

Common Signs and Symptoms of Non-Communicable Diseases Experienced and Diagnosed among Bicol University Teaching Personnel

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Abstract

As the Bicol University (BU) teaching personnel commit in doing their jobs, they sometimes take their health for granted. Some would suffer from ill-health and experience signs and symptoms, others would develop non-communicable diseases (NCDs). This study then determined the common signs and symptoms experienced by the BU teaching workforce, and the NCDs and other ailments they are diagnosed with. It also determined preventive measures that may help promote healthy lifestyle. This is a descriptive quantitative study which utilized a validated semi-structured questionnaire, employed random sampling of respondents under a criteria set, and analyzed through frequency, percentage and ranking. Findings revealed that common signs and symptoms like headache, cough and colds, body and muscle pain, backache, and, stomachache are sometimes experienced by the respondents. Fainting spells, panic attacks, vomiting, nausea, and toothache are never experienced by them. Under the diagnosed NCDs and other ailments, only 46 is diagnosed with high blood pressure or hypertension, 25 with asthma, 20 with diabetes, 18 with arthritis and 14 with obesity. Three salient measures are recommended: undergo laboratory exams annually and receive vaccines, do regular exercises, eat and drink healthy, and promote active lifestyle.

Keywords: *Common Signs and Symptoms, Diagnosed Non-Communicable Diseases, Healthy Teaching Workforce, Promote Healthy Lifestyle*

Introduction

The teaching workforce in every institution is always active and works non-stop to meet their class and to meet deadlines as well. Some of them barely eat even if others have resources to buy food and drinks to satiate their hunger. Others whose work requires them to sit down most of the time can barely stand or move about to finish their tasks. Because of this, some personnel would have symptoms that remain for several weeks. Others would develop non-communicable diseases. As the Bicol University (BU) teaching workforce commits in doing their jobs, they sometimes take their health for granted. Some would suffer from ill-health and experience signs and symptoms, others would develop non-communicable diseases (NCDs).

NCDs, also known as chronic diseases, are medical conditions of diseases that are not caused by infectious agents (WHO, 2021). These diseases tend to be of long duration and are the result of a combination of genetic,

physiological, environmental, and behavioral factors. The main types of NCD are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.

Eng and colleagues (2016) posited that health promotion is essential in the workplace, to help prevent NCDs among employees. They underwent a prospective cohort study, which included 1,365 employees enrolled in the university's workplace health promotion program, a program conducted since 2008 and using data from the 2008–2013 follow-up period. Participants were permanent employees aged 35 years and above, with at least one follow up measurements and no change in antihypertensive medication during the study period. Changes in blood pressure over time were analyzed using a linear mixed model. They concluded that the continuing participation in workplace health promotion program has the potential to improve blood pressure levels among employees. Agaba and colleagues (2017) posited that the

incidence of NCDs is rising globally, with its attendant morbidity and mortality, especially in developing countries. Their study then evaluated the prevalence of NCDs and their risk factors among members of a university community. All employees of the university were invited to the university Health Clinic for screening, using the World Health Organization’s STEPwise approach to NCDs. The study identified that NCDs and their modifiable risk factors are highly prevalent in this community. Workplace policy to support the adoption of healthy living is needed.

The Department of Labor and Employment or DOLE through Department Order 184 sets mandatory occupation safety and health standards in all workplaces to address health risks and ensure safe working conditions in offices (DOLE: Bureau of Labor Relations, 2017). Sedentary work or prolonged sitting while working poses threats to workers as it can lead to high blood pressure, heart disease, anxiety, musculoskeletal disorders and other health problems (Prince *et al.*, 2017). Under the order, employers must provide workers with regular 5-min breaks every two hours from sitting time. This present study aims to achieve the same: to develop a similar policy that would ensure prevention of illness and promotion of health among the workforce in Bicol University. In this study, NCD’s referred to diseases diagnosed by a registered medical doctor that are classified as a non-communicable disease. Therefore, this study focused on the common signs and symptoms experienced, and the NCDs the teaching personnel of Bicol University are diagnosed with. The study also recommended preventive measures that may help promote healthy lifestyle.

Materials and Methods

This descriptive quantitative survey-type study employed stratified random sampling of respondents qualified under the following inclusion criteria: a) those who have been in the university for at least one year, b) those who are in permanent status, and c) those who were willing to participate during the data gathering period. A list of BU teaching personnel’s total population was requested from the BU Human Resource Management Office (BUHRMO) in November 2018. From a total population size of 551, a sample size of 172 respondents were taken (Table 1). The study utilized a semi-structured survey questionnaire previously validated by selected teaching personnel from BU College of Nursing and BU Tabaco Campus, those who were not part of the sampled

number of respondents. The questionnaire was tailored from a focus group discussion (FGD) participated by selected staff from the College of Nursing, College of Medicine, and Institute of Physical Education, Sports and Recreation. It consists of 4 parts: 1) Socio-demographic profile, 2) Common health habits and lifestyle choices, 3) Signs/symptoms and diagnosed non-communicable disease (NCDs) and other ailments, and 4) Possible preventive measures for NCDs. The signs and symptoms noted are those that the respondents experienced for the last twelve months while the diagnosed NCDs are those that have been clinically diagnosed by a registered medical doctor. Interview among the participants was also conducted to triangulate the data.

During the actual data gathering, the researcher requested the respondents to read, understand and sign the Informed Consent. After the data gathering, the data

Table 1. Respondents of the Study

Unit/College	BU Teaching Personnel	
	Total Population	Sample Size
Main Campus		
BUCM	13	4
BUCE	72	22
BUIPESR	11	3
BUGS	2	1
BUCAL	41	12
BUCN	25	8
BUCS	56	17
East Campus		
BUCIT	37	12
BUCENG	40	13
BUIA	8	3
BURDMD	15	5
BUEMD	7	2
Daraga Campus		
BUCSSP	35	11
BUCBEM	34	11
BUTC	39	12
BUCAF	50	16
BUPC	59	18
BUGC	7	2
Total	551	172

were collated, tabulated, and analyzed through descriptive statistics such as frequency, percentage and rank.

Results and Discussion

The Common Signs and Symptoms Experienced by the BU teaching Workforce

Findings revealed that the common signs and symptoms experienced by the teaching workforce of Bicol University, while working in school, were marked with higher frequencies under sometimes (Figure 1a). The first five signs and symptoms marked with Sometimes by the respondents are headache, cough and colds, body and muscle pain, backache, and stomachache. In a study by Petit and colleagues (2015), it was found out that production of glycogen, a substance that is considered as storage of energy, is increased during sleep. This glycogen is then utilized during wakefulness in order to meet the energy demands of the brain. Lack of sleep leads to a decrease in the production of glycogen which causes a disturbance in the electrophysiological activity of the brain causing headaches and migraines. A teacher's work involves not only teaching students, but also preparing for classes, evaluating the work of students, and participating in various school activities and programmes. These make them vulnerable to physical and mental health problems. Due to this, it was noted in a study that school teacher is one of the occupation group that is indicated to be at a high risk of musculoskeletal disorders (Alias *et al.*, 2020).

Headache is the symptom which was marked with the highest frequency of 154 or 89.53% under sometimes. This implies that BU teachers, even though they are beset with various academic challenges, only sometimes suffer from headache. According to one respondent, he sometimes suffer from headache when he fails to eat lunch especially when his classes ends way after 12:00 noon. Additionally, another respondent verbalized that he suffers from headache when he works in front of the computer the entire day.

Cough and colds are also Sometimes experienced by the respondents with a frequency of 141 or 81.98%. A cough, also known as tussis, is a voluntary or involuntary act that clears the throat and breathing passage of foreign particles, microbes, irritants, fluids, and mucus; it is a rapid expulsion of air from the lungs (Nordqvist, 2017). Coughing can be done deliberately or as part of a reflex. Coughing may be a sign of a serious illness, nevertheless, it can clear up without medical treatment. Common colds are the most common organism of all respiratory illnesses

and are the leading cause of physician consultations or hospital visits, as well as absenteeism from work and education. Common cold continues to be a major burden on society, economically and socially (Bomar, 2020). Cough and colds can make a teaching personnel feel really lousy to work and suffering from it affects their teaching performance. It may be best to do necessary precautions to avoid acquiring such. The teaching workforce and the other personnel of BU may avoid catching cough and colds by avoiding close contact with someone infected with a cold, eating plenty of vitamin-rich fruits and vegetables to help keep the immune system strong, and by washing hands regularly.

Body and muscle pain had a frequency of 132 or 76.74% in Sometimes. It was mentioned by a respondent that he suffered from mild muscle pain after a basketball game. He said it must have been brought about by the ball activities with his friends which he seldom do in recent months. Other times, he said his muscle pain comes with muscle cramps.

The pains and cramps may be resolved even without medical attention (Morrison, 2018). Other times, muscle aches may also be a sign of an underlying illness. Hence, the respondent pointed out that after two to three days, the muscle pain was relieved when he continued to do simple muscle exercises. Indeed, the BU teaching personnel may do exercises, not just ball activities, on a regular basis, so that doing sudden physical activities after a day's work will not lead to stiff and sore muscles. If other personnel do not have time for physical fitness exercises, they may do some muscle stretching in between their work schedule to avoid stiffness and soreness.

Backache had a frequency of 122 or 70.93%, also under Sometimes. A lady teaching personnel said that she experiences backache at times when she encodes several documents on her laptop. It is then advised that employees must make sure to sport good posture while working at the computer. According to National Institute of Neurological Disorders and Stroke (2019), short-term back pain lasts from a couple of days to several weeks. Lower back pain is most frequently acute. Within a few days of self-care, it appears to settle on its own and there is no residual loss of work. In several cases, it takes several months for the signs to vanish.

Stomachache had a frequency of 112 or 65.12% in Sometimes. A lady respondent verbalized that she sometimes suffer from stomachache after a stressful major activity in school because of her role as committee chair on reception. She said she usually feels it after

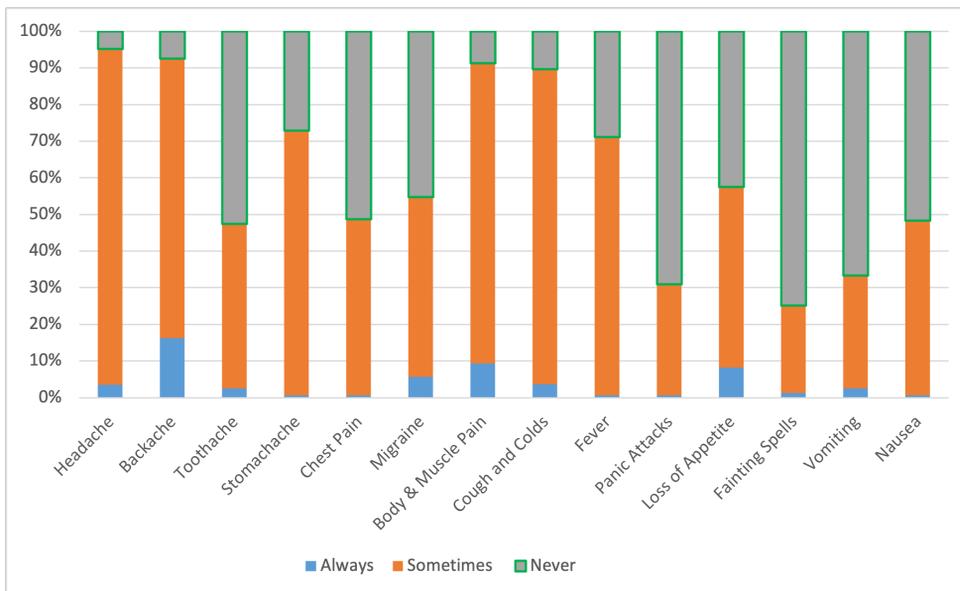


Figure 1a. Common signs and symptoms experienced by Bicol University teaching personnel.

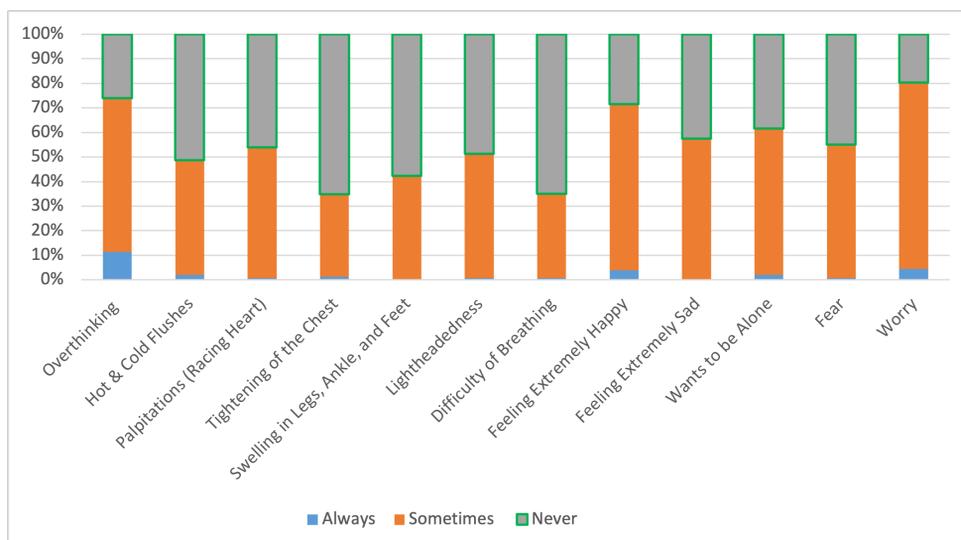


Figure 1b. Common signs and symptoms experienced by Bicol University teaching personnel.

returning home from the hectic schedule of the said activity, although she stressed that the pain in her stomach is more of a heartburn. Stress may induce both beneficial and harmful effects (Yaribeygi *et al.*, 2017). The beneficial effects of stress involve preserving homeostasis of cells/species, which leads to continued survival.

In Figure 1b, the indicators with the highest frequencies under Sometimes are: Worry with a frequency of 120 or 69.77%, followed by Feeling Extremely Happy

with a frequency of 102 or 59.30%, then Overthinking, with a frequency of 98 or 56.98%, also Wants to be Alone with 92 or 53.49%, and Feeling Extremely Sad with 88 or 51.16%. According to Morin (2018), overthinking everything can be debilitating. It happens when a person beat himself up for what he made last week, or he frets about how he is going to succeed tomorrow. The inability to get that “thing” out of the head leaves the person in a constant state of anguish. Everyone overthinks a situation

occasionally. However, if a person is a true over-thinker, he will struggle to quiet the constant barrage of thoughts. Overthinking is more than just a nuisance, studies show thinking too much can take a serious toll on your well-being (Morin 2018).

Although worry was marked as Sometimes, it is a relevant finding especially because 120 or 69.77% said they Sometimes experience it. Worrying cannot be controlled by some teaching personnel especially when deadlines are looming in. It is predominantly verbal, as if talking to oneself about possible negative outcomes. In the study of Hirsch and colleagues (2012), they postulated that it is disconcerting to think about negative (worry-related) rather than positive issues. It may be especially beneficial to promote representations of alternative positive results by contrasting in affective valence with the usual negative aspects of concern. In the university, teaching personnel worry much when accreditations are in the offing. A male respondent revealed that it worries him when they submit their institute for accreditation, but they have to do it as his department is a salient part of the university.

Some personnel Sometimes feel extremely happy when they attain success in their undertakings, thereby, feeling extremely happy attained a frequency of 102 or 59.30%. One respondent revealed that they felt extremely happy when their activity with alumni came out really successful especially because many alumni came and actively participated. She said that other occasions were not as successful, hence they had such feelings of extreme joy.

Consequently, it has been generally noted that the respondents and other teaching employees in the university experience less of these aforementioned common signs and symptoms shown in Table 2. It is common knowledge that the teaching personnel in the university, the teachers in college, have a great impact on their students. In the process, they face many challenges. These challenges may result in low back, neck and shoulder pain, tired feet, aching legs, headaches, insomnia and stress. Often, the number one concern for teachers is back pain when standing. If they experience it, seeing the doctor is important. The university clinic and the university physician are accessible in the main campus. They can visit the clinic any time, or if and when they experience any abnormal feelings or situations. The university clinic personnel also have schedules in visiting the external campuses. The teaching personnel assigned in the external campuses may be able to consult as well.

The NCDs and other ailments the personnel are diagnosed with

From among the thirteen diseases listed on Table 3, it is good to note that none of the frequencies went beyond 50, nor did the percentage reach 50%. It shows that only a few respondents are suffering from NCDs.

The indicator with the highest frequency of 46 or 26.74% is high blood pressure or hypertension. Hypertension is the most important modifiable risk factor for all-cause morbidity and mortality worldwide and is associated with increased risk of cardiovascular disease (Oparil *et al.*, 2018).

Fewer than half of those with hypertension are aware of their condition; and many others are aware but not treated or inadequately treated. Successful treatment of hypertension reduces the global burden of disease and mortality. Modifications in lifestyle and prescribed medications can lower blood pressure and decrease the risk of health complications (Carey *et al.*, 2018). The combined genetic, environmental, and social determinants are responsible for hypertension, the leading risk factor for cardiovascular disease. Out of all the factors, lifestyle is the major determinant for the development of hypertension. With regards to lifestyle, food high in salt and sugar tend to increase blood volume and its viscosity by attracting water inwards the blood vessel. Teaching personnel are prone to having an inappropriate eating habits and lifestyle. The reasons for this could be due to lack of food variety in cafeterias, lack of time to prepare for a more nutritious food, to satisfy ones' palate in order to relieve stress, and peer pressure.

The second prevalent disease among the respondents is asthma, with a frequency of 25 Or 14.53%. Asthma is a common long-term inflammatory condition of the pulmonary airways (WHO, 2011). Asthma is a widespread chronic condition globally and that affects about more than 339 million people had Asthma globally in 2016. It is the most prevalent childhood chronic disease, affecting an estimated 7 million children. The pathophysiology of asthma is complicated. It includes inflammation of the airway, occasional obstruction of airflow and bronchial hyper-responsiveness (Morris, 2019). Symptoms include episodes of wheezing, coughing, chest tightness, and shortness of breath. A respondent revealed that when the weather changes, her asthma would suddenly become active. She said she prefers to rest at home when experiencing asthma attacks. She added that she has a maintaining medicine, a metered inhaler, for her ailment.

Diabetes came out with the third highest frequency

of 20 or 11.63%. In a report by WHO (2021), the number of people with diabetes rose from 108 million in 1980 to 422 million in 2014. Prevalence has been rising more rapidly in low- and middle-income countries than in high-income countries. Diabetes or diabetes mellitus refers to a group of disorders that affect the use of blood sugar by the body. Regulation of glucose metabolism is critical for brain physiology and disturbed glucose metabolism in the brain underlies several diseases affecting both the brain itself (Mergenthaler *et al.*, 2013). Moreover, according to Khan and colleagues (2020), with urban lifestyle and the aging population, the prevalence of diabetes mellitus is increasingly growing, posing a great burden on individual well-being and socioeconomic growth. There have been studies of obesity and aging, and other environmental factors contributing to diabetes mellitus.

The next two diagnosed NCDs of the BU teaching workforce with the 4th and 5th highest frequencies are arthritis/rheumatoid arthritis with 18 or 10.47% and obesity with a frequency of 14 or 8.14%. Rheumatic or musculoskeletal conditions comprise over 150 diseases and syndromes, which are usually progressive and associated with pain (WHO, 2021). Out of the conditions, rheumatoid arthritis, osteoarthritis, spinal disorders, and severe limb trauma are the conditions with the greatest impact on society. Rheumatoid arthritis has a prevalence between 0.3% and 1% and is more common in women between the ages of 20 and 40 during adulthood in developed countries.

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health (WHO, 2021). While having the interview, one male respondent verbalized upon checking his body mass index (BMI), that he is slightly obese. He then verbalized that he used to be in the military and that transferring to the academe brought stark physical changes to his body. As postulated by Nammi and co-researchers (2004), obesity is a serious, chronic medical condition associated with a wide variety of symptoms that are serious and life threatening.

Tabish (2017) posited that lifestyle diseases are ailments that are mainly focused on individuals' everyday behaviors. A number of health conditions that can contribute to chronic NCDs, may have life-threatening effects that are induced by activities that detract people from exercising and drive them into a sedentary routine. Lack of physical activity, unhealthy eating and unhealthy relationship between people and their environment, inappropriate body position and disrupted biological clock are the key factors leading to lifestyle diseases.

Findings on the preventive measures to help promote healthy lifestyle and better performance among the teaching workforce of Bicol University are presented

Preventive Measures that may Help Promote Healthy Lifestyle.

on Table 4. Three broad themes emerged: undergo laboratory exams and vaccine, do exercise, eat and drink

Table 2. Diagnosed Non-Communicable Disease and Other Ailments

Diseases	Frequency	Percentage	Rank
High Blood Pressure (Hypertension)	46	26.74	1
Asthma	25	14.53	2
Diabetes	20	11.63	3
Arthritis/Rheumatoid Arthritis	18	10.47	4
Obesity	14	8.14	5
Osteoporosis & other Bone/Joint Diseases	10	5.81	6.5
Cataracts and other Eye Dses.	10	5.81	6.5
Cardiovascular Disease (Heart Disease)	4	2.33	8
Liver Disease	3	1.74	9
Chronic Kidney Disease	2	1.16	11
Cancer (Skin, Lung, Breast, Others)	2	1.16	11
Leukemia & other Hematologic Diseases	2	1.16	11
Chronic Lung Disease	1	0.58	13

healthy, and promote active lifestyle.

Several research participants suggested that teaching personnel in Bicol University must undergo laboratory or diagnostic exams such as Breast Ultrasound, Mammography, Pap Smear, Human Papilloma Virus (HPV) Vaccine and that they must have compulsory annual physical and medical examinations.

In establishing a healthy lifestyle, a proper diet should be taken. A healthy diet can protect the human body against certain types of diseases, in particular NCDs such as obesity, diabetes, cardiovascular diseases, some types of cancer and skeletal conditions (WHO, 2021). Taking vitamins and Food and Drug Administration-approved food supplements may be vital to boost immunity and promote a healthy development. The university teaching workforce may do well not to skip meals and they must eat healthy food all the time.

The other set of preventive measures recommended by the teaching research participants was for the faculty members and other employees in the university to undergo exercises and help themselves to promote active lifestyle. Under this, a lot of recommendations came up. These were: yoga classes, stress debriefing, stress management sessions, spiritual therapy, meditation sessions and others. Yoga classes for one are a notable way to relax and be at peace with oneself and the surroundings. Yoga comprises advice for an ethical lifestyle, spiritual practice,

physical activity, breathing exercises and meditation (Cramer *et al.*, 2017). The BUCN may collaborate with a yoga expert to have such activity in the university and schedule a yoga practice to help BU personnel remain healthy with physical and mental health benefits. Yoga helps to develop power, consciousness and harmony in both the mind and the body (Woodyard, 2011). It can also help them manage stress to prevent devastating effects on the body and mind of a teacher and other professionals. Stretching is a good activity to loosen muscle tension and avoid muscle cramps. It helps in blood circulation and promotes relaxation. The BU personnel should take a break from time to time to stretch while working at the computer.

Conclusion and Recommendations

The BU teaching workforce goes on a daily work without suffering from serious signs and symptoms, and only a few are diagnosed with non-communicable diseases like hypertension and diabetes.

Preventive measures to help promote healthy lifestyle and better performing teaching personnel were recommended. There could be a series of lectures, seminars and fora on the prevention of non-communicable diseases and promotion of healthy lifestyle just to keep everyone abreast of updates and

Table 3. Preventive Measures to Help Promote Healthy Lifestyle

Indicators		
Undergo Laboratory Exams and Vaccination	Do Exercise, Eat and Drink Healthy	Promote Active Lifestyle
<ul style="list-style-type: none"> • Mammography for women and/or Breast Ultrasound • PAP Smear • Regular Blood Test • Compulsory annual physical and medical check up • HPV Screening and HPV Vaccine 	<ul style="list-style-type: none"> • Avoid eating junk food, fatty and salty food • Exercise and drink beer occasionally • Do some sports, jog, walk, Zumba • Proper diet, drink more water, eat more fruits and vegetables • Take food supplements • Frequent physical exercise 	<ul style="list-style-type: none"> • Yoga classes • Stress debriefing • Stress management sessions • Spiritual therapy • Meditation sessions • Learn to manage stress • Unwind if there is too much stress • Should value time outside of work • Maintain a positive outlook in life • Pray and stay away from situations or people that stress you • Engaging oneself in activities that promote physical, mental and emotional wellness • Work-life balance

new strategies. This may be spearheaded by the BU College of Nursing, in partnership with BU College of Medicine. Healthy, dynamic and fun exercises must be done on a regular basis and both teaching and non-teaching employees must be made to attend. Their workload may be put on hold for 30 to 45 minutes, on that specific schedule, to give them the best opportune time to participate. Qualitative studies are also needed so that BU employees and researchers can continue to listen to the views of their colleagues, even of their superiors or subordinates.

Physical and mental exercises, organized by different units of the university may be implemented to complement an university policy on healthy lifestyle.

Acknowledgment

The author verbalizes her great appreciation to Bicol University for the funding of this research. She also expresses her gratitude to BU College of Nursing, to BU Research Development and Management, to BU Publication and Knowledge Management Division, and to the entire administration and staff of BU Office of the Vice President of Research Development and Extension.

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