

RESEARCH ARTICLE

Health Promoting Lifestyle Behaviors of University Employees in Work-From-Home Arrangement during the COVID-19 Pandemic

Naressia D. Seludo-Ballena, RN, MAN, EdD¹, Mary Joan Therese C. Valera-Kourdache, RN, MPH², Jorel A. Manalo, PTRP, MPH³, Alexandra Belle S. Bernal, RN⁴, Mary Joy C. Tiamzon, BS⁵, and Raymund Kernell B. Mañago, RN⁶

Abstract

Since the COVID-19 emerged, a work-from-home (WFH) arrangement was implemented as an infection containment measure among employees. This lifestyle change is bound to affect health-promoting behaviors. The study aims to determine the health-promoting lifestyle behaviors of university employees in a WFH arrangement during the COVID-19 pandemic. This study utilized a quantitative descriptive research design. After consecutive sampling of employees of a state university in Manila, the response rate was 33.1% (395 out of 1,195 eligible respondents), but only 31.8% or 380 respondents completed the validated online questionnaire through Google Forms™ from August to October 2021. The instrument was based on the Health Promoting Lifestyle Profile (HPLP) survey by Walker and Hill-Polerecky (1996). Descriptive data analysis was done via IBM® SPSS® Statistics v22. Majority were females (70.3%) and single (51.8%). Approximately 70% were staying at home with their family. The mean scores for the subscales of inner development, interpersonal relations, and stress management were 3.08 (SD±.24), 3.00 (SD±.30), and 2.70 (SD±.30), respectively. These were observed to be higher than other HPLP subsets. Subscales garnering the lowest mean scores were physical activity at 2.32 (SD±.21), nutrition at 2.68 (SD±.31), and health responsibility at 2.56 (SD±.12). The mean HPLP score of faculty members was the highest at 2.74 (SD±.36) as compared to administrative staff and research extension and professional staff (REPS) with mean scores of 2.73 (SD±.36) and 2.71 (SD±.39), respectively. Overall HPLP scores suggested that the majority (60.8%) practice “good” health-promoting lifestyle behaviors. These findings indicate that the WFH arrangement allows employees to develop social and coping skills while staying in their residences. Whereas limitations to opportunities for a more active lifestyle, availability of nutritious food, and access to health care also contribute to the low HPLP scores. Health promotion and protection strategies such as nurse-led health programs must be instituted to improve and develop the knowledge, skills, and attitude among employees working from home in the aspects of nutrition, physical activity, and health responsibility. Nurses must also use this opportunity to promote occupational health among employees through lifestyle programs in coordination with universities and colleges or other workplaces of similar nature. Health programs must capitalize on the increase in the utilization of social media and the Internet during the pandemic. There is a need for further research to examine associations between the variables in various institutions and settings.

Keywords: *health promotion, lifestyle behaviors, work-from-home, COVID-19 pandemic*

Introduction

In December 2019, a novel coronavirus disease (COVID-19) emerged as a pandemic with over 60 million confirmed cases and over 1.4 million confirmed deaths (as of November 26, 2020); and, the numbers are rising steadily. This caused the majority of the workforce to seek alternative work arrangements

to mitigate the transmission of infection (World Health Organization [WHO], 2020). Policies of most governments focused on allowing the home to be the workplace for many employees in a setup known as work-from-home (WFH) arrangement (Vyas & Butakhieo, 2021). The term WFH has

¹ Assistant Professor, College of Nursing, University of the Philippines Manila, Ermita, Manila, Philippines; Corresponding author; nsballena@up.edu.ph

² Assistant Professor, College of Nursing, University of the Philippines Manila, Ermita, Manila, Philippines; mcvalera@up.edu.ph

³ University Researcher III, Human Resource Development Office, University of the Philippines Manila, Ermita, Manila, Philippines; jamanalo1@up.edu.ph

⁴ University Research Associate II, College of Nursing, University of the Philippines Manila, Ermita, Manila, Philippines; asbernal1@up.edu.ph

⁵ Administrative Assistant II, College of Nursing, University of the Philippines Manila, Ermita, Manila, Philippines; mctiamzon@up.edu.ph

⁶ Research Assistant, College of Nursing, University of the Philippines Manila, Ermita, Manila, Philippines; rbmanago@alum.up.edu.ph

been described in different terms, such as telework, telecommuting, remote work, or e-working. Work-from-home setup refers to the capacity of workers to execute their jobs at flexible workplaces, especially at home, by using technology (Gajendran & Harrison, 2007; Grant et al., 2019)

As a result, the work of employees usually left in their offices and workplaces now tend to be incorporated into the daily household and personal activities, causing unclear boundaries between private life and work. This lifestyle change has an unavoidable effect on the health-promoting behaviors of most employees (Palumbo et al., 2020).

Health behavior is understood to be an individual practice, and it is based on how a person believes and values health to achieve health and wellness. Çelebi et al. (2017) described health behavior as any performed activity or behavior believed to be beneficial to one's well-being. The health behavior of individuals can be influenced by the kind of family health practices, socioeconomic status, physical environment, and workplace environment. The development of healthy lifestyle behaviors is the basis of health maintenance and disease prevention, especially non-communicable diseases (NCDs).

The NCDs are cancer, heart disease, diabetes, stroke, and chronic respiratory diseases, accounting for 68% of all deaths in the Philippines (WHO, 2019). These diseases have been shown to negatively impact the population's health, as well as the economy. The national economy spends an estimated P756.5 billion per year, equivalent to 4.8% of the country's annual gross domestic product (WHO, 2019).

One of the common workplace environments is an academic institution where all kinds of stress and challenges are encountered. A "Health-Promoting University" concept encourages universities to incorporate health into the university culture, processes, and policies to promote the health of the academic community (Suarez-Reyes et al., 2019). Promoting the health of the university community can be done through annual physical examination, laboratory tests, and the presence of a health service clinic with health programs. Employees are, thus, expected to avail these health benefits (Suarez-Reyes et al., 2019).

The purpose of the study is to determine the health-promoting lifestyle behaviors of university employees in a WFH arrangement during the COVID-19 pandemic. Specifically, this study aims to determine the profile of the participants in terms of age, sex, marital status, city/municipality, annual income, employee category, employee type, and years of service in the university; identify the risk factors in terms of tobacco use, alcohol intake, comorbidities, and family history; determine health-promoting lifestyle behaviors in terms of the following dimensions: health responsibility, physical activity, nutrition,

inner development, interpersonal development, and stress management; and, determine dimensions of health-promoting lifestyle behaviors that can be developed into a wellness program. This would provide significant information on whether the academic institution has a culture of health and can promote the well-being of the employees.

Background of the Study

Health Behavior and Healthy Promoting Lifestyle Behaviors

Individuals adopting healthy lifestyle behaviors are capable of improving and sustaining their well-being. To acquire health-promoting behaviors, individuals need to have self-control and should be inclined to consistently perform these behaviors because positive health behaviors should be acquired and maintained to promote health (Çelebi et al., 2017).

Health behaviors differ among the social and organizational environments, and they are influenced by gender, race, age, income, and worksite size. The social environment and organizational culture of a person are related to health behaviors on nutrition, physical activity, and weight control (Tabak, 2015). Employees' behaviors of a healthy lifestyle are at a medium level. In terms of physical activity, males are more active compared to females in displaying healthy lifestyle behaviors. Likewise, displaying healthy lifestyle behavior is inversely proportional to age because positive health behaviors should be acquired and maintained to promote health. Activities, done apart from the working hours, have effects on employees' displaying healthy lifestyle behaviors and their engagement in sports (Aynur et al., 2016). The lack of opportunity and time constraints may also affect the practice of health behaviors (Paudel et al., 2019).

The Concept of a Health Promoting University (HPU)

Major universities worldwide have adopted the approach. A framework for action has been developed guiding universities to become health-promoting. Results demonstrated that universities implement the HPU framework for action with diverse approaches to become a Health Promoting University (Suárez-Reyes et al., 2019).

Work-from-Home Arrangement during the COVID-19 Pandemic

In the Philippines, guidelines on the implementation of flexible work arrangements as a remedial measure due to the ongoing outbreak of COVID-19 were released (Department of Labor and Employment, 2020). Before the pandemic, a WFH arrangement is considered not feasible for heavily populated cities, which includes Manila, because home working requires a dedicated quiet space to execute work duties (Vyas & Butakhieo, 2021). As

a health and safety measure to prevent crowding and curb the spread of the coronavirus, many governments around the world have directed employees to work remotely.

In the international scene, the change of work arrangement showed contrasting results. The home environment was seen to be counter-productive because of exposure to a lot of distractions, and an increase in blurring of work-life boundaries negatively impacts the lifestyle, subjective well-being, and productivity of a person (Pluut & Wonders, 2020). Employees struggled to manage their time between performing domestic responsibilities and workplace duties (Pluut & Wonders, 2020). Conversely, in some instances, WFH was noticeably advantageous for employers and employees because of greater flexibility, reduced commuting time, avoidance of office politics, lesser use of office space, increased motivation, women empowerment, less absenteeism and turnover, and higher job satisfaction and productivity (Laegran, 2008; Mello, 2007; Robertson et al., 2003). In another study, results suggested that a WFH setup increased quality of life but decreased work productivity (Weitzer et al., 2021).

The Workplace Health Model

The study uses the workplace health model as an overarching framework. This is a systematic and comprehensive approach to developing an effective health promotion program in the workplace which includes assessment of employee health, planning and implementation of employee health programs, and systematic evaluation of impact and significance of these activities (Centers for Disease Control and Prevention, 2016). The implications of this study will affect the work of nurses, especially occupational health nurses, in developing innovative strategies to promote desirable lifestyle habits among university employees.

Methodology

Research Design

This study utilized a quantitative descriptive research design. The study population was employees of a state university in Manila through its eight (8) colleges and two (2) non-academic units. Participants were faculty members, administrative staff, and research extension and professional staff (REPS) with corresponding positions as regular employees and non-regular employees, such as lecturers and contractual workers.

Sampling and Population

Consecutive sampling technique was used to cover all respondents who voluntarily participated to improve the study validity and minimize selection bias. The participants in this study were based on the following inclusion criteria: currently

employed in the university, in a WFH set-up for at least a month, and between the ages of 21 years old to 59 years old. This study did not include personnel who were on long-term leave (e.g., study, maternity, or sabbatical leave), visiting and adjunct professors, and employees from the affiliated teaching hospital and affiliated institutions in rural areas. The set inclusion and exclusion criteria intended to capture the health-promoting behaviors of university employees with continuous WFH experience while living in an urban setting where the Internet is considered to be more accessible.

Variables and Instrumentation

A survey questionnaire was utilized for data collection through a web-based platform, i.e., Google Forms™. The tool was adopted from the Health Promoting Lifestyle (HPLP-II) which measured health-promoting behaviors as a multidimensional pattern of self-initiated actions that maintain or enhance the level of wellness of the individual (Walker & Hill-Polerecky, 1996).

The instrument was composed of three parts, namely: (1) the personal data, (2) risk factors, and (3) health-promoting lifestyle (HPLP) behaviors. The HPLP section was a 52-item questionnaire with a 4-point Likert scale with assigned responses: 4-Routinely, 3-Often, 2-Sometimes, and 1-Never. The score of 4 was considered the highest, whereas the score of 1 was the lowest. A total sum of scores was interpreted as follows: Excellent: 169-208, Good: 130-168, Moderate: 91-129, and Poor: 52 to 90. This tool was used to measure the domains of health-promoting behaviors, i.e., health responsibility, physical activity, nutrition, inner development, interpersonal relations, and stress management. Items in the questionnaire were modified to fit into the context of the research setting and study participants.

The survey questionnaire was pretested on 20 respondents in a public higher education institution. A Cronbach's α of 0.93 indicated that the data collection tool has excellent internal consistency and reliability.

Procedure for Data Gathering

Data collection was conducted from August to October 2021 in two phases, pretesting phase for the survey questionnaire and actual data collection for quantitative data. For the first phase, pretesting of the survey questionnaire was conducted in one of the selected higher education institutions. Treatment of data was done to determine the reliability of the survey of the questionnaire and to determine the applicability of the 60 minutes allotted time to answer the survey.

The second phase, actual data collection, was an internet-based Google survey. A 52-item questionnaire was composed of three (3) sections, namely: 1) the personal data, 2) risk factors of non-

communicable diseases and co-morbidities which include personal health history on tobacco, alcohol and health problems and family history, and 3) the health-promoting lifestyle behaviors.

Data Analysis

Data analysis was done via IBM® SPSS® Statistics v22. To analyze the demographic profile and risk factors, percentage and frequency distribution were used. For health-promoting lifestyle behaviors, measures of central tendency were used for data analysis.

Ethical Considerations

Ethics approval was obtained from the UP Manila Research Ethics Board (UPM REB) with protocol approval code, UPM REB 2020-403-01. The researchers sought administrative approval and coordinated with the Human Resource Department for the list of selected participants to be invited to participate in the study. The researchers proceeded with the recruitment of participants by seeking permission from the Chancellor's Office and the Human Resources Department (HRD) for the dissemination of the link to the survey.

The invitation was sent via email, and the survey was accessed through their UP mails. Once accepted, the participants obtained access to the Google survey. The participants' email addresses were collected by the researchers and changed into a code to ensure their privacy.

The participants' informed consent was obtained with the first page of the survey tool containing an explanation of the purpose, significant ethical concerns and other important details about the study, and the extent of their participation while ensuring them that their responses will be kept private and confidential. The researchers adhered to the Data Privacy Act of 2012. Any identifiable information from the encoded data was anonymized when transformed into a written document.

The Informed Consent emphasized that the participation was voluntary and that it would be their choice not to continue with the survey, or to stop answering at any point during the survey, and their responses would not be recorded and counted. Aside from reiterating the eligibility criteria, it was stressed that there would be no time limit in answering. The participants were provided access to the survey if they wish to continue after an hour, and follow-up notifications were sent as reminders. Likewise, the participants were informed that access to the study results would be given upon contacting the principal investigator by email. The details of the principal investigator and the chair of the UPM REB Panel could be found at the end of the Informed Consent page, before the statement of consent, wherein they would have to click "YES", if participants agree, or "NO" if they decide otherwise, and

then exit. The Google survey forms that followed the page of the Informed Consent marked the start of the data collection.

All data collected in this online survey were stored in a computer that is password-secured and could only be accessed by the researchers. If there would be a physical copy of the survey questionnaires, these were kept in a cabinet with a lock in the researcher's room in UP Manila College of Nursing. In publishing the findings of this study, the anonymity of the respondents was maintained. Computers used for analysis were not connected to the internet and no information of the respondents was uploaded. The soft and physical copies were scheduled for deletion and shredding five years after publication.

Results

The response rate was 395 (33.1%) out of 1,195 eligible respondents, but only 380 (31.8%) respondents completed the survey. The demographic profile is presented in Table 1. Majority of the participants were females (70.3%). In terms of marital status, the proportion was highest for single at 51.8%, while 43.2% were married. Approximately, 71.1% of the respondents were staying at home, while 27.1% were renting a condominium unit, apartment, or dormitory. For the employment category, 49.7% were administrative staff, 28.9% were faculty members, and 21.3% were from REPS.

In terms of employment-related profile, the average length of service at the university was 10.8 years ($SD \pm 9.7$). Based on the distribution of participants according to the annual income, majority had an income of less than PHP500,000 as 33.9% of them reported receiving an annual income of PHP250,000 to PHP499,999, and 27.6% responded that their yearly income ranges from PHP100,000 to PHP249,999.

The characteristics of the respondents based on lifestyle-related risk factors, presence of morbidity within the last 12 months, and family history of morbidity are presented in Table 2. Only 13.4% reported having smoked cigarettes or tobacco products, and 68.9% had experienced consuming alcoholic beverages at one point in their lives.

Within the past 12 months, 243 (63.9%) did not experience any disease. Among those who have comorbidities, NCDs seemed to be more common as hypertension was the most frequently reported condition at 20.3%, followed by asthma, diabetes, heart disease, and cancer at 10.8%, 5.8%, 1.6%, and 1.3%, respectively. Communicable diseases such as pneumonia (1.3%), pulmonary tuberculosis (0.5%), and COVID-19 (1.1%) have also been reported.

Majority of the participants have a family history of NCDs. Hypertension (74.5%) was the most common condition in the family, followed by diabetes mellitus (51.1%), heart disease

Table 1. Demographic Characteristics of the Respondents (N=380).

Demographic Characteristic	Frequency (n)	Percentage (%)
Sex		
Female	267	70.3
Male	112	29.5
Unknown	1	.3
Marital Status		
Single	197	51.8
Married	164	43.2
Civil Law/Live-in	10	2.6
Separated	6	1.6
Widowed	3	.8
Living Arrangement		
Staying at own home	270	71.1
Renting a condo/apartment/ dormitory	103	27.1
Staying in a friend's/relative's place	7	1.8
Annual Personal Income		
Less than Php100,000	53	13.9
Php100,000 to Php249,999	105	27.6
Php250,000 to Php499,999	129	33.9
Php500,000 to Php699,999	40	10.5
Php700,000 to Php999,999	29	7.6
≥ Php 1M	24	6.3

Table 2. Distribution of the Respondents According to Presence of Risk Factors (N=380).

Risk Factors	Frequency (n)	Percentage (%)
Tobacco Use		
Ever-smoked	51	13.4
Never smoked	329	86.6
Alcohol Intake		
Consumed alcohol	262	68.9
Never consumed alcohol	118	31.1
Co-morbidities		
Hypertension	77	20.3
Asthma	41	10.8
Diabetes mellitus	22	5.8
Heart Disease	6	1.6
Cancer	5	1.3
Pneumonia	5	1.3
Pulmonary tuberculosis	2	0.5
Family History of Morbidity		
Hypertension	283	74.5
Diabetes mellitus	194	51.1
Heart Disease	126	33.2
Asthma	124	32.6
Cancer	120	31.6
Pulmonary tuberculosis	46	12.1
Pneumonia	42	11.1

(33.2%), bronchial asthma (32.6%), and cancer (31.6%). Communicable diseases such as pulmonary tuberculosis (12.1%) and pneumonia (11.1%) among participants' relatives were also reported.

The summary of responses according to the HPLP subscale is shown in Table 3. The subscale for inner development had the highest mean score at 3.08 (SD±.24) followed by interpersonal relations at 3.00 (SD±.30). Subscales garnering the lowest mean scores were physical activity at 2.32 (SD±.21), nutrition at 2.68 (SD±.31), and health responsibility at 2.56 (SD±.12). These findings indicated that the WFH arrangement allowed employees to develop social and coping skills while staying in their residences. Whereas limitations to opportunities for a more active lifestyle, availability of nutritious food, and access to health care also contributed to the low HPLP scores.

Furthermore, the data also revealed that the mean HPLP scores of the faculty members was 2.74 (SD±.36), which indicated that this group had the highest HPLP scores. As shown in Table 4, the administrative staff garnered a mean score of 2.73 (SD±.36), whereas the REPS had a mean score of 2.71 (SD±.39). The REPS group had the lowest HPLP scores.

Overall HPLP scores revealed that majority (60.8%) practice "good" health-promoting lifestyle behaviors. This was followed by "moderate" HPLP levels at 25.8% and "excellent" at 12.4. Only 4 (1.05%) showed "poor" lifestyle behaviors

highest mean HPLP scores, followed by the administrative staff. The REPS group has the lowest mean HPLP score among the three groups, which yields an implication that this group needs stronger support in terms of improving lifestyle choices and health promotion. The high mean scores of faculty members could be attributed to their preexisting knowledge of desirable health behaviors, especially since the university where the study was conducted offers health science programs.

Among the subscales of HPLP, results reveal that respondents have the highest mean scores on inner development and followed by interpersonal relations. These scores indicate that during the work-from-home arrangement, respondents demonstrate high levels of inner peace by welcoming possibilities of creating new options for becoming something more and going beyond who and what they are. High levels of interpersonal relations during the pandemic indicate that the respondents can sustain or improve communication skills that involve sharing thoughts and feelings with others (Walker & Hill-Polerecky, 1996).

In contradiction, other reports suggest that quarantine measures induce problems with mental health and coping abilities. An increase in stress and anxiety is observed among the participants during the lockdown period (Chopra et al., 2020). Participants at risk for clinical depression, as well as the incidence of depression, increased throughout the pandemic from March to July 2020 (Giuntella et al., 2021). The containment measures represented a substantial impact on human health with social and economic repercussions (Ammar et al., 2020a,b; Deschasaux-Tanguy et al., 2020; Reyes-Olavarría et al., 2020). Negative health outcomes, especially unhealthy lifestyle behaviors and significant increases in the prevalence of psychosocial and emotional disorders were observed (Ammar et al. 2020b; Di Renzo et al., 2020).

Discussion

This study examines the health-promoting lifestyle behaviors of employees of a state university in Manila in a work-from-home arrangement during the COVID-19 pandemic. Among the employee categories, data show that faculty members garner the

Table 3. Summary of Responses to the HPL Scale (N=380).

HPLP Subscale	Mean	SD
Health Responsibility	2.56	±0.12
Physical Activity	2.32	±0.21
Nutrition	2.68	±0.31
Inner development	3.08	±0.24
Interpersonal Relations	3.00	±0.30
Stress Management	2.70	±0.30

Table 4. Distribution of the Respondents according to HPLP Scores (N=380).

HPLP Total Scores	Frequency (n)	Percentage (%)
Poor (52 to 90)	4	1.05
Moderate (91 to 129)	98	25.8
Good (130 to 168)	231	60.8
Excellent (169 to 208)	47	12.4

Lower mean scores are noted in the HPLP subscales of physical activity, nutrition, and health responsibility, with physical activity being the lowest. These scores indicate that the respondents require interventions and health programs that will boost their skills and commitment in paying attention to their own health, engaging in regular participation in light, moderate, and/or vigorous activity for fitness and health, and planning and executing a diet regimen using a knowledgeable selection and consumption of foods for healthy sustenance (Walker & Hill-Polerecky, 1996).

In support of the study findings, other studies similarly report a negative change in lifestyle, decrease in physical activity, and an increase in daily screen time are observed particularly among men and in upper-socioeconomic classes (Chopra et al., 2020; Pluut & Wonders, 2020). Average daily steps also significantly dropped, and daily screen time increased (Giuntella et al., 2021). Perception of noticeable weight gain was also noted (Di Renzo, 2020). There is reduced accessibility to grocery shopping that resulted in decreased consumption of fresh foods, in favor of highly processed convenience foods and “comfort food” rich in sugar and fat (Yilmaz & Gökmen, 2020; Rodríguez-Martín & Meule, 2015).

In contrast, other reports show that healthy meal patterns improved, and unhealthy foodstuffs were reduced among people below 30 years (Chopra et al., 2020; Pluut & Wonders, 2020). Some respondents turned to an organic diet, purchasing fruits and vegetables. An increase in physical activity is also described, and the percentage of those who train five or more days a week increased (Di Renzo et al., 2020).

Limitations of the Study

The study was conducted in one state university in the urban setting of Manila. Therefore, the results are not generalizable to other institutions and organizations beyond the research setting. To our knowledge, this is the first study in the Philippines to understand the extent of lifestyle-related behaviors during this global health phenomenon. There is a need for further research to examine associations and correlations between the work-from-home arrangement and lifestyle behaviors among Filipino employees in various institutions and settings.

Conclusions

The results from this study establish that health-promoting lifestyle-related behaviors among the respondents are mostly at the lower levels during the work-from-home arrangement brought about by the COVID-19 pandemic. The HPLP subsets of inner development and interpersonal relations are observed to be higher than other subsets. In contrast, HPLP subsets of nutrition, health responsibility, and physical activity show lower scores among the respondents.

These observations have potential implications in terms of health programs to support weaker areas of HPLP. Recommendations include instituting health promotion and protection strategies such as nurse-led health education programs to improve and develop the knowledge, skills, and attitude among employees working from home in the aspects of nutrition, physical activity, and health responsibility. Nurses must also use this opportunity to promote occupational health among employees through lifestyle programs in coordination with universities and colleges or other workplaces of similar nature. Noting that most of the respondents are middle-aged adults, health programs must capitalize on the increase in the utilization of social media and the Internet during the pandemic to disseminate knowledge, develop positive attitudes, and provide specific nursing action points to support healthy lifestyle habits amidst the global situation.

Declaration of Conflict of Interest.

The researchers declare no conflict of interest.

References

- Ammar, A., Brach, M., Trabelsi, K., Chtourou, H., Boukhris, O., Masmoudi, L., Bouaziz, B., Bentlage, E., How, D., Ahmed, M., Müller, P., Müller, N., Aloui, A., Hammouda, O., Paineiras-Domingos, L. L., Braakmanjansen, A., Wrede, C., Bastoni, S., Pernambuco, C. S., & Hoekelmann, A. (2020a). Effects of COVID-19 home confinement on eating behavior and physical activity: results of the ECLB-COVID19 international online survey. *Nutrients*. <https://doi.org/10.3390/nu12061583>.
- Ammar, A., Brach, M., Trabelsi, K., Chtourou, H., Boukhris, O., Masmoudi, L., Bouaziz, B., Bentlage, E., How, D., Ahmed, M., Müller, P., Müller, N., Aloui, A., Hammouda, O., Paineiras-Domingos, L. L., Braakmanjansen, A., Wrede, C., Bastoni, S., Pernambuco, C. S., & Hoekelmann, A. (2020b). Effects of home confinement on mental health and lifestyle behaviors during the COVID-19 outbreak: insight from the “ECLB-COVID19” multi countries survey. *MedRxiv*. <https://doi.org/10.1101/2020.05.04.20091017>.
- Aynur, Y. G. (2016). Health Promoting Lifestyle Behaviors Of Employees In Public Sector. *ResearchGate*.
- Çelebi, E. G. (2017). Determination of Healthy Lifestyle Behaviors of High School Students. *Universal Journal of Educational Research* 5(8), 1279-1287.
- Centers for Disease Control and Prevention. (2016). *Workplace Health Model*. Centers for Disease Control and Prevention: <https://www.cdc.gov/workplacehealthpromotion/model/index.html>.
- Chopra, S. R. (2020). Impact of COVID-19 on lifestyle-related behaviours- a cross-sectional audit of responses from nine

- hundred and ninety-five participants from India. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*. <https://doi.org/10.1016/j.dsx.2020.09.034>.
- Department of Labor and Employment. (2020). *Labor Advisory No. 09-20 Guidelines on the Implementation of Flexible Work Arrangements as Remedial Measure due to the Ongoing Outbreak of Coronavirus Disease 2019 (COVID-19)*. Department of Labor and Employment: <https://www.dole.gov.ph/news/labor-advisory-no-09-20-guidelines-on-the-implementation-of-flexible-work-arrangements-as-remedial-measure-due-to-the-ongoing-outbreak-of-coronavirus-disease-2019-covid-19>.
- Deschasaux-Tanguy, M., Druet-Pecollo, N., Esseddik, Y., Szabo de Edelenyi, F., Alles, B., Andreeva, V. A., Baudry, J., Charreire, H., Deschamps, V., Egnell, M., Fezeu, L. K., Galan, P., Julia, C., Kesse-Guyot, E., Latino-Martel, P., Oppert, J. M., Peneau, S., Verdoot, C., Hercberg, S., & Touvier, M. (2020). Diet and physical activity during the COVID19 lockdown period (March-May 2020): results from the French NutriNet-Sante cohort study. *MedRxiv*. <https://doi.org/10.1101/2020.06.04.20121855>.
- Di Renzo, L., Gualtieri, P., & Pivari, F. (2020). Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *J Transl Med* 18, 229. <https://doi.org/10.1186/s12967-020-02399-5>.
- Gajendran, R. S., & Harrison, D. A. (2007). The Good, the Bad, and the Unknown About Telecommuting: Meta-Analysis of Psychological Mediators and Individual Consequences. *The Journal of Applied Psychology* 92 (6), 1524–1541. <https://doi.org/10.1037/0021-9010.92.6.1524>.
- Giuntella, O. H. (2021). Lifestyle and mental health disruptions during COVID-19. *Proceedings of the National Academy of Sciences of the United States of America*. <https://doi.org/10.1073/pnas.2016632118>.
- Grant, C. A., Wallace, L. M., Spurgeon, P. C., Tramontano, C., & Charalampous, M. (2019). Construction and Initial Validation of the e-Work Life Scale to Measure Remote eWorking. *Employee Relations* 41 (1), 16–33. <https://doi.org/10.1108/ER-09-2017-0229>.
- Laegran, A. S. (2008). Domesticating home anchored work: negotiating flexibility when bringing ICT based work home in rural communities. *Geoforum* 39(6), 1991–1999. <https://doi.org/10.1016/j.geoforum.2008.06.007>.
- Mello, J. A. (2007). Managing Telework Programs Effectively. *Employee Responsibilities and Rights Journal* 19 (4), 247–261. <https://doi.org/10.1007/s10672-007-9051-1>.
- Palumbo, R., Manna, R., & Cavallone, M. (2020). Beware of side effects on quality! investigating the implications of home working on work-life balance in educational services. *TQM J*. <https://doi.org/10.1108/TQM-05-2020-0120>.
- Paudel, S. P. (2019). Analysis of Health Promoting Lifestyle Behaviors among Nursing Students from a College of Health Sciences Academy in Kathmandu, Nepal. *Middle East Journal of Nursing*, 3-10.
- Pluut, H., & Wonders, J. (2020). Not Able to Lead a Healthy Life When You Need It the Most: Dual Role of Lifestyle Behaviors in the Association of Blurred Work-Life Boundaries With Well-Being. *Frontiers in Psychology* (11), <https://doi.org/10.3389/fpsyg.2020.00021>.
- Reyes-Olavarria, D., Latorre-Roman, P. A., Guzman-Guzman, I. P., Jerez Mayorga, D., Caamaño-Navarrete, F., & Delgado-Floody, P. (2020). Positive and negative changes in food habits, physical activity patterns, and weight status during COVID-19 confinement: associated factors in the Chilean population. *Int J Environ Res Public Health* 17(15), 1–14. <https://doi.org/10.3390/ijerph17155431>.
- Robertson, M. M., Maynard, W. S., & McDevitt, J. R. (2003). Telecommuting: Managing the Safety of Workers in Home Office Environments. *Professional Safety* 48(4), 30–36.
- Rodríguez-Martín, B. C., & Meule, A. (2015). Food craving: new contributions on its assessment, moderators, and consequences. *Front Psychol* 6. <https://doi.org/10.3389/fpsyg.2015.00021>.
- Suárez-Reyes, M. S. (2019). How do universities implement the Health Promoting University concept? *Health Promotion International* 34(5), 1014-1024. <https://doi.org/10.1093/heapro/day055>.
- Tabak, R. G. (2015). Workplace Social and Organizational Environments and Healthy-Weight Behaviors. *PLoS One*. <https://doi.org/10.1371/journal.pone.0125424>.
- Vyas, L., & Butakhieo, N. (2021). The impact of working from home during COVID-19 on work and life domains: an exploratory study on Hong Kong. *Policy Design and Practice*, 4(1), 59-76. <https://doi.org/10.1080/25741292.2020.1863560>.
- Walker, S.N., & Hill-Polerecky, D.M. (1996). Psychometric evaluation of the Health-Promoting Lifestyle Profile II. *University of Nebraska Medical Center*.
- Weitzer, J. P. (2021). Working from home, quality of life, and perceived productivity during the first 50-day COVID 19 mitigation measures in Austria: a cross sectional study. *International Archives of Occupational and Environmental Health*. <https://doi.org/10.1007/s00420-021-01692-0>.
- World Health Organization (2019). *Investment in noncommunicable diseases prevention and control will save lives and contribute to the Philippines saving up to 4.8% of annual GDP*. World Health Organization-Western Pacific Philippines: <https://www.who.int/philippines/news/detail/29-10-2019-investment-in-noncommunicable-diseases-prevention-and-control-will-save-lives-and-contribute-to-the-philippines-saving-up-to-4.8-of-annual-gdp>.

World Health Organization (2020). *COVID-19 Public Health Emergency of International Concern (PHEIC) Global Research and Innovation Forum*. World Health Organization: [https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-\(pheic\)-global-research-and-innovation-forum](https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-(pheic)-global-research-and-innovation-forum)

Yilmaz, C., & Gökmen, V. (2020). Neuroactive compounds in foods: occurrence, mechanism, and potential health effects. *Food Res.* <https://doi.org/128:108744>.

ABOUT THE AUTHORS



Naressia S. Ballena, RN, MAN, EdD is the lead principal investigator of the research project and a former faculty of the University of the Philippines Manila (UPM) College of Nursing. She was appointed as the ISO Lead QMS Internal Auditor of UPM. During her stay in the UPCN, she

was a member of the Maternal and Child Health Nursing specialty group. At present, she is a faculty member of Centro Escolar University Manila. Her research interests include health promotion, maternal and child nursing, and nursing leadership, management and governance. She presents papers solely and collaboratively authored in international research fora. She published research articles.



Mary Joan Therese C. Valera-Kourdache, RN, MPH obtained her Bachelor's degree in Nursing and Master of Public Health with a major in Health Promotion and Education from the University of the Philippines Manila (UPM). She survived five brain surgeries to

remove a brain tumor in 1997 and continues to teach at UPM College of Nursing and supervise students in the wards of the Philippine General Hospital and in the community health centers. She is a published writer and researcher.



Jorel A. Manalo, PTRP, MPH is currently the Supervising Administrative Officer of the Human Resource Development Office (HRDO), UP Manila. He provides comprehensive quality services in terms of recruitment, development, and welfare. His research interests are on workplace

bullying and organizational development. He co-authors several articles published in peer-reviewed journals with topics on health financing schemes and pharmacy DOTS Initiative. He hopes to contribute to a Healthy University workplace that applies Work-Life Balance.



Alexandra Belle S. Bernal, RN is a University Research Associate II of the College of Nursing, University of the Philippines Manila. She is currently pursuing her Master of Health Research Ethics degree at the University of Malaya, Malaysia - a collaborative master's

program offered between the Faculty of Medicine, Universiti Malaya and the Johns Hopkins Berman Institute of Bioethics (with the support of the U.S. National Institutes of Health, Fogarty International Center). Her research interests revolve around nursing informatics, perioperative nursing, and ethical conduct of research. She hopes to promote ethically sound and responsible research culture among future undergraduate and graduate students.



Mary Joy C. Tiamzon, BS is an administrative assistant of the Research and Creative Writing Program at the University of the Philippines College of Nursing. She is currently taking her Diploma in Public Management at UP NCPAG with a specialization in

organization studies. She hopes to promote research that will benefit the employees and organizations through collaboration efforts.



Raymund Kernell B. Mañago, RN is an anaesthetic and recovery nurse at the Royal Victoria Infirmary in Newcastle upon Tyne, United Kingdom. He graduated from the University of the Philippines College of Nursing as cum laude and Class Valedictorian. He is the

board topnotcher of the Nurse Licensure Examination in November 2017. His collaborative research work is focused on innovations in nursing care and health promotion. He internationally presented a project on telemedicine for children with cancer which he coauthored.

Acknowledgment

The authors recognize the substantial support of the University of the Philippines Manila – National Institutes of Health as the funding agency of this study under grant number NIH 2021-03.