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## Assessing Factors Influencing the Health and Well-Being of Senior Members at the University of Mines and Technology (UMaT), Tarkwa, Ghana

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### **Abstract:**

*The paper focused on the assessment of factors that influence the health and well-being of senior members at the University of Mines and Technology, Tarkwa - Ghana. It analyses factors such as workload and stress, working hours, sleep, and age. Qualitative and descriptive research design approach guided the assessment. A semi-structured questionnaire facilitated the collection of data from purposively selected 100 senior members teaching and non-teaching. In addition, a structured interview guide was used to solicit responses from key informant. The data obtained were analysed with the aid of Stata version 16.0. Results of the study indicated that workload and stress, working hours, and sleep are some of the factors that influence the health and well-being of senior members and the effective management of these factors would ensure good health and vitality for this category of workforce in the University. It was recommended that health policy and advocacy, as well as provision of health infrastructure such as a basketball and tennis court to ease stress and enable exercising coupled with adequate spending of annual leave for teaching and non-teaching senior members will ensure their optimal health and well-being.*

**Keywords:** Health and well-being, influence, senior members, University

### **1. Introduction**

Well-being consists of three interrelated components: life satisfaction, pleasant affect, and unpleasant affect. Affect refers to pleasant and unpleasant moods and emotions, whereas life satisfaction refers to a cognitive sense of satisfaction with life (Diener & Suh, 1997). The World Health Organisation defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1998). This shows the wholesomeness of a human being as a composition of physical, emotional, intellectual, and social parts, in which the conditionality of the individual aspects to one another is recognized. This closely links to United Nations Sustainable Goal three (3) which is: 'ensure healthy lives and promote well-being for all at all ages'. An individual's experiences at work, be they physical, emotional, mental, or social, clearly affect the person while she or he is in the workplace. In addition, these experiences also affect non-work domains. Workers spend about one-third of their waking hours at work and do not necessarily leave the job behind when they leave the worksite (Conrad, 1988a). Undeniably, the overlap between non-work and work has become a popular research area, with the recognition that a person's work and personal life are not separate entities but are interrelated and intertwined domains having reciprocal effects on each other (cf. Caudron, 1997; Zedeck & Mosier, 1990). For example, work-related stress combined with the stress from everyday life can lead to detrimental physical and emotional outcomes because of the excess physical and mental demands placed on the human body and mind (cf. Cooper & Cartwright, 1994). In the workplace, health boosts worker effectiveness and the productivity of an individual via an increase in physical and mental capacities, which are necessary for economic growth and development (Imoughele & Ismaila, 2013). However, this is often hampered by some factors that affect the health and well-being of workers. For example, Shier & Graham (2011) found out that overall subjective well-being was impacted by characteristics of workers' environment (i.e. physical, cultural, and systemic), interrelationships at work (i.e. with clients, colleagues, and supervisors), and specific aspects of the job (i.e. factors associated with both workload and type of work). Boyd (1997) also opined that workers experiencing poor health and well-being in the workplace may be less productive, make lower quality decisions and be more prone to be absent from work.

It was, therefore, imperative to understand the dynamics that play a key role in health and well-being by appreciating the relational causes to inform Senior Members of the University of Mines and Technology (UMaT), Tarkwa to make the right choices to ensure that their health and well-being are assured for optimal performance. The study hopes to assess factors that influence the health and well-being of Senior Members in UMaT.

## 2. Related Literature

Over the past years, lifestyle influencers like smoking cigarettes, being overweight, drinking alcoholic beverages, being inactive, or leading a sedentary lifestyle have often been cited as contributory factors for premature and preventable mortality and morbidity (Lantz PM *et al.*, 1998). In 2005, Paula M. Lantz and his colleagues in their research on Stress, Life Events, and Socio-economic Disparities in Health also supported the hypothesis that differential exposure to stress and negative life events is one of many ways in which socio-economic inequalities in health are produced in society. More recently, differences in health outcomes by socio-economic position have been recognized as a persisting and perhaps even increasing public health problem. For example, Kuh & Ben-Shlomo (1997) indicated that there is a growing recognition of the importance of examining people's current health in light of their life-course experiences. The foregoing and factors discussed below may, therefore, be important to draw inferences on how impactful these factors are on the health and well-being of Senior Members of the University of Mines and Technology.

### 2.1. Workload & Stress

Margolis and Kroes (1974) define job stress as a condition at work interacting with worker characteristics to disrupt psychological or physiological homeostasis and suggest that there are at least five dimensions of job-related strain: short term subjective states (anxiety, tension, and anger) and long term and more chronic psychological responses (depression, general malaise, and alienation), transient physiological changes (levels of catecholamine, blood pressure, etc.), physical health gastrointestinal disorders (coronary heart disease and asthmatic attacks), and work performance decrement. In the same vein, Crozier (1964) and Drabek and Hass (1969) discuss organisational strain which arises among groups of workers simultaneously facing heavy workloads and rigid rule structures or limited decision alternatives. McGrath (1976) also indicated that there is a potential for stress when an environmental situation is perceived as presenting a demand versus not meeting it. To further buttress the submissions, the COR theory (Hobfoll, 1989, 2011) also believes that individuals seek to gain and maintain resources (e.g., feeling of mastery, self-esteem, socio-economic status, etc.) to avoid stressful experiences. Consequently, an inadequate salary can be a stressor, particularly when employees place a high value on monetary rewards and feel that the rewards they are receiving are inadequate, which, in turn, signals a threat to their self-esteem or socio-economic status. As a result, employees may feel stressed by inadequate salary, resulting in negative health consequences. According to Frankenhaeuser (1986) and Shaw and Weekley (1985), many studies associate a high workload with stress evoked by either the number of tasks confronted with or by the difficulty of a task. Jamal (2007) also indicated that an individual's performance is low at a low level of workload, at the medium level at a moderate workload, and highest at a high level of workload. However, in a positive relationship between workload and performance, it is presumed that individuals need a certain level of stress or challenge to be activated and to perform at their best (Merelman, 1997). By contrast, numerous studies provide support for the negative relationship between workload and performance. For example, Bhagat *et al.*, (1985) & Long *et al.*, (1992) indicate that workload and possibly resulting stress can be dysfunctional for the individual and the organization. A workload, that is too high, is viewed as a barrier and distracts employees from their work. An increase, for example, in workload may lead to a reduction in job performance. In the same vein, Andoh-Roberston *et al.*, (2020) concluded that occupational stress has become one of the vital concerns for many institutions these days and that job stress is a real challenge for staff in UMaT. Nonetheless, Long *et al.* (1992) believed that individuals have emotional and defensive coping mechanisms for situations with high workloads rather than problem-solving behaviour and this leads to a decrement in task performance.

### 2.2. Age

Elderly persons globally suffer from various health problems such as chronic conditions, injuries, depression from loneliness, malnutrition, visual problems, hearing loss, and complex dental problems (Kohler *et al.*, 2017, Chen EY, Sliggett JK, Hilmer SN, *et al.*, 2018). According to the United States National Center for Health Statistics, older adults are the most frequent and heaviest users of US health services, including visits to general practitioners, medical specialists, emergency departments, ambulatory surgeries, inpatient hospitalizations, and home health care. Productivity levels vary by age for many reasons, including the length of work experience, cognitive functioning, education, physical abilities, stamina, health, family and care obligations, motivation, energy, matching of the worker to the task, loyalty and personality. Average muscle strength decreases by roughly 10% per decade for ages 20–60, by approximately 15% per decade for ages 60–80, and 30% per decade for ages 80 and above (Mazzeo, 2000). In the same vein, De Zwart *et al.* (1995) show that aerobic capacity peaks somewhere in the 20s and declines by around 1% per year. Bosek *et al.*, (2005) also state that flexibility decreases with age, which makes it difficult to adopt certain working positions. Schwartzman *et al.* (1987), however, found that verbal skills (crystallized abilities) remain virtually unchanged at older ages, while reasoning and speed (fluid abilities) decrease from early adulthood, based on psychometric test results of men in different age groups.

### 2.3. Working Hours

The borders between working and leisure times are no longer fixed and rigidly determined by the normal working day. Not only are working hours extended into the evening and night hours, as well as to weekend days, but hours of duty

have become more variable (e.g., part-time, 6 and 12 hour shifts, irregular shift schedules, compressed workweeks, split shifts, etc.) in a society that never stops i.e. 24 hour Society, and requires continuous adjustments to its evolution and organization (Giovanni et al., 2004). There are diverse points of view about "labour flexibility" between employers and employees. The former are keener to view it in terms of prompt adaptation of production/service systems to market demands and technological and organizational innovations; whereas, the latter consider it an important tool to improve working and social life by decreasing work constraints, increasing employment and gaining autonomy over one's affairs. Giovanni *et al.*, (2004) state longer working hours are generally known to be negatively related to employees' mental health (Spurgeon, Harrington, & Cooper, 1997; van der Hulst, 2003). Too many work demands make employees feel exhausted or burned out and exhaust their limited energy, resulting in poor health consequences (Maslach, Schaufeli, & Leiter, 2001; Valcour, 2007). Moreover, when individuals perceive that they have insufficient time to accomplish their work and family role demands, they experience higher levels of role conflict, which leads to negative healthiness (Dugan, Matthews & Barnes-Farrell, 2011). Many prior studies have also reported that long hours spent working negatively affect employees' well-being. For example, one meta-analysis reported that higher numbers of work hours are negatively associated with psychological well-being (Sparks, Cooper, Fried, & Shirom, 1997). Equally, using a sample of private-sector employees, an empirical study also found that long work hours positively and significantly related to employees' depression through work and family role conflict (Major, Klein, & Ehrhart, 2002). It is, therefore, difficult to disagree with the fact that long working hours exacerbate employees' well-being. The above, notwithstanding, a few studies have explored the relationship between working hours and well-being outcomes in the field of public administration.

### 3. Study Setting

The study was conducted at the University of Mines and Technology (UMaT), Tarkwa. UMaT was established by an Act of Parliament (Act 677) in 2004. The University is a publicly funded institution in Ghana and it is superintended by a University Council, the highest decision-making body. There are three Schools and four Faculties at the University. The Schools are: the School of Postgraduate Studies, the School of Railways and Infrastructure Development and the School of Petroleum Studies. The Faculties include: the Faculty of Engineering, Faculty of Mining and Minerals Technology, Faculty of Geosciences and Environmental Studies, and Faculty of Integrated Management Studies. UMaT has fifteen Academic Departments with staff strength of Six Hundred and Eight (608). Out of this number, Two Hundred and Twenty-Seven (227) are Senior Members comprising teaching and non-teaching.

### 4. Research Approach

#### 4.1. Study Design

The study adopted a largely qualitative and descriptive approach to elicit practical experiences to understand and appreciate the influencers on the health and well-being of participants. The population of the study involved senior members at UMaT drawn from teaching and non-teaching to form the target group. A non-probability sampling technique was used to select 100 teaching and non-teaching senior members who have worked at the university for at least one year. This was because this category of staff was envisaged to be in a better position to give an account of the variables as they may have been involved in an extra load of work aside from their normal routine jobs like teaching, research, and administrative duties. The two main instruments used by the researchers to collect data were questionnaires and the key informant technique. One hundred (100) questionnaires were administered and 42 responses were retrieved. Both open-ended and close-ended questions were used by the researchers to collect data. Open-ended questions allowed the respondents to share their views on the research topic and the close-ended questions provided respondents with a fixed number of responses to choose from the questionnaire. These were the primary source of the researchers' information. The questionnaire for the study was pre-tested within a similar environment to the study area. This was done to check for the practicability, clarity, consistency, and acceptability of the questions and all the necessary corrections were made before the final questionnaire was administered. The secondary data for the study consisted of information in the form of a literature review. With the help of Stata version 16, the results were descriptively analysed and presented in tables and graphics for easy comprehension. These tabular and graphical illustrations were used to discuss the findings.

### 5. Key Findings and Discussion

#### 5.1. Socio-demographic Characteristics of Respondents

The survey revealed that 69.6% of senior members of the non-teaching and teaching workforce were below the age of forty (40) years. 56.3% of the members were between the ages of forty and forty-nine (40-49) years, whereas 59.3% were between the ages of fifty and fifty-nine (50-59) years. This indicates that the dominant age group of senior member workforce was less than forty (40) years. The study further revealed that staff from across all administrative units as well as teaching staff from Full Professors to Lecturers participated in the study indicate a wide range of experiences and perceptions of the case (Table 1).

Variable	Non-Teaching Staff		Teaching Staff	
	Frequency (n=27)	Percent (%)	Frequency (n=15)	Percent (%)
<b>Age (Years)</b>				
Mean ± SD	44.43±7.99		44.07±10.55	
<40	8	29.6	6	40
40 – 49	8	29.6	4	26.7
50 - 59	7	26	5	33.3
Missing values	4	14.8	0	0
<b>Designation</b>				
Registry	14	51.9	-	-
Finance	4	14.8	-	-
Library	3	11.1	-	-
Internal audit	2	7.4	-	-
Others	4	14.8	-	-
Lecturer	-	-	7	46.7
Senior lecturer	-	-	3	20
Associate professor	-	-	3	20
Full professor	-	-	2	13.3

Table 1: Socio-demographic Characteristics of Respondents

Source: Field Survey, 2022

### 5.2. Administrative Assistant and Other Responsibilities

The study revealed that out of the 27 senior members (non-teaching) that participated in the study, 55.6% had an assistant, while 44.4% did not. As regards the teaching staff, 80% of them did not have an assistant, while 20% had. Therefore, it is observed from the results that teaching staff have to carry the burden of a load of teaching, research, extension services, and other administrative duties in the case of heads of departments and deans with little or no assistance. In the case of senior members (non-teaching), although the results showed that more than half of the respondents have assistants, which was not encouraging. For instance, one respondent, who does not have an assistant, remarked as follows:

*'My job is heavily loaded. I manage core duties, committee assignments, as well as other clerical duties meant for administrative assistants all by myself, hence making me stressed out because of pressure to meet deadlines'*

The study also revealed that 85.2 % of non-teaching staff and 80.0% of teaching staff have other responsibilities aside from their core duties (Table 2).

Variable	Non-Teaching Staff		Teaching Staff	
	Frequency (n=27)	Percent (%)	Frequency (n=15)	Percent (%)
<b>Administrative Assistants</b>				
No	12	44.4	12	80.0
Yes	15	55.6	3	20.0
<b>Other Responsibilities</b>				
No	4	14.8	3	20.0
Yes	23	85.2	12	80.0

Table 2: Administrative Assistant and Other Responsibilities

Source: Field Survey, 2022

### 5.3. Factors That Influence the Health and Well-Being of Senior Members

#### 5.3.1. Working Hours

The study revealed that both teaching and non-teaching senior members work beyond the normal working hours. Furthermore, the high percentages tilted towards work during the weekend gives credence to senior members having to work long hours extending to the weekend. The finding also reinforces the assertion made by Giovanni *et al* in their study entitled: Flexible Working Hours, Health, and Well-Being in Europe that not only are working hours extended into the evening and night hours but also to a weekend. The average number of working hours for teaching and non-teaching senior members in a day was between 8-10 hours as revealed by the study. Approximately, half of the respondents confirmed that they experience pain after long hours with more than half of non-teaching staff indicating that long working hours are counterproductive as against a huge percentage of 93.3% of senior members teaching responding that

long working hours are not counterproductive. This indicates that senior members at UMaT are burdened with a heavy workload thus, buttressing the suggestion made by Frankenhaeuser, Shaw, and Weekley that many studies associate a high workload with stress evoked by either the number of tasks confronted with or by the difficulty of the task. Although the study revealed that almost all senior members had no mental issues as a result of long working hours, approximately half (46.6%) of the total number of respondents go for health check-ups once a year bringing into sharp focus the lack of time to care for their health concerns by having regular checkups to ensure that diseases are detected early for treatment.

Two respondents from the teaching staff remarked as follows:

*'Long working hours keep me away from my family; and this does not help build solid family cohesion'*

*'Long working hours bring a lot of delays in delivering on time since you would have to run certain necessary errands by yourself. Also, minor aspects of the job which you could be assisted with to help meet/beat deadlines, you would have to do by yourself, which is stressful'*

Variable	Non-Teaching Staff		Teaching Staff	
	Frequency (n=27)	Percent (%)	Frequency (n=15)	Percent (%)
Working Hours				
8 hours	4	14.8	0	0.0
8-10 hours	21	77.8	10	66.6
10-11 hours	1	3.7	3	20.0
11-12 hours	0	0.0	1	6.7
12 hours	1	3.7	1	6.7
Long working hours affect you in any way				
No	10	37.0	7	46.7
Yes	17	63.0	8	53.3
Do you experience pain after long hours of work				
No	14	51.9	6	40.0
Yes	13	48.1	9	60.0
Do you experience any mental issue after long hours of work				
No	24	88.9	14	93.3
Yes	3	11.1	1	6.7
Long working hours are counterproductive to me				
No	16	59.3	14	93.3
Yes	11	40.7	1	6.7

Table 3: Working Hours  
Source: Field Survey, 2022

Similarly, the number of teaching courses taught by senior teaching members recorded a mean of  $4.9 \pm 2.8$ , while the mean of the total number of credit hours was  $26.61 \pm 9.79$  indicating long credit hours for teaching. Furthermore, all senior teaching members, who responded to the questionnaire, were supervising student dissertations with the majority supervising more than 5 undergraduates (64.3%) and 1-3 postgraduate (57.1%) dissertations per year making it a daunting task combining administrative duties for those who hold administrative positions in addition to teaching and research (Table 4).

Number of Courses				
Mean $\pm$ SD	-	-	$4.9 \pm 2.8$	
1 -3	-	-	5	33.3
4-6	-	-	6	40.0
7+	-	-	4	26.7
Total number of credit hours				
Mean $\pm$ SD	-	-	$26.61 \pm 9.79$	
<20	-	-	3	20.0
20-29	-	-	8	53.3
30+	-	-	3	20.0
Missing values	-	-	1	6.7
<b>Supervision of student dissertation</b>				
No	-	-	1	6.7
Yes	-	-	14	93.3
<b>Number of undergraduates dissertations per year</b>				

Number of Courses				
1-3	-	-	1	7.1
4-5	-	-	4	28.6
>5	-	-	9	64.3
Number of postgraduate dissertations per year				
1-3	-	-	8	57.1
4-5	-	-	4	28.6
>5	-	-	2	14.3

Table 4: Number of Courses and Supervision of Student Dissertation  
Source: Field Survey, 2022

5.3.2. Stress and Stress-Related Health Conditions

From the results obtained, majority of senior members consider their job stressful (86.7 % of teaching staff and 63.0% of non-teaching staff) although 77.8% of non-teaching and 73.3% of teaching staff did not indicate any health condition associated with stress. The study also brought to the fore a whopping 70.4% of non-teaching staff who find time to attend recreational programmes as a means to manage stress and exercise to keep themselves fit, whereas 73.3% of teaching staff exercise and 60% attend recreational programmes as a means of keeping themselves fit (Figure 1). This finding, however, contradicts the response from the University Clinic that indicated that lack of exercise on the part of senior members contributes to health conditions like hypertension. A key informant made the following remark:

*'Factors such as workload, stress, sleep quality and quantity and long working hours result in high blood pressure, increased heart rate and rise in blood sugar and when these become chronic, it ends up producing negative results. That is the case of some senior members'*

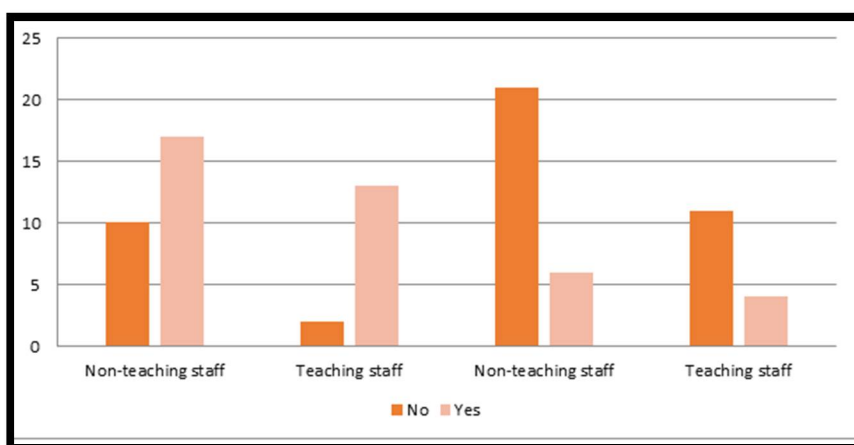


Figure 1 Stressful Job and Stress-Related Health Conditions

5.3.3. Age-Related Health Conditions

The study determined health conditions associated with age. It was realized that only four (4) non-teaching staff indicating 66.7% and two (2) teaching staff representing 50% indicated health conditions associated with age (figure 2).

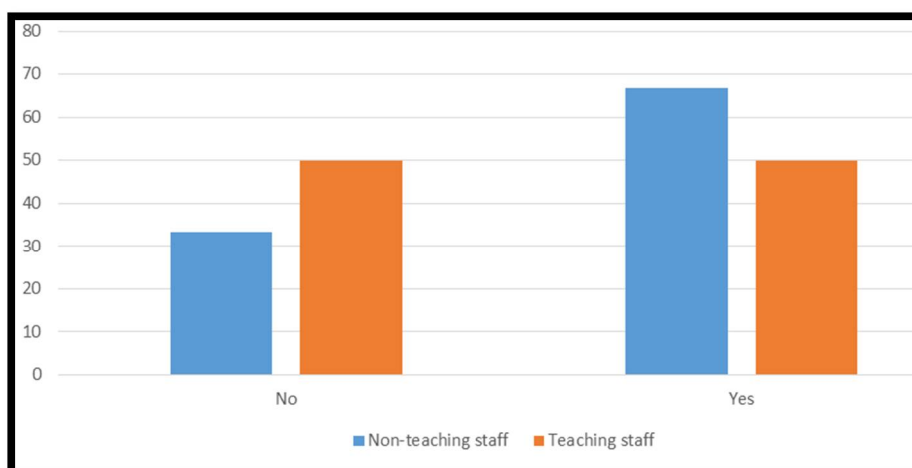


Figure 2: Health Conditions Due to Age

Data obtained from the University of Mines and Technology Clinic indicated that senior members between the ages of 45 - 55 years often present themselves with hypertension associated with age and also upper respiratory tract infection.

Variable	Non-Teaching Staff		Teaching Staff	
	Frequency (n=27)	Percent (%)	Frequency (n=15)	Percent (%)
Number of hours you sleep at night				
Between 5 and 6 hours	7	25.9	7	46.6
Between 6 and 7 hours	13	48.2	3	20.0
Between 7 and 8 hours	5	18.5	4	26.7
> 8 hours	2	7.4	1	6.7
Have difficulty falling asleep				
Rarely	10	37.0	10	66.7
Sometimes	15	55.6	3	20.0
Often	0	0.0	0	0.0
Almost always	2	7.4	2	13.3
Have difficulty staying asleep				
Rarely	14	51.9	10	66.6
Sometimes	10	37.0	4	26.7
Often	3	11.1	1	6.7
Almost always	0	0.0	0	0.0
Never go back to sleep after waking up				
Rarely	15	55.6	9	60.0
Sometimes	8	29.6	6	40.0
Often	4	14.8	0	0.0
Almost always	0	0.0	0	0.0
Feel refreshed after sleep				
Rarely	2	7.4	1	6.7
Sometimes	5	18.5	3	20.0
Often	11	40.7	7	46.6
Almost always	9	33.3	4	26.7
Poor sleep makes it hard for me to think during the day				
Rarely	8	29.6	1	6.7
Sometimes	15	55.6	5	33.3
Often	4	14.8	8	53.3
Almost always	0	0.0	1	6.7
Poor sleep gives me headaches				
Rarely	9	33.3	5	33.3
Sometimes	11	40.8	4	26.7
Often	4	14.8	3	20.0
Almost always	3	11.1	3	20.0
Sleep hours are enough				
Rarely	2	7.4	0	0.0
Sometimes	8	29.6	5	33.3
Often	12	44.5	6	40.0
Almost always	5	18.5	4	26.7
Function well after sleep				
Rarely	2	7.4	0	0.0
Sometimes	2	7.4	1	6.6
Often	10	37.0	7	46.7
Almost always	13	48.2	7	46.7
Experience excessive daytime sleepiness				
Rarely	16	59.3	8	53.3
Sometimes	8	29.6	5	33.3
Often	2	7.4	1	6.7
Almost always	1	3.7	1	6.7
Poor sleep affects my work output				
Rarely	9	33.3	4	26.7
Sometimes	13	48.2	5	33.3
Often	4	14.8	3	20.0
Almost always	1	3.7	3	20.0
Aware sleep deprivation can cause immune function disorder, heart disease, irregular heartbeat, high blood pressure, stroke, diabetes				
No	3	11.1	2	13.3
Yes	24	88.9	13	86.7

Table 5

Source: Field Survey, 2022

#### 5.4. Sleep

The findings show that majority of non-teaching staff sleep between 6 and 7 hours as against the majority of teaching staff who do so between 5 and 6 hours demonstrating that most of the senior teaching members do not get adequate sleep probably as a result of difficulty in falling asleep, staying asleep or and never going back to sleep after waking up. As shown in table 4, both teaching and non-teaching senior members indicated varied outcomes associated with their sleep patterns.

Of interest, however, is that almost all of the participants confirmed they were aware that sleep deprivation can cause immune function disorder, heart disease, irregular heartbeat, high blood pressure, stroke, and diabetes.

### 6. Conclusion and Recommendations

The study clearly establishes that factors such as long working hours, quantity and quality of sleep, workload and stress influence the health and well-being of senior members at the University of Mines and Technology. A healthy workforce is key to increased productivity. Therefore, based on the findings, we recommend that the University should work at both policy and practice levels.

#### 6.1. Policy Level

- The University should have a Health Policy that will indicate the future direction of the health and well-being of its Staff.
- The University should have a system in place to effectively communicate this policy to staff, families and dependents.

#### 6.2. Practice Level

- The University should take steps to encourage senior non-teaching members to take their full annual leave when is due to reduce work-related stress as well as institute annual leave for teaching staff.
- Senior members should include time management in their daily work schedules to enable them to apportion their time to take care of their health and family needs.
- The University should consider building a keep fit centre like a tennis or basketball court on campus for staff to socialize and exercise.
- Finally, there should be a system whereby staff can assess medical care when they are out of campus.

### 7. Research Limitations and Directions for Further Research

The study chronicled some limitations. These included the low response rate from respondents and non-response to some of the items in the questionnaire. A further study may be conducted for other categories of staff to complement this study and provide a basis for comparative analysis.

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