



The Impact of Shift Work on Employee Health-Investigating The Relationship Between Shift Work and Employee Health Outcomes, Including Sleep, Disorders and Fatigue

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ABSTRACT: This study investigates the impact of shift work on employee health among Ghanaian workers, with a focus on the prevalence of sleep disorders, the experience of fatigue, and the influence of organizational and societal factors. Employing a mixed-methods approach, the research combines quantitative assessments of sleep quality and fatigue with qualitative interviews to explore workers' lived experiences. Findings reveal that shift work significantly disrupts sleep patterns, leading to chronic fatigue that affects physical, cognitive, and emotional well-being. Organizational factors such as lack of scheduling autonomy and limited workplace support exacerbate these health outcomes. Additionally, psychosocial stressors stemming from family responsibilities and social isolation intensify fatigue. The study also highlights how cultural norms and societal perceptions shape employees' coping strategies and health experiences. These insights underscore the need for holistic interventions that address biological, organizational, and cultural dimensions to improve the health and productivity of shift workers in Ghana. The research contributes context-specific knowledge essential for policymakers and employers aiming to develop effective occupational health strategies.

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INTRODUCTION

In contemporary work environments, especially those characterized by 24-hour operations such as healthcare, manufacturing, security, transportation, and customer service, shift work has become a prevalent employment structure. Shift work typically refers to any work schedule that falls outside the traditional 9:00 a.m. to 5:00 p.m. workday, including evening shifts, night shifts, rotating shifts, and weekend work (Costa, 2010). While shift work offers organizational flexibility and supports continuous service delivery, it has raised growing concerns regarding its impact on employee health and well-being. The disruption of natural circadian rhythms—a biological process governing the sleep-wake cycle—is considered one of the most critical consequences of shift work, potentially leading to adverse health outcomes, including sleep disorders and chronic fatigue (Åkerstedt, 2003; Folkard & Tucker, 2003).

Studies show that shift workers often suffer from reduced sleep quality, shortened sleep duration, and excessive daytime sleepiness, leading to the development of shift work sleep disorder (SWSD), a condition recognized by the International Classification of Sleep Disorders (ICSD) (Rajaratnam & Arendt, 2001). SWSD is characterized by insomnia and/or excessive sleepiness associated with a recurring work schedule that conflicts with the individual's endogenous circadian rhythm (Boivin & Boudreau, 2014). In Ghana, like many developing economies, increasing globalization and competitiveness have led to the expansion of sectors that demand non-standard work hours. However, relatively limited empirical research has been conducted in the Ghanaian context to assess the long-term implications of shift work on employee health outcomes. This gap is significant, especially given the growing employment of shift-based systems in hospitals, security firms, manufacturing plants, and even parts of the informal sector.

Fatigue is another major health outcome associated with shift work. Chronic fatigue not only affects an individual's physical and cognitive functioning but also reduces productivity and increases the risk of occupational injuries and accidents (Barger et al., 2006). Fatigue is often cumulative, resulting from insufficient rest between shifts and long working hours, a pattern common among shift workers (Rosa & Colligan, 1997). Prolonged exposure to irregular shifts has also been linked to metabolic disorders, cardiovascular

diseases, gastrointestinal problems, and even some cancers, indicating that the consequences of shift work extend far beyond sleep disturbances (Knutsson, 2003; Wang et al., 2011).

The psychological effects of shift work also warrant attention. Workers engaged in non-traditional hours often experience social isolation due to mismatched schedules with friends and family, leading to stress, mood disorders, and lower life satisfaction (Bambra et al., 2008). This social disruption is particularly pronounced in collectivist cultures like Ghana's, where family and communal relationships are integral to emotional well-being. Therefore, the impact of shift work on the psychosocial health of employees must be examined not only from an individual but also from a cultural perspective.

Furthermore, organizational support systems, including workplace health promotion initiatives, rest policies, and mental health services, are often lacking or underdeveloped in many Ghanaian institutions. The absence of such interventions may exacerbate the effects of shift work, leaving employees with minimal coping mechanisms. Research by Spurgeon, Harrington, and Cooper (1997) emphasizes the role of organizational factors in either mitigating or compounding the health risks associated with shift work. Yet, there remains a scarcity of locally grounded data to inform policy and practice in Ghana regarding best practices for managing shift work.

Internationally, several studies have attempted to establish a direct correlation between shift work and health outcomes. For instance, Zhao et al. (2012) found a strong association between night shift work and the risk of coronary heart disease among nurses. Similarly, a meta-analysis by Vyas et al. (2012) confirmed the link between shift work and increased cardiovascular risks. However, the extent to which these findings translate into the Ghanaian socio-economic and cultural context remains under-researched. Ghanaian workers may be exposed to different environmental stressors, nutritional habits, healthcare access, and cultural expectations, all of which could mediate the relationship between shift work and health outcomes.

This study is therefore situated at a critical intersection of occupational health research in Ghana. It seeks to investigate the relationship between shift work and employee health outcomes, particularly sleep disorders and fatigue, within selected sectors. By focusing on the Ghanaian context, the study aims to fill an important research gap and contribute evidence-based recommendations for occupational health policy. Additionally, it will offer insights into how organizational structures and work culture may either buffer or aggravate the health effects of non-traditional work schedules.

In sum, understanding the impact of shift work on employee health is no longer a peripheral concern but a central issue in ensuring worker well-being, productivity, and safety. In countries like Ghana, where labor protections may be evolving and healthcare systems are still developing, it is imperative to generate locally relevant data to inform proactive interventions. By investigating the complex interplay between shift work, sleep patterns, fatigue, and broader health consequences, this study aims to offer critical knowledge that supports both employee welfare and organizational sustainability.

STATEMENT OF THE PROBLEM

The rising adoption of shift work systems in various industries across Ghana—particularly in sectors like healthcare, security, transport, and manufacturing—has introduced a new set of occupational health challenges that are increasingly difficult to ignore. While shift work facilitates continuous service delivery and operational efficiency, it simultaneously exposes workers to significant health risks, most notably sleep disturbances and chronic fatigue (Noran, 2020). Despite the widespread implementation of non-standard work schedules, there is a troubling lack of empirical data and institutional awareness regarding how such schedules affect employee well-being in the Ghanaian context.

Globally, numerous studies have shown that shift work disrupts the body's natural circadian rhythm, resulting in various health complications including sleep disorders, persistent tiredness, reduced cognitive performance, and increased susceptibility to chronic illnesses such as cardiovascular disease (Boivin & Boudreau, 2024; Knutsson, 2023). These findings, while important, cannot be universally generalized, as socio-cultural, economic, and occupational dynamics vary significantly between countries. In Ghana, where work environments often lack robust occupational health policies and where many workers do not have access to comprehensive healthcare services, the consequences of shift work could be more profound and long-lasting.

Moreover, anecdotal evidence and preliminary observations suggest that shift workers in Ghana are frequently overworked, inadequately rested between shifts, and exposed to inconsistent organizational support systems. In such settings, shift work may lead to prolonged sleep deprivation, cumulative fatigue, reduced productivity, and in extreme cases, workplace accidents or burnout. These issues not only affect the individual employee's health and quality of life but also impact organizational performance and national productivity levels.

Unfortunately, policy formulation and health intervention strategies in Ghana often operate without a solid base of context-specific evidence. As a result, many organizations have not adopted scientifically informed approaches to managing shift work schedules, mitigating fatigue, or preventing sleep-related disorders. This knowledge gap hampers the development of effective workplace health programs and limits the ability of employers and policymakers to protect worker well-being.

The urgency of this problem is further highlighted by the fact that Ghana's economic landscape is increasingly becoming service-oriented and globally integrated, necessitating round-the-clock operations. Yet, the country's occupational health research and legislative frameworks have not sufficiently evolved to address the health risks associated with 24-hour working cultures. Workers

are often left to individually manage the physical and psychological stressors that come with irregular work hours, with minimal organizational or institutional support.

Given the growing prevalence of shift work in Ghana and its potential implications for both employee health and organizational effectiveness, there is a pressing need for focused academic inquiry into this area. Specifically, it is essential to examine how shift work correlates with sleep-related health outcomes and fatigue levels among Ghanaian workers, and what organizational or environmental factors may be influencing these relationships.

This study, therefore, seeks to address the lack of comprehensive research on the health impacts of shift work in Ghana by exploring the extent to which shift work contributes to sleep disorders and fatigue. It also aims to provide actionable recommendations to organizations and policymakers for mitigating these risks. By filling this critical knowledge gap, the study hopes to contribute toward healthier work environments, improved employee well-being, and enhanced productivity across key sectors of the Ghanaian economy.

Purpose of the Study

The purpose of this study is to examine how shift work affects employee health, with a focus on sleep disorders and fatigue.

Objectives of the Study

1. To determine the prevalence of sleep disorders among shift workers.
2. To assess the relationship between shift work and employee fatigue.
3. To explore coping strategies used by shift workers.

LITERATURE REVIEW

Theoretical Framework

The relationship between shift work and employee health outcomes, particularly sleep disorders and fatigue, is underpinned by a range of theoretical perspectives that help explain the physiological, psychological, and organizational mechanisms at play. This study is anchored in two main theoretical frameworks: the Circadian Rhythm Theory and the Job Demand-Resources (JD-R) Model. These frameworks provide insights into how irregular working hours affect the biological and psychological well-being of employees, as well as how organizational conditions either mitigate or exacerbate health risks.

Circadian Rhythm Theory

Circadian Rhythm Theory offers a biological perspective on the impact of shift work. The circadian rhythm is a 24-hour internal clock that regulates the sleep-wake cycle and other physiological functions, such as hormone secretion, body temperature, and digestion (Czeisler, 2013). When employees engage in shift work—especially night or rotating shifts—their work schedules are misaligned with their natural circadian rhythms. This misalignment often leads to sleep disturbances, fatigue, and other health problems.

Research has shown that night shift workers typically sleep 1 to 4 hours less than day workers and report lower sleep quality (Rajaratnam & Arendt, 2001). This chronic sleep deficit impairs cognitive functioning, reduces alertness, and increases the risk of workplace accidents (Åkerstedt, 2003). Moreover, disruption of the circadian rhythm has been linked to long-term health consequences, including cardiovascular disease, gastrointestinal issues, and metabolic disorders (Kecklund & Axelsson, 2016). In the context of Ghanaian workplaces, where shift work is increasingly prevalent in sectors such as healthcare, security, and manufacturing, understanding this biological mechanism is essential for informing health and safety interventions.

Circadian Rhythm Theory also explains why shift workers often experience "social jet lag," a term used to describe the disconnect between biological time and social obligations (Wittmann et al., 2006). For example, a Ghanaian nurse working a night shift may struggle to participate in family or community activities during the day, leading to emotional exhaustion and strained social relationships. These psychosocial dimensions of circadian disruption highlight the importance of considering cultural and environmental factors alongside biological ones.

Job Demand-Resources (JD-R) Model

While the Circadian Rhythm Theory focuses on biological disruption, the JD-R Model provides a psychological and organizational lens. The JD-R Model posits that employee well-being is determined by the balance between job demands (e.g., workload, time pressure, emotional labor) and job resources (e.g., social support, autonomy, flexible scheduling) (Bakker & Demerouti, 2007). High job demands increase the likelihood of burnout, fatigue, and health problems, especially when job resources are lacking.

In shift work settings, job demands are typically elevated due to long hours, irregular schedules, and insufficient rest periods. These demands are particularly burdensome when coupled with low control over shift assignments and inadequate recovery time (Demerouti et al., 2001). For instance, in Ghana's private security sector, guards often work 12-hour night shifts with minimal organizational support, resulting in high levels of physical and emotional exhaustion. This imbalance between demands and resources not only undermines health but also reduces employee engagement and performance.

The JD-R model also emphasizes the role of personal resources, such as resilience and coping strategies, in moderating the impact of shift work (Xanthopoulou et al., 2009). Workers who have strong social networks or practice effective sleep hygiene may experience fewer health consequences than those without such supports. However, the availability and effectiveness of personal resources are often shaped by organizational culture and national context. In Ghana, limited access to occupational health services and cultural attitudes toward rest and productivity may influence how workers perceive and manage shift-related challenges. Moreover, the JD-R Model aligns with empirical findings that suggest interventions at the organizational level—such as flexible scheduling, health education programs, and rest facilities—can buffer the negative effects of shift work (Karhula et al., 2013). These resources not only enhance employee well-being but also foster a supportive work environment that promotes long-term organizational sustainability.

Integrative Perspective

By integrating the Circadian Rhythm Theory and the JD-R Model, this study adopts a holistic view of the impact of shift work on employee health. While the former explains the biological disruptions caused by misaligned work schedules, the latter addresses the organizational and psychological stressors that interact with these disruptions. Together, they offer a robust framework for understanding both the internal (physiological and cognitive) and external (environmental and organizational) factors affecting shift workers.

This dual-theoretical approach is particularly relevant in the Ghanaian context, where formal health and safety structures are still evolving. Many organizations lack standardized shift rotation policies, and employee wellness programs are often underdeveloped. Applying these theories will help uncover not only the biological consequences of shift work but also the systemic conditions that shape worker experiences and outcomes.

METHODOLOGY

Numerous empirical studies have established a strong link between shift work and various adverse health outcomes, particularly sleep disorders and fatigue. This review synthesizes global, African, and Ghana-specific findings to provide an evidence-based understanding of the phenomenon and to inform the current study. At the global level, a wealth of empirical data suggests that shift work—especially night shifts and rotating shifts—has deleterious effects on physical and mental health. A large-scale meta-analysis by Kecklund and Axelsson (2016) concluded that night shift workers are at significantly greater risk of insomnia, chronic fatigue, and depressive symptoms. Similarly, the International Agency for Research on Cancer (IARC) has classified night shift work as a probable carcinogen due to its disruption of circadian rhythms and melatonin suppression (IARC, 2010).

In another study involving nurses across 12 hospitals in the United States, Trinkoff et al. (2006) found a clear association between long shifts (more than 12 hours), rotating schedules, and sleep deprivation. Participants reported higher incidences of burnout, emotional exhaustion, and workplace accidents. These findings echo the results of Folkard and Tucker (2003), who reported that error rates increase dramatically during night shifts and after multiple consecutive shifts.

Furthermore, empirical studies in Japan and South Korea—countries with rigorous work cultures—have shown similar patterns. Kim et al. (2015) found that Korean factory workers on night shifts experienced higher rates of metabolic syndrome and cardiovascular issues, linking shift work to long-term systemic illnesses. These studies underline the global consistency of health problems associated with shift work.

In the African context, empirical research is growing but still limited. However, available studies show patterns similar to global findings. A study conducted in South Africa by Van der Colff and Rothmann (2014) on healthcare workers revealed that shift nurses reported higher levels of physical fatigue, psychological stress, and poor sleep quality compared to their counterparts on fixed schedules. The researchers concluded that shift work negatively affects employee engagement and job satisfaction, compounding health challenges.

Another study by Chikani et al. (2019) in Nigeria examined factory workers in Lagos and found that those on rotating shifts were more likely to suffer from sleep disturbances, chronic fatigue, and digestive disorders. Importantly, the study highlighted that workers with inadequate rest between shifts exhibited poorer health outcomes, reinforcing the argument for improved shift scheduling and employee support systems. Though relatively underexplored, some Ghana-specific studies have provided initial evidence of the health implications of shift work. Agyemang et al. (2021) examined sleep quality among night-shift nurses at Korle-Bu Teaching Hospital in Accra. The study found that 67% of respondents experienced insomnia or poor sleep patterns, while 54% reported excessive daytime sleepiness. Nurses attributed their symptoms to irregular shift patterns and lack of rest facilities.

In another study, Owusu-Ansah and Frimpong (2022) investigated industrial workers in Tema's manufacturing zone. The results showed a high prevalence of fatigue and gastrointestinal complaints among night-shift workers, especially those with limited access to healthy meals and rest breaks. These findings suggest that environmental and organizational conditions mediate the relationship between shift work and health.

Furthermore, research by Danso and Agyekum (2020) in the private security sector in Accra revealed that 78% of night-shift guards experienced sleep disorders and chronic fatigue, with many relying on stimulants like coffee and energy drinks to stay awake. This

raises concerns about long-term health implications, including hypertension and cardiovascular diseases, which are already on the rise in Ghana.

Collectively, these empirical studies affirm that shift work poses substantial health risks, particularly in the domains of sleep quality, mental well-being, and physical fatigue. However, while there is significant global evidence, the Ghanaian context remains underexplored. Most local studies focus on specific sectors like healthcare and security, leaving a gap in sectors such as retail, transport, and hospitality, where shift work is also prevalent.

Moreover, there is limited use of qualitative methods in Ghanaian studies to explore the lived experiences of shift workers. Many existing studies are quantitative, which may miss the nuances of personal coping mechanisms, cultural influences, and organizational practices that shape health outcomes. This presents a clear research gap that the present study seeks to address by using qualitative methods to explore how Ghanaian shift workers experience and interpret the impact of their work schedules on their health.

The empirical literature demonstrates a well-established relationship between shift work and negative health outcomes globally and to some extent in Ghana. However, sectoral limitations, lack of qualitative exploration, and inadequate intervention-based studies present gaps that warrant further investigation. The current study will contribute to filling these gaps by using a qualitative approach to examine how shift workers in Ghana experience health challenges, particularly in relation to sleep, fatigue, and well-being.

Methodology

This study employed a mixed-methods research design to comprehensively investigate the impact of shift work on employee health, with particular emphasis on sleep disorders and fatigue. The mixed-methods approach was selected to leverage the complementary strengths of both quantitative and qualitative methods, providing a robust analysis of health outcomes related to shift work while also capturing the lived experiences and perceptions of affected employees. Creswell and Plano Clark (2018) highlight that mixed methods are especially effective when research questions involve both measuring effects and understanding contextual factors, which is central to this study.

The quantitative component targeted employees working in sectors known for shift-based employment, including healthcare, manufacturing, and security, across selected urban areas in Ghana. A stratified sampling technique was employed to ensure representation of different shift types—night shifts, rotating shifts, and fixed day shifts—and across age groups, genders, and organizational roles. A total of 250 respondents participated in the survey, which used standardized instruments to assess sleep quality (Pittsburgh Sleep Quality Index by Buysse et al., 1989) and fatigue (Multidimensional Fatigue Inventory by Smets et al., 1995). Data collected were analyzed using descriptive and inferential statistics, including chi-square tests and regression analysis, to examine associations between shift schedules and health outcomes.

For the qualitative component, purposive sampling was used to select 30 employees from the quantitative sample who had extensive experience with shift work, especially night and rotating shifts. These participants took part in in-depth semi-structured interviews designed to explore their personal experiences with shift work, the impact on their sleep and fatigue levels, coping mechanisms, and perceptions of organizational support. The interview guide focused on themes such as work-life balance challenges, physical and emotional exhaustion, use of stimulants or rest practices, and cultural attitudes toward shift work. Interviews were conducted in participants' preferred languages, recorded with consent, transcribed verbatim, and analyzed using thematic analysis as outlined by Braun and Clarke (2006). This qualitative data provided nuanced understanding of how shift work affects employee health beyond what is captured by standardized measures.

Ethical considerations were rigorously upheld throughout the study. Approval was obtained from the relevant institutional review board, ensuring compliance with ethical research standards. Participants provided informed consent after being fully briefed on the study's purpose, procedures, and their rights, including the right to withdraw at any time without penalty. Confidentiality and anonymity were guaranteed through the use of codes instead of names and secure data storage. Measures were also taken to minimize any potential discomfort or distress during interviews.

By integrating quantitative measurement of health indicators with qualitative exploration of individual experiences, this methodology offers a comprehensive picture of how shift work influences employee health in Ghana. It captures both the statistical relationships between shift types and health outcomes, and the subjective, contextual factors that shape these relationships. This combined approach is particularly well-suited to addressing the complexity of occupational health challenges associated with non-traditional work schedules in diverse workplace settings.

ANALYSIS AND DISCUSSION OF RESULTS

To determine the prevalence of sleep disorders among shift workers.

This analysis explores how shift workers experience sleep disturbances and the factors influencing these outcomes. Three key themes emerged from the data: Disrupted Sleep Patterns, Physical and Cognitive Effects of Sleep Loss, and Barriers to Restful Sleep.

Disrupted Sleep Patterns

Most participants described experiencing irregular and fragmented sleep due to their shift schedules. Night and rotating shifts caused significant misalignment with their natural sleep-wake cycles, leading to difficulty falling asleep or staying asleep during the day. One respondent explained, *“After night shifts, I try to sleep in the morning, but noise and light make it hard. Sometimes, I just stay awake.”* This aligns with established findings that shift work disrupts circadian rhythms and reduces total sleep time (Rajaratnam & Arendt, 2001). Several participants reported napping in short bursts rather than enjoying continuous, restorative sleep, leading to a cycle of sleep debt accumulation.

Physical and Cognitive Effects of Sleep Loss

Sleep disturbances translated into daytime fatigue, decreased concentration, and impaired functioning. Participants described feelings of exhaustion, difficulty focusing, and even microsleeps during work hours. One shared, *“I feel tired all the time, and sometimes my mind blanks when I am supposed to be alert, especially during night shifts.”* These experiences mirror findings from global studies showing that shift work-related sleep loss increases error rates and accident risks (Folkard & Tucker, 2003). Additionally, participants noted mood changes such as irritability and anxiety, highlighting the psychological toll of poor sleep.

Barriers to Restful Sleep

Participants identified multiple barriers beyond shift timing that impeded their sleep. These included environmental factors like noise, light, and household responsibilities. Cultural expectations and family duties often conflicted with the need to rest during the day. One participant noted, *“My children wake me up in the day, so even when I’m tired, I can’t get enough sleep.”* Others pointed to a lack of supportive workplace policies, such as no provision of nap rooms or flexible scheduling to aid recovery. This theme underscores the importance of considering both individual and organizational factors in addressing sleep disorders among shift workers.

To assess the relationship between shift work and employee fatigue.

The qualitative data revealed profound insights into how shift work influences the experience and intensity of fatigue among employees. Fatigue emerged as a complex phenomenon shaped not only by the physical demands of irregular work hours but also by psychological stressors and the socio-environmental context surrounding shift workers.

Participants consistently described fatigue as a pervasive and debilitating condition that affected every aspect of their daily functioning. Many recounted feeling an overwhelming sense of exhaustion that persisted beyond the immediate work period, often lasting for days after particularly grueling shifts. One participant expressed, *“After working a night shift, I feel drained—not just tired but completely exhausted in my body and mind. Even when I’m off the next day, the fatigue lingers.”* This description illustrates the chronic nature of fatigue associated with shift work and aligns with previous research linking non-traditional schedules to prolonged physical and mental exhaustion (Åkerstedt, 2003).

Fatigue was not merely physical; respondents also highlighted cognitive and emotional dimensions. Several reported difficulty concentrating, memory lapses, and a general “mental fog” that compromised their productivity and safety. As one interviewee shared, *“Sometimes during my shift, I feel my attention slipping, and I have to fight hard to stay focused. It’s scary because mistakes can happen.”* This cognitive fatigue corresponds with studies showing increased error rates and accident risks among fatigued shift workers (Folkard & Tucker, 2003). Moreover, emotional fatigue manifested as irritability, stress, and diminished motivation, which further exacerbated the strain of their work environment.

Interestingly, the analysis revealed that fatigue was also intensified by psychosocial factors. The inability to synchronize work hours with family and social life created emotional burdens that added to physical weariness. A participant lamented, *“Working nights means missing out on important family moments. That alone tires me mentally. When I come home, I’m not just physically tired—I feel lonely and stressed.”* This highlights the interconnectedness of work schedules and social well-being, emphasizing that fatigue is not only a physiological state but also deeply embedded in workers’ relational contexts (Wittmann et al., 2006).

The organizational environment emerged as a critical influence on fatigue levels. Participants reported that lack of control over shift assignments and inflexible scheduling increased feelings of helplessness and fatigue. In contrast, those who had some degree of influence over their shifts or received support from supervisors described somewhat less intense fatigue. One participant noted, *“When my manager allows me to swap shifts sometimes, I feel less worn out. Having some say in my schedule makes a big difference.”* This reflects the Job Demand-Resources Model, which posits that job resources like autonomy can buffer against the harmful effects of high demands (Bakker & Demerouti, 2007).

Coping strategies for fatigue varied widely but often involved both adaptive and maladaptive behaviors. Many participants relied on stimulants such as caffeine or energy drinks to stay alert during shifts, while some used brief naps to recuperate. However, a few admitted to unhealthy practices like excessive reliance on medication or neglecting rest periods. A telling comment was, *“Sometimes I drink coffee all night just to stay awake, but then I crash hard afterward.”* These coping methods underscore the precarious balance shift workers maintain in managing fatigue, often without adequate guidance or organizational support.

In summary, the analysis paints a vivid picture of fatigue as a multifaceted challenge deeply intertwined with shift work. It affects physical stamina, cognitive performance, emotional resilience, and social well-being. Furthermore, the organizational context and

coping mechanisms play vital roles in shaping the intensity and experience of fatigue among shift workers in Ghana. These findings echo and extend global literature, highlighting the urgent need for workplace policies that address both the biological and psychosocial dimensions of fatigue in shift-based employment.

To explore coping strategies used by shift workers.

Participants' narratives revealed that societal perceptions and cultural norms play a profound role in influencing how age-discrepant relationships are viewed, experienced, and managed. The data highlighted three interconnected themes: societal judgment and stigma, cultural acceptance and expectations, and coping with societal pressure.

Many participants emphasized that societal judgment often frames age-discrepant relationships in a negative light. Respondents reported encountering skepticism and criticism from family members, friends, and the broader community, which in many cases created tension and stress within the relationship. One participant shared, *"People in my community constantly ask why I am with someone so much older, like it's something wrong. That kind of judgment makes it hard sometimes."* This reflects a broader societal tendency to stigmatize relationships where the age gap challenges traditional norms. Such stigma can lead to feelings of isolation and pressure to conform, echoing findings by scholars who have noted the social challenges faced by couples with significant age differences (de Jong Gierveld & De Valk, 2012).

On the other hand, several participants acknowledged that certain cultural contexts provide a degree of acceptance or even encouragement of age differences in relationships. In some Ghanaian cultural settings, marrying an older partner is associated with stability, economic security, and respect, particularly for women. A respondent explained, *"In my culture, it's common for women to marry older men because they can provide better for the family. It's seen as normal and even desirable."* This acceptance is consistent with cultural theories that suggest societal norms around marriage and family vary widely and can influence relationship dynamics positively or negatively (Kagitcibasi, 2007).

However, cultural expectations also bring pressures and obligations that shape how couples navigate their relationships. Participants described feeling the weight of traditional roles, such as the expectation for older partners to be the providers and younger partners to conform to certain behavioral norms. One participant noted, *"Sometimes I feel I have to act a certain way because of the age difference—like I should be more submissive or understanding."* This dynamic may affect relationship satisfaction and power balance, resonating with studies on cultural influences in marital roles (Choudhury & Drennan, 2016).

Coping with societal and cultural pressures emerged as a significant theme. Couples often developed strategies to manage external judgments, ranging from selective disclosure to close-knit support networks. A participant shared, *"We don't tell everyone about our relationship because people have opinions. But we have close friends who understand and support us."* These coping mechanisms reflect resilience and adaptive strategies identified in relationship research where couples face external stressors (Papp & Witt, 2010).

Overall, the findings illustrate that societal perceptions and cultural norms are deeply embedded in the experience of age-discrepant relationships. These forces can simultaneously constrain and enable, shaping how couples interact, how they are perceived, and ultimately the stability and satisfaction within their marriages. Understanding these sociocultural dynamics is essential for comprehensively analyzing the impact of age differences on marital relationships.

DISCUSSION OF RESULTS

The findings from this study provide a rich understanding of how shift work influences employee health, specifically focusing on sleep disorders, fatigue, and the broader role of societal and organizational factors. These results align closely with existing literature but also offer context-specific nuances reflective of the Ghanaian work environment.

The first objective explored the prevalence of sleep disorders among shift workers. Participants overwhelmingly reported disrupted and fragmented sleep patterns, with many struggling to obtain restful, continuous sleep due to their irregular schedules. This corroborates earlier research by Rajaratnam and Arendt (2001), who demonstrated that circadian rhythm misalignment in shift workers leads to poorer sleep quality and reduced total sleep time. The reported "social jet lag" — the misalignment between biological rhythms and social obligations — was evident as participants described daytime noise, family responsibilities, and environmental distractions that further undermined sleep. Wittmann et al. (2006) similarly identified social jet lag as a major contributor to sleep deprivation in shift workers globally. Importantly, the study highlights that in the Ghanaian context, familial and cultural expectations add an additional layer of complexity to sleep challenges, a factor less emphasized in Western studies. For instance, caregiving duties and communal living arrangements may reduce opportunities for undisturbed sleep. This suggests that interventions to improve sleep quality must consider not only biological but also sociocultural factors unique to Ghana.

Regarding the second objective—the relationship between shift work and fatigue—the findings illustrate that fatigue is a multidimensional experience, encompassing physical exhaustion, cognitive impairment, and emotional strain. These qualitative insights are consistent with Åkerstedt (2003), who emphasized that fatigue in shift workers is not limited to bodily tiredness but includes diminished alertness and mood disturbances. Participants' accounts of "mental fog" and reduced concentration resonate with Folkard and Tucker's (2003) findings on increased error rates during night shifts. The data also support the Job Demand-

Resources Model (Bakker & Demerouti, 2007), as organizational factors such as lack of autonomy over shift schedules exacerbated fatigue. Workers with some control over their hours reported feeling less fatigued, underscoring the protective role of job resources. This aligns with Karhula et al. (2013), who found that workplace support and flexible scheduling mitigate shift work's negative health effects.

The study further uncovers the psychosocial dimensions of fatigue, highlighting the interplay between work schedules and family or social life. Participants' expressions of loneliness and stress due to missed social interactions echo findings by Wittmann et al. (2006), which link social disruption to psychological fatigue. This adds a vital Ghanaian perspective, where communal bonds and family involvement are culturally central. The fatigue described thus stems not only from physiological strain but also from emotional burdens imposed by societal and familial expectations. Such insights suggest that fatigue management strategies should include counseling and social support components tailored to cultural contexts.

The third objective focused on societal perceptions and cultural norms shaping experiences of age-discrepant relationships. Participants reported encountering stigma and judgment, consistent with de Jong Gierveld and De Valk (2012), who documented social challenges faced by couples with significant age differences. However, the study also revealed cultural acceptance in specific Ghanaian communities, where marrying older partners is sometimes viewed positively for reasons of economic security and status. This duality reflects Kagitcibasi's (2007) assertion that cultural norms profoundly influence relationship dynamics and expectations. The themes of role expectations and power imbalance within such relationships parallel Choudhury and Drennan's (2016) observations on traditional marital roles shaped by cultural context. Notably, participants' coping strategies through selective disclosure and reliance on supportive networks align with Papp and Witt's (2010) findings on resilience in stigmatized couples.

Counterarguments exist in the literature regarding the universality of these findings. For instance, some studies argue that age differences do not inherently predict relationship dissatisfaction or instability (Brown & Shinohara, 2013). They suggest that individual factors such as communication quality and mutual respect may be more critical determinants than societal perceptions. While this study acknowledges those factors, the pronounced role of cultural and societal norms in Ghana indicates that external perceptions significantly influence marital experiences. Therefore, the present findings do not discount individual agency but rather emphasize the contextual pressures that couples must navigate.

Similarly, in the shift work literature, some scholars argue that individual differences in chronotype (morningness-eveningness preference) may moderate the impact of shift schedules on health (Adan et al., 2012). While this biological factor is important, the current study highlights that organizational support and cultural context are equally critical in shaping outcomes. Thus, interventions focused solely on biological adjustment without addressing workplace conditions and social factors may fall short.

In sum, the study's findings affirm existing theoretical and empirical work while contributing context-specific insights that enrich the understanding of shift work and marital age differences in Ghana. The integration of biological, psychological, social, and cultural dimensions provides a comprehensive framework for addressing these complex issues. Future research should explore intervention strategies tailored to the unique organizational and cultural environments of Ghanaian workers and couples.

CONCLUSION AND RECOMMENDATION

This study has shed light on the multifaceted impact of shift work on employee health, focusing on sleep disorders and fatigue, while also exploring how societal perceptions and cultural norms influence age-discrepant relationships. The findings underscore that shift work significantly disrupts normal sleep patterns and contributes to chronic fatigue, affecting physical, cognitive, and emotional well-being among Ghanaian workers. Moreover, fatigue emerges not only as a biological consequence but also as a complex phenomenon shaped by workplace conditions and psychosocial stressors, including family dynamics and social isolation. The study further reveals that cultural expectations and societal attitudes play a critical role in shaping experiences within age-discrepant marital relationships. While stigma and judgment persist, cultural contexts that value economic stability and traditional roles may mitigate some negative perceptions. Couples employ various coping strategies to navigate these pressures, highlighting resilience amid social challenges.

Given these findings, several recommendations emerge:

For Employers and Organizations:

- Develop and implement shift scheduling policies that minimize consecutive night shifts and allow greater employee control over shift selection to reduce fatigue and improve sleep quality.
- Provide rest facilities and designated nap times, especially for night-shift workers, to mitigate acute fatigue.
- Incorporate health promotion programs addressing sleep hygiene, fatigue management, and stress reduction tailored to the needs of shift workers.
- Foster a supportive organizational culture where employees feel comfortable discussing challenges related to shift work without stigma.

For Policy Makers:

- Establish regulatory frameworks that limit excessive shift durations and mandate adequate rest periods to protect worker health.

- Promote occupational health standards that require employers to consider psychosocial factors affecting shift workers, including family and social support.
- Encourage research and funding aimed at developing culturally sensitive interventions to improve shift workers' well-being.

For Couples and Communities:

- Increase awareness and education programs that challenge stigma related to age-discrepant relationships, fostering more inclusive social attitudes.
- Provide counseling and support services that address the unique relational dynamics and societal pressures faced by couples with significant age differences.

For Future Research:

- Conduct longitudinal studies to examine long-term health outcomes of shift work among diverse Ghanaian occupational sectors.
- Explore intervention efficacy for fatigue management that integrates biological, organizational, and cultural considerations.
- Investigate further the interplay of cultural norms and marital satisfaction in age-discrepant relationships, with a focus on how changing social values influence these dynamics.

In conclusion, this study emphasizes that addressing the health consequences of shift work and understanding the sociocultural factors in marital relationships require a holistic approach. Interventions must integrate biological, psychological, organizational, and cultural dimensions to effectively improve well-being and relationship stability within the Ghanaian context.

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