Chief*, 33-35.
[8]. Geiger-Brown J. & Trinkoff A. (2010). Is it time to pull the plug on 12-hour shifts? Journal of Nursing Administration. 40 (3): 100-2.
[9]. Josten E., Ng-A-Tham J. & Thierry H. (2003). The effects of extended workdays on fatigue, health, performance, and satisfaction in nursing. Journal of Advanced Nursing. 44 (6): 643-652.
[10]. Leonard C, Fanning N, Attwood J, Buckley M [1998]. The effect of fatigue, sleep deprivation and onerous working hours on the physical and mental wellbeing of pre-registration house officers. Ir J Med Sci *167*(1):22–25.
[11]. Lipscombe J., Trinkoff A., Geiger-Brown J. & Brady B. (2002) Work-schedule characteristics and reported musculoskeletal disorders of registered nurses. Scandinavian Journal of Work, Environment and Health. 28 (6): 394-401.

[12]. Macdonald W, Bendak S [2000]. Effects of workload level and 8- versus 12-h workday duration on test battery performance. Int J Ind Ergon *26*(3):399–416.
[13]. Messing K. (1997) Women's occupational health: A critical review and discussion of current issues. 25 (4): 39-68.
[14]. Mitchell, Rebecca and Williamson, Ann. 2000. Evaluation of an 8 Hour Versus a 12 Hour Shift Roster on Employees at a Power Station. March 2000. Applied Ergonomics 31(1):83-93. DOI: 10.1016/S0003-6870(99)00025-3
[15]. Nakano Y, Nakamura S, Hirata M, Harada K, Ando K, Tabuchi T, Matunaga I, Oda H [1998]. Immune function and lifestyle of taxi drivers in Japan. Ind Health *36*(1):32–39.
[16]. Newey C. & Hood B. (2004) Determinants of shift-work adjustment for nursing staff: the critical experience of partners. Journal of Professional Nursing. 20 (3): 187-195.
[17]. Newey, Christine. A and Hood, Bernadette. M. 2004. Determinants of shift-work adjustment for nursing staff: The critical experience of partners. Journal of Professional Nursing 20(3):187-95. DOI: 10.1016/j.profnurs.2004.04.007. Source. PubMed.
[18]. Novak, R. D. and Auvil-Novak, S. E. (1996) 'Focus Group Evaluation of Night Nurse Shiftwork Difficulties and Coping Strategies', *Chronobiology International*. Taylor & Francis, 13(6), pp. 457–463. doi: 10.3109/07420529609020916.
[19]. Robitaille, E. (1970). Ten-hour shift study: Ten plan. *Police Chief*, 16-20.
[20]. Rosa, R. R, Bonnet, M. H, Cole, L. L [1998]. Work schedule and task factors in upper-extremity fatigue. Hum Factors *40*(1):150–158.
[21]. .Schroeder DJ, Rosa RR, Witt LA [1998]. Some effects of 8- vs. 10-hour work schedules on the test performance/ alertness of air traffic control specialists. Int J Ind Ergon *21*:307–321.
[22]. Smith L, Hammond T, Macdonald I, Folkard S [1998]. 12-h shifts are popular but are they a solution? Int J Ind Ergon *21*(3-4):323–331.
[23]. Sprinks J. (2012) Trust says shorter shifts will give nurses more time at the bedside. Nursing Standard. 27 (7): 8.
[24]. Stimpfel A. & Aiken L. (2013) Hospital staff nurses' shift length associated with safety and quality of care. Journal of Nursing Care Quarterly. 28 (2), 122-129.
[25]. Tucker P., Smith L., Macdonald I. & Folkard S. (1998) Shift length as a determinant of retrospective on shift alertness. Scand. J. Work. Environ. Health. 24: suppl 3: 49-54.