ORIGINAL ARTICLE

A Cross-sectional Study on Factors of Well-being of UP College of Medicine Students from SY 2017-2018

Josefina T. Ly-Uson, MD and Victoria Patricia C. de la Llana, MD

College of Medicine, University of the Philippines Manila

ABSTRACT

Objectives. Psychological distress is more prevalent among medical students compared to the general population. This study describes the factors which contribute to the well-being of medical students enrolled in the UP College of Medicine, and their relationship with the students' demographic characteristics.

Methods. The modified Cardiff Medical School Well-being Questionnaire was administered to 598 students of the UP College of Medicine. The following domains were explored: acquisition of knowledge and skills, work-life balance, demands, travel and orientation, safety, culture, finances, perceived support in academics and perceived support in personal/health matters. Students also shared their insights regarding potential areas of change to enhance their engagement and performance. Demographics are presented as frequency and percentage; the relationship between the demographic characteristics and factors was analyzed through multiple linear regression.

Results. The mean age of the medical student participants was 22.6 years, with an almost equal male to female ratio. The majority were single, Roman Catholic, lateral entrants, having a high socioeconomic status, and with residence in the City of Manila while in training. Medical students were least concerned about culture, safety at work, travel and orientation, and perceived support for academics. However, they were most concerned about work-life balance, demands, finance, and perceived support on personal and health matters.

Conclusion. Medical students expressed more concern about work-life balance, demands, finance, and perceived support on personal and health issues, and marked less concern about culture, safety at work, travel and orientation, and perceived support for academics. Across all domains, there are areas for improvement and limitations which can be further explored in future studies.

Keywords: psychiatry, mental health, medical students, well-being, education

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Corresponding author: Josefina T. Ly-Uson, MD
College of Medicine
University of the Philippines Manila
547 Pedro Gil Street, Ermita, Manila 1000, Philippines
Email: jtlyuson@up.edu.ph
ORCiD: https://orcid.org/0009-0008-8003-3852

INTRODUCTION

Medical school is likened to trial by fire, meant to hone fresh-faced first year students into competent physicians after years of training. Such an environment is fertile ground for the poor quality of life, physical and mental health problems[1-3]; it makes "medical students vulnerable to depression, anxiety, and burnout,"[4] as well as suicidal ideations.[5]

Well-Being

Well-being has a "major impact on health and performance amongst medical students internationally"[1]; it includes the "presence of positive emotions and moods, the absence of extreme negative emotions, satisfaction with life, fulfillment, and positive functioning." In the context of medical training, it is "the balance between the medical school educational and clinical demands and the medical

students' response to learning alongside a healthy lifestyle and social interactions that are central to well-being."

Well-being of Medical Students

In Australia and Nepal, medical students reported higher rates of distress in comparison to the general population.[2,3] Female students had higher levels of psychological distress and diagnoses of mental illness, such as depression, anxiety, and suicide attempts compared to their male peers.[2] They are more likely to have suicidal thoughts in the past 12 months (20.5% vs 17.1% in males) and had higher levels of burnout in the domains of emotional exhaustion, cynicism, and low professional efficacy. The subgroup of 22 indigenous students" appeared to have poor mental health in comparison to their peers." Locally, the "*iskolar ng bayan*" (students of the state-funded medical college) face higher demands and expectations.

Students with a diagnosed mental condition reported that this harmed them "personally, at work and university."[2] Four in ten medical students "believe that a doctor with a mental health disorder is less competent, and 41.5% of doctors with a history of anxiety or depression are less likely to be appointed than other doctors."

Good mental health, resiliency, and prevention of burnout translate to optimal functioning as they train to become effective physicians.[4] Educators can better support them through these formative and challenging years by understanding the physical, psychological, social, and cultural environment in medical schools and how it relates to well-being.

Factors that Contribute to Medical Student Well-Being

In a 2013 study by Cohen et al, the Cardiff Medical School Well-being Questionnaire was developed and evaluated to understand factors contributing to medical student well-being. The questionnaire is composed of 47 statements that rate (on a Likert scale) their perspectives on risks associated with studying medicine. This multimodal study also conducted focus group discussions among medical students to better elucidate other factors that were missed in the questionnaire.[1]

Eight "domains of risk" were found, which included:

- acquisition of knowledge and skills,
- work-life balance,
- demands,
- travel and orientation,
- safety,
- culture,
- perceived support in academics, and
- perceived support in personal/health matters.

Different year levels differed in their ratings of each domain except for perceived support in both academic and personal or health domains. Perceived support in academics was rated the highest and perceived support for personal and health issues was rated lower. The ratings across all domains were noted to increase with higher year levels in medical school in perception of support, while the culture domain scores became lower as years progressed. In the focus groups, it was found that the following areas were also of importance to medical students: finance, non-academic demands of medical training, academic pressures, work-life balance, and health.[1]

This study was limited by its cross-sectional nature; it did not document well-being changes through the years of medical school, and did not use objective measures of well-being.[1] Although causality was not established, the data still serves as a knowledge base on which factors contribute to medical student well-being.

Acquisition of Knowledge and Skills, Academic Pressures

Students are subjected to hours of lectures which translate to hours of examinations in the first few years. As they advance to higher year levels, alongside academic work, they are thrown into the whirl of activity in the wards and emergency care units, taxing them physically, mentally, and even emotionally.[6,7] Students find that their previous academic achievements, learning styles, and coping mechanisms are ineffective in the stresses of medical school.[3,4]

Demands

Students are expected to meet physical demands, to have the strength and stamina to physically attend classes and clinical rotations.[1,6] They also need to meet the mental demands: to concentrate, to balance academic load, and to meet assessment standards and professors' expectations. "Academic assessment is associated with psychological distress among medical students," and must be confirmed in future studies.[7]

Work-Life Balance

"The concept of work-life balance is based on the notion that paid work and personal life should be seen less as competing priorities than as complementary elements of a full life."[8] A career in medicine, even a beginning one, is synonymous with missing holidays, occasions, and even a good night's sleep. A student's time and energy is divided between medical school and non-academic matters, rest, and recreation.[1,8,9] "Reduction in emotional exhaustion was independently associated with reduced number of work hours in a week."[4]

Culture

Organizational culture refers to the "unwritten rules and corporate norms that dictate how things are done, how things work, what is to be done and what is valued in the organization."[10] These comprise what is called the "hidden curriculum" in medical schools. Illness and distress imply weakness that must not be seen in doctors; feelings of

dehumanization and isolation must be accepted while in training.[1,8]

Travel, Orientation, Accommodations

Travel is necessary for most students; whether staying in dormitories or condominiums nearby, or being sent out to do outside rotations or community work. Issues include travel time, mode of travel, arranging transport, travel expenses, safety when traveling, and accommodations.[1,3] When rotating in other hospitals or places of clinical activities, navigating that new environment is also a concern.[1]

Safety

Safety concerns while in medical training include: travel safety and occupational safety issues (such as needle stick injuries), working in groups or working alone, etc.[1]

Perceived Support in Academics

Medical students are generally expected to sink or swim when it comes to academic demands. In a study done with Czech medical students educated in English, it was noted that psychological distress is associated with poor academic performance, with a possible bidirectional relationship.[11]

Perceived Support in Personal/Health Matters

Personal life stressors and health problems may also affect students. (These include illness, death in the family, family problems, high parental expectations, personal relationships, pregnancy and childbirth.)[1,6] Time, attendance, or practical adaptations help mitigate their negative effects.[1]

Physicians who have healthy personal habits are more likely to encourage patients to do the same, with a possibility of improving patient outcomes. Student well-being programming was evaluated (including efforts towards stress reduction, mentoring support, exercise, diet, drinking beverages with alcohol, smoking, and mentoring, topics on prevention in the medical school curriculum, and support of the Dean), finding that there was consistent support from Deans and medical students for the medical schools' health promotion programs, but resources are limited, and programs small and reactive.[12]

Finance

Travel, uniforms, textbooks, and medical equipment are expensive.[1] Part-time work is difficult for medical students. Student loans are not common in the UP College of Medicine setting. Scholarship grants are available, and are subsidized by the government in terms of tuition fees and stipends from various sponsors. Students may apply for tuition fee discounts and are approved based on how their annual household income is classified in the Socialized Tuition System (STS) brackets: Bracket A (over Php1M), Bracket B (Php500,001-Php1M), Bracket C (Php250,001-Php500,000), and Bracket D (Php135,000-Php250,000).

Figure 1 illustrates the proposed relationships among medical student demographic characteristics, factors contributing to well-being, and medical student well-being.[1]

OBJECTIVES

General Objective

To describe the factors which contribute to the well-being of medical students enrolled at the University of the Philippines Manila College of Medicine (UPCM) for the school year 2017-2018.

Specific Objectives

1. To describe the demographic profile of UP College of Medicine students in terms of:
   a. age
   b. sex
   c. civil status
   d. year level
   e. city/town of residence while in training
   f. city/town of origin
   g. religion
   h. pre-medicine course
   i. level of academic achievement in pre-medical course
   j. direct entrants or lateral entrants
   k. socioeconomic status

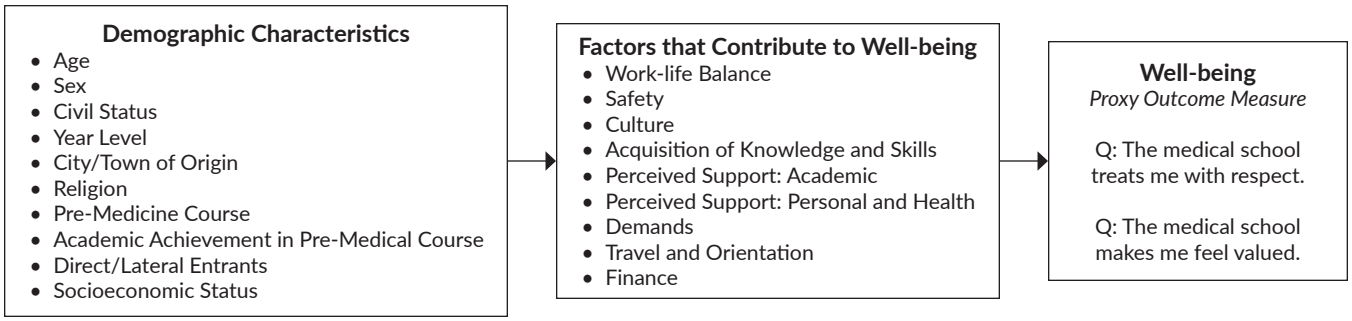

Figure 1. Concept map.

2. To describe the factors which contribute to the well-being of medical students currently enrolled in the UP College of Medicine using the modified Cardiff Medical School Well-being Questionnaire, in terms of:
   a. demands
   b. work-life balance
   c. travel and orientation
   d. safety at work
   e. acquisition of knowledge and skills
   f. culture
   g. perceived support: academic
   h. perceived support: personal/health
   i. finance

3. To describe the relationship between demographic characteristics of UP College of Medicine students and factors that contribute to student well-being

MATERIALS AND METHODS

Study Design

The study is a cross-sectional study.

Study Setting

This study was conducted at the University of the Philippines College of Medicine. It is a state university established in 1905. It offers the Integrated Liberal Arts and Medicine (INTARMED) Program, as a straight 7-year program or those with a bachelor's degree as lateral entry point, as well as the Medical Doctor-Doctor of Philosophy Program, to students.

Target Population

The study population comprised of students enrolled in the UPCM for Academic Year 2017-2018, from Learning Unit III (first year medicine proper) to Learning Unit VII (internship year), as well as medical students who are part of the MD-PhD program.

Sample Size Computation

Using Epi Info version 7, the minimum sample size requirement was at least 254 based on the percentage of psychological distress found in medical students = 20.9% (3) with margin of error = 5%, and confidence level = 95%

Inclusion Criteria

The following were eligible for participation in this study:

1. Students aged 18 to 30 years old
2. Students officially enrolled in the UPCM from levels LU III to LU VII
3. Students with informed consent to voluntarily participate in the study

Exclusion Criteria

The following were excluded from participation in the study:

1. Students not willing to participate in the study by refusing to sign the informed consent
2. Post-graduate interns, or lateral entrants from other medical institutions
3. Learning Unit I and II students

Withdrawal Criteria

Participants may choose to withdraw from the study at any time.

Questionnaire

The Cardiff Medical School Well-being Questionnaire consists of 47 items divided into eight domains and randomly distributed in six sections (Appendix).

Prior correspondence with the primary author of the questionnaire, Dr. Debbie Cohen of the Cardiff University School of Medicine, was done for permission to use and revise the questionnaire according to what is applicable to the UPCM medical students and the institution. Finance was a domain identified to have been overlooked in the previous study, hence items pertaining to finance were added to the original version to cover monetary issues and funding problems that medical students also encounter.[1] An item regarding sleep and nutrition was likewise added. Proxy outcome measures of well-being are incorporated in the tool and focus on two items: value and respect. The modified version has a total of 50 items answerable using a 5-point Likert scale, answerable by Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree, and N/A. The Appendix lists the questionnaire items classified based on the domains they represent, both the original scale and the additional items.

Some items were phrased positively and negatively, and "all questions were recoded and rescaled, to produce 1-5 mean values, where 1 was a low score and 5 a high score." Figure 2 summarizes the domain score interpretations, adapted from Figure 7 of the original study of Dr. Cohen and her team.[1]

Construct Validity

The modified questionnaire was tested for face and content validity through a pilot or pre-test and debriefing with a group of 8 medical students. Debriefing involved checking whether each of the items was found to be appropriate or problematic in terms of comprehension of idea, the wording of question, or the response choices. Suggestions for improvements by the respondents were recorded and implemented accordingly.

Data Collection

Total enumeration was used in recruitment, with a list of students obtained from the UP College of Medicine. Paper copies of the questionnaire were distributed to the students from various year levels during plenary meetings, classes and

Domains	Score of 1	Score of 5
Knowledge	High concern about knowledge and skills acquisition	No concern about knowledge and skills acquisition
Work-life balance	Belief that work-life balance is very poor	Belief that has good work-life balance
Demands	Feeling that unable to cope with demands of the course	Able to cope well with the demands of the course
Travel	High concern about travel	No concern about travel
Safety	High concern about safety during their training	No concerns about safety during their training
Culture	Poor culture no support	Good supportive culture
Academic support	Feeling that not supported	Feeling well supported
Personal support	Feeling that not supported	Feeling well supported

Figure 2. Domain Score Interpretations

block activities. The questionnaire contained the informed consent form, and only those who gave their consent were requested to complete the questionnaire.

Statistical Analysis

Data analysis was performed in Stata SE version 13. Statistical analysis included both descriptive and inferential statistics. For descriptive statistics, quantitative variables (e.g., age) were summarized as mean and standard deviation, while qualitative variables (e.g., sex, civil status, etc.) were tabulated as frequency and percentage. For inferential statistics, one set of multiple linear regression was done to analyze the relationship of demographic characteristics with each of the factors contributing to well-being (e.g., demands, work-life balance, travel and orientation, etc.). The level of significance (alpha level) was set at 5%.

Ethical Considerations

The study followed the National Ethical Guidelines published by the Philippine Health Research Board in 2011, the Helsinki Declaration, the GCP and CIOMS international ethical guidelines. The research proposal, data collection tools and Informed Consent Form was submitted for ethical review and approval by the UPM Research and Ethics Review Board (UPMREB) was granted.

The participants were informed of the research study objectives, procedures, risks, and benefits of participating in the study. They were also informed of the confidentiality and anonymity of the study results. The participants were provided a copy of the signed and dated informed consent form. Data regarding places of residence were collected to determine whether or not the distance of these from the UPCM places posed additional stress on the students.

The data collected were encoded in a password-protected electronic database accessible only to the researchers. The hard copies of the data collection form are kept under lock and key in a steel cabinet in the Department of Psychiatry Office, again only accessible to the researchers. To protect their identities, the participants were identified by their student numbers both on the forms and on the database.

Risks and Benefits

There were no known risks associated with participation in the study. There are no direct benefits to the individual for participation in the study, but there is potential for the creation of programs and activities of the UPCM based on study results to improve the curriculum of medical student participants who will still be enrolled even after the study is terminated.

RESULTS

A total of 598 UPCM students were included in the study (Table 1). Response rate of 74% is very satisfactory compared to the multicenter UK study where the representative sample was 6.7% of the country's total medical school population. The different year levels in this study were well-represented with only interns having a low turnout. They were unable to respond to surveys given their workload at the hospital, compared to younger students.

The participants' mean age was 22.6 (range: 18-31) years old. Males and females made up roughly equal proportions, as did the number of students per year level (roughly 20% each). Three-quarters of the student participants are Roman Catholics, and almost all are single. Slightly more than half of the students were from the provinces outside Metro Manila; however, almost everyone took residence while in training inside the City of Manila, including students from other cities of Metro Manila. Three-quarters were lateral entrants (non-INTARMED), and slightly more than half were from STS Bracket A.

With an increasing scale of one to five, the average well-being based on the two proxy variables is 3.5 which is slightly higher than the average score (Table 2). A score closer to 1 means there is a higher level of concern in that domain, it implies that it is a problem area. A score of 5 means that there is no concern about the domain. Of all the factors, culture is the highest (4.0), representing a supportive culture, and work-life balance is the lowest (2.5). Safety and travel were above average. Perceived academic support was also slightly above average and acquisition of knowledge was average. Below average domains included perceived support in personal and

Table 1. Demographic Profile of UPCM Students

Characteristics (N= 598)	Mean ± SD or n (%)
***Age** (years)*	22.6 ± 2.0
Sex	
Male	280 (46.8)
Female	318 (53.2)
Civil Status	
Single	596 (99.7)
Married	2 (0.3)
Year Level	
III	145 (24.2)
IV	129 (21.6)
V	116 (19.4)
VI	127 (21.2)
VII	81 (13.6)
Religion	
Christian, Roman Catholic	449 (75.7)
Christian, Mainline Protestant	26 (4.4)
Christian, Evangelical/Born Again	57 (9.6)
Iglesia ni Cristo	5 (0.8)
Islam	15 (2.5)
Others	41 (6.9)
Residence of Origin	
Within Metro Manila	253 (43.4)
Outside Metro Manila	330 (56.6)
Residence while in Training	
Within the City of Manila	505 (92.2)
Outside the City of Manila	43 (7.8)
***Entry** (n=568)*	
Direct entrants	151 (26.6)
Lateral entrants	417 (73.4)
Pre-Medicine course	
BS Basic Medical Sciences (INTARMED)	154 (25.8)
BS Biology	130 (21.8)
BS Psychology	86 (14.4)
BS Nursing	18 (3.0)
BS Molecular Biology and Biotechnology	22 (3.7)
Others	187 (31.3)
***With Pre-Med Degree Honors Received** (n=440)*	372 (84.6)
***Socioeconomic status (STS Bracket)** (n=572)*	
A	322 (56.3)
B	147 (25.7)
C	84 (14.7)
D	14 (2.4)
E	5 (0.9)

Table 2. Factors Contributing to Medical Student Well-being

Variables	Mean ± SD
Demands	2.8 ± 0.5
Work-life balance	2.5 ± 0.7
Travel and orientation	3.2 ± 0.7
Safety at work	3.3 ± 0.6
Acquisition of knowledge and skills	3.0 ± 0.5
Culture	4.0 ± 0.6
Perceived support: Academic	3.2 ± 0.8
Perceived support: Personal/Health	2.9 ± 0.7
Finance	2.6 ± 1.1

health issues, finance, and demands which means students found these factors unsatisfactory.

From the univariate analysis, increasing age would mean increasing scores for travel and orientation, safety at work, and acquisition of knowledge and skills (Table 3). Males had higher score for demands, work-life balance, acquisition of knowledge and skills, perceived academic support, and perceived personal support, implying there is less concern for these factors. Singles had higher scores than married in travel and orientation. Higher year levels as compared to year level III had lower scores or more concern among the factors such as demands, work-life balance, travel and orientation, perceived academic support and perceived personal support. Students residing in the City of Manila while in training had higher scores for travel and orientation, while students from provinces outside Metro Manila as residence of origin had lower scores for perceived academic support.

Direct entrants from the INTARMED program had lower scores for acquisition of knowledge and skills, and perceived personal support. Among the different pre-med courses as compared to INTARMED program, BS Molecular Biology and Biotechnology graduates had higher scores for demands, and work-life balance. BS Nursing graduates had higher scores for safety at work, acquisition of knowledge and skills, perceived academic support, and perceived personal support; but had lower scores for culture. BS Biology graduates had higher scores for perceived personal support.

In terms of the socio-economic status based on STS bracket, income classes B through E had lower scores for travel and orientation, and finance. Class E had lower scores for acquisition of knowledge and skills, and culture as compared to Class A.

Multivariate analysis was also performed. Age, sex, year level, type of entry, and socio-economic status were associated with demands; sex and year level for work-life balance; year level, residence while in training, and socio-economic status for travel and orientation; age, sex, year level, type of entry, and socio-economic status for both safety at work and acquisition of knowledge and skills; year level and socio-economic status for culture; sex, year level, and residence of origin for perceived academic support; and sex, year level, and type of entry for perceived personal support. No other variables were found to be associated with finance except for socio-economic status.

Twelve Learning Unit (LU) III students, 15 LU IV students, 16 LU V students, 20 LU VI students, and 10 LU VII students wrote down comments. The comments are summarized on Table 4, and are found to be consistent with existing literature on student well-being.

DISCUSSION

The study set out to elicit the various factors that impact on medical student well-being using the modified Cardiff Medical School Well-being Questionnaire. This is a unique and extensive tool specifically selected because it covers practical and relevant domains as experienced by medical students while in training from basic sciences to clinical learning. The study hoped to pilot-test the assessment questionnaire to the UP College of Medicine students and evaluate its replicability in other Philippine medical school settings. There is a dearth of local studies on medical students in general. To date, this is the first local study that investigates factors contributing to the well-being of medical students.

Domains

The lowest scores were found in work-life balance, followed by finance, demands, and perceived support on personal and health matters; (Table 2) this resonates internationally, except in a UK study, where travel was rated poorly despite advanced transportation. Culture, on the other hand, is rated highly, contributing positively to well-being. Sharing a strong bond with colleagues can foster good adaptation especially in a healthcare environment.[1]

Table 3. Demographic Characteristics Associated with Factors (Mean ± SD)*

Variables	Demands	Work-Life Balance	Travel and Orientation	Safety at Work	Acquisition of Knowledge and Skills	Culture	Perceived Academic Support	Perceived Personal Support	Finance
Age	2.79	2.48	**3.18**	**3.27**	**3.05**	3.99	3.16	2.86	2.63
Sex									
Male	**2.83**	**2.55**	3.21	3.32	**3.11**	3.99	**3.35**	**3.00**	2.63
Female	2.76	2.41	3.15	3.24	2.99	3.99	2.98	2.74	2.63
Civil Status									
Single	2.79	2.48	3.19	3.27	3.05	3.99	3.16	2.86	2.63
Married	2.33	2.20	1.81	3.00	2.66	4.50	2.50	2.67	2.25
Year Level									
III	2.95	2.64	**3.37**	**3.24**	3.05	3.96	3.28	3.08	2.66
IV	**2.68**	**2.16**	**3.18**	**2.94**	**2.83**	3.88	**2.98**	**2.64**	2.73
V	**2.80**	2.64	**3.13**	**3.37**	2.98	**4.12**	3.17	2.92	2.56
VI	**2.69**	2.48	**3.08**	**3.37**	3.15	4.05	3.09	2.82	2.59
VII	2.85	2.44	**3.07**	**3.56**	**3.32**	3.95	3.29	2.81	2.56
Residence of Origin									
Within Metro Manila	2.80	2.51	**3.21**	**3.20**	3.01	3.97	**3.07**	2.80	2.71
Outside Metro Manila	2.79	2.46	3.17	3.32	3.08	4.00	3.21	2.91	2.56
Residence While in Training									
Within Metro Manila	2.78	2.48	3.18	3.27	3.06	3.99	3.14	2.84	2.59
Outside Metro Manila	2.81	2.39	2.90	3.20	2.96	3.95	3.16	2.78	2.67
Entry									
Direct	2.75	2.45	3.27	3.25	2.96	4.06	3.06	2.73	2.61
Lateral	2.81	2.49	3.15	3.28	3.08	3.97	3.19	2.90	2.64
Pre-Medicine Course									
INTARMED	**2.75**	2.45	3.27	3.25	**2.96**	4.06	3.06	2.73	2.61
BS Biology	**2.75**	2.45	3.12	3.28	3.05	4.02	3.12	2.92	2.59
BS Psychology	**2.71**	**2.35**	3.20	3.22	3.04	4.06	3.00	2.68	2.69
BS Nursing	**2.88**	2.48	3.07	**3.61**	**3.44**	3.78	3.55	3.15	2.30
BS MBB	**2.96**	2.78	3.23	3.11	2.89	4.02	3.22	3.00	2.52
Others	**2.87**	2.54	3.14	3.30	3.11	3.91	3.29	2.97	2.68
Honors									
Yes	2.79	2.48	3.14	3.27	3.06	3.99	**3.16**	2.89	2.61
No	2.89	2.53	3.18	2.35	3.14	3.87	3.37	2.99	2.77
Socioeconomic Status									
A	2.78	2.49	3.33	3.25	3.00	4.01	3.16	2.84	2.78
B	2.85	2.52	**3.04**	3.29	3.12	4.02	3.11	2.85	2.52
C	2.75	2.37	2.94	3.34	3.06	3.93	3.23	2.91	**2.25**
D	2.63	**2.23**	**2.63**	3.12	**2.92**	4.07	2.83	2.70	**2.43**
E	2.57	**2.24**	2.90	2.98	**2.80**	3.30	3.13	2.97	**1.80**

**Values in boldface are noted to be statistically significant.*

Table 4. Summary of comments by medical students

Demands		• Medical school is difficult, unforgiving, stressful, and requires that students step out of their comfort zones. • Professors expect so much; or have varied expectations that are not consistent. A standard means of assessment is requested • More formal individual assessment in order to assess work ethic, work within a group, among others. • Concerns about long shifts. • Time in one rotation is being used to accomplish tasks and requirements for a different rotation. • Concerns about the Return of Service Agreement • Demands of medical students as unpaid members of the hospital workforce: 1) exposing patients to care of those who are not well-guided, and 2) patient care will be compromised without medical students
Work-Life Balance		• There is pressure from family to just focus on graduating/medical school, and not give time for other activities, outreach, volunteer, organizations, and advocacy in spite of inspiration to do more • A feeling of not being able to maximize one's medical education if there will be extracurricular activities
Travel and Orientation Safety at Work		• Concerns were aired regarding walking routes towards the hospital • Security issues in the City of Manila
Acquisition of Knowledge and Skills		• Concerns about being prepared for medical school for someone who has not attended a four-year undergraduate course • A wish for more formal, focused, guided training in the hospital • Feeling of unpreparedness for testing on theoretical knowledge as compared those trained in other medical schools
Culture		• Perception that complaining and airing concerns as signs of entitlement • The idea of "*kinaya namin noon, kaya niyo rin dapat ngayon*" is problematic • Questioning if having to accept long hours and undesirable treatment while in training is worth it • Being assigned jobs that are not considered as part of the tasks of a medical student • Paying for clinical equipment and materials out of their own pockets
Perceived Support: Academic		• Lack of infrastructure/equipment for service, training, research • Approach to pedagogy is lacking in that sessions are not standardized, and not oriented to the board examinations or learning basic competencies; limited learning opportunities
Perceived Support: Personal / Health		• Not enough programs, support for, and monitoring of medical students in terms of well-being and mental health • Need to give more time and support for the mentoring program • The healthcare system is convoluted and difficult to access
Finance		• Wish for free tuition for all • Appreciation of the Student Financial Assistance (SFA)
Others	Concepts in the Study	• Explore support groups, extracurricular activities as to where time is also spent in relation to well-being • Consider factors outside medical school as well (family, friends, peers, media)
	Study Methods	• Expressed difficulty understanding some items • Some items are not applicable • Timing of the administration of a tool
	Emotional Responses, Thoughts	• Expressed gratitude and good wishes for the research • Expressed interest in the study results • The college should follow suit of more "progressive" schools • Considering leaving medical school

Table 5. Correlation of Different Factors with Well-being

Variables	Pearson's r	p-value
Demands	0.388	<0.001
Work-life balance	0.316	<0.001
Travel and orientation	0.185	<0.001
Safety at work	0.328	<0.001
Acquisition of knowledge and skills	0.302	<0.001
Culture	0.211	<0.001
Perceived support: Academic	0.314	<0.001
Perceived support: Personal/Health	0.423	<0.001
Finance	0.107	0.009

Work-Life Balance

A skewed work-life balance is unsurprising of medical school.[8,9,13] There are school organizations and activities that students can engage in on a voluntary basis. These are mostly student-led activities including medical missions, variety shows, interclass choral competition, sportsfests, and film festivals. There are also similar competitions (in dance, choral singing, and sports) across medical schools. These are mostly institution-sanctioned and school-supported activities recognize students' creative, athletic, and artistic talents.

Financial Issues

Financial issues are a burden to the medical student (in the form of years of extended schooling, socialized tuition fee, daily needs, uniforms, medical equipment, electronic and printed books, etc.). Although a UPCM education costs considerably less compared to other private medical schools,

a return service agreement ties the student to local training or service or otherwise refund the cost of tuition almost two-fold.

Demands

Physical and mental demands can either lend motivation or add more negative pressure on students. Medical school has been reputed to be highly stressful and it has lived up to that notoriety. It's commonplace to find students in the pre-clinical phase complaining about too many academic requirements, unyielding or difficult professors, and a heavy study load with too much information compressed within a short time period. On the other hand, clerks and interns in the clinical phase face demanding circumstances with heavy patient load, multiple tasks, tiring work shifts, and sometimes, inadequate guidance and supervision prior to handling patients. The demands seem to have a domino effect in a government tertiary hospital where there are voluminous patients but lacks staffing. These factors can take a toll on the students' sense of well-being as they experience compassion fatigue and mental exhaustion that limits their learning clinical skills.

Personal and psychosocial stressors include relationships with their classmates, with whom they work closely on both academic and clinical requirements. From basic Anatomy class to their last clinical rotation in internship, students work on some tasks individually, and some tasks as part of a group. Group members differ in industriousness, discipline, motivation, and social skills; as such, they may be either a source of stress or support.[13] Students suggested grading their work ethics as part of a clinical team (Table 4).

Acquisition of Knowledge and Skills

Average to above average scores were obtained in acquisition of knowledge and skills, perceived academic support, travel and orientation, and work safety. Compared to the other domains, there is less concern about these factors.

Travel and Orientation

Many students choose to move to temporary residences—dormitories, condominium units or apartments closer to the university to cut down on commute time going to school. Travel in the course of training includes shuttling to and from residence, taking trips to do community work, either within the city or in immersion trips to provinces like Cavite. In general, less travel time and easy access to places that provide daily needs like groceries and convenience stores can free up more time to devote to studying, clinics, ward work, rest or leisure. The mall within walking distance, right next to the campus, has become a go-to place and a blessing to many medical students for just about any practical concern.

The lay-out of the hospital with main entrances of wards facing the center, is relatively simple, except for some pockets and areas that can be obscure and configured differently. There are also hospital forms, processes and procedures that the students have to abide by. No formal orientation is given to the students that covers all of these; they are expected to navigate the hospital on their own during their ward rotations. Informally, their seniors and other hospital staff may also provide directions and instructions on where to go and how to go about certain tasks around the hospital.

Safety at Work

Safety at work garnered an above average score for students. This domain generally includes environmental and occupational safety. The latter can be ensured by providing training in safety precautions during their orientation to clinical tasks. The former includes security in the hospital premises and around the vicinity. Isolated incidents of theft can occur in a public hospital setting, even if there are security guards roaming in the area and a police precinct is situated within the campus itself.

Culture

The existing organizational culture contributed positively to most students well-being. One unifying dictum that UPCM students share is the pursuit for excellence. Stated in the mission-vision of the college is a "commitment to excellence and leadership in education, research, and service." Known to many is the brand that UP carries with it, reputed to be the medical school for the *"crème de la crème"* or cream of the crop; only the best students are accepted. A culture of excellence that promotes respect and freedom of speech contributes to an emotionally safe learning environment.

The UPCM Response: Perceived Personal Support

UPCM added the Introduction to Patient Care (IPC) course for Learning Units I and II in 1982,, the Art of Medicine series in 2004, and the mentoring program for Learning Units III to VII in 2005. Students in higher levels found mentoring useful but lack opportunity in their clinical rotations; they recommend protected time for this purpose during clerkship and internship (Table 4), consistent with the low score of perceived personal support. Although further data is needed to validate the outcomes, this positive reception to mentoring proves the effectiveness of institutional-level programs and activities geared towards medical student well-being.[14,15] In response to this growing need, the college thru the leadership of the dean has set up the Committee on Student Resiliency and Wellness particularly to create a psychosocial wellness program and address the mental health concerns of the UPCM constituents.

The UPCM Response: Perceived Academic Support

The UPCM faculty is invested in developing better teaching strategies, improving learning outcomes and developing methods of evaluation, such as the Course Evaluation by Students (CEBS) forms. This is consistent with the need to "understand the students' approach to learning within your institution."[16] This constant, open

avenue for feedback may be the reason why students have high perceived academic support from the faculty. Some students, however, find themselves ill-equipped and tend to grapple with competence issues and feelings of inadequacy, lacking the knowledge and skills in handling patients while in training. Oftentimes, the sheer burden of clinical load and high volume of patients leave them with very little time to read up and study more about their cases. Review classes for basic sciences are offered to LU7 interns in preparation for the medical licensure exam.

Over the past years, policies have evolved to ensure protection of students from mistreatment, whether by faculty or residents. Faculty members have been trained not to resort to mistreat, humiliate, and denigrate students, but to give constructive feedback as called for. Physician-teachers may also be burned out, mentally ill, or have poor well-being themselves, decreasing their empathy from students, and propagating an unhealthy learning and working environment.[14]

Relationship Between Student Demographics and Domains of Well-Being

Older students are less concerned about travel and orientation, safety at work, and acquisition of knowledge and skills; this contrasts with other medical schools where travel is stressful for higher year levels.[13] This may be because of differing curricula, and eventual acclimatization; older students develop ease in learning and familiarity with skills.

Older students are more concerned with demands, work-life balance, and perceived support in academics and personal matters. This is consistent with their request for protected mentoring time (Table 4). These are also consistent with a 2018 study done in Saudi Arabia which found that female clinical-year students, counterparts of LU VI and LU VII students in the UPCM, "value mentoring and expect that it will enhance their academic performance and career planning."[15]

Males seem to cope better with demands, work-life balance, acquisition of knowledge and skills, perceived support for academics and personal issues. Female students were more concerned about demands than their male classmates. According to a study done in 2017, it was noted that female medical students "reported experiencing gender discrimination and sexual harassment," which affects their choice of specialty, and their residency rankings.[14] It is notable that this, as well as sexual and gender minorities, were not dealt with in the scale used, and observations of and thoughts on these did not appear in the comments of the students either. This has implications on ingrained sex and gender ideations within the medical school, and the environment in which the medical students are living and learning.[13,14] The newly formed Committee on Student Resiliency and Wellness may explore this and advocate a gender and sexual minority-inclusive medical school curriculum, environment, and culture.

Work-life balance is a cause of concern across all demographic variables for reasons stated earlier, particularly in Learning Unit 4 Psychology graduates from the lowest socioeconomic status. This academically intense year is a turning point; by this time, many decide whether to continue or quit. Psychology majors rated it very low possibly because of the contrast between their undergraduate and post-graduate years. Not surprisingly, Molecular Biology and Biotechnology (MBB) graduates rated work-life balance higher because this course is known to be akin to medicine in terms of its academic demands.

Socioeconomic status was the only demographic variable significantly associated with the low scores on finance, signifying that particularly for those who belong to a lower SES level, financial pressures in medical school can be an additional burden to one who is already stressed out with academic and clinical responsibilities (Table 3).

Perceived support on personal matters was found to be associated with sex, with males having higher scores than females. This again implies that medical school is experienced differently across sex and gender.[13,14] It was also associated with the year level of students, with LUIV having the lowest score meaning there is high concern for this domain. Those who came from the 7-year INTARMED program also had lower scores compared to lateral entry counterparts. They are on the average around two years younger than their batchmates.

Acquisition of knowledge and skills was significantly associated with age, male sex, year levels IV and VII, INTARMED students, BS Nursing graduates, and low SES (Table 3). Perceived academic support was significantly associated with male sex, LU IV students, those living within Metro Manila, and with pre-medical degree honors received.

Travel, orientation, and safety were significantly associated with age, year levels, residence of origin within Metro Manila. Transportation and orientation were significantly associated with SES bracket B and D. Noteworthy was that those who took up BS Nursing as their pre-med course scored high in safety. Nursing graduates have the advantage of learning safety in handling patients given their practicum and clinical exposure earlier on.

Culture was found to be the strongest factor contributing to well-being among students. Strikingly, LU V students in their clerkship year had the highest mean score (4.12). It may be difficult to infer from this and may be true only for this subgroup. However, LU V students find their first entry in the clinical rotations, departing from the predominating classroom set-up of LU IV, hence the foretaste of what it feels like to be a practicing doctor can reinforce the strong sense of belonging to the PGH.

Post Hoc Analysis

The researchers also looked briefly into the well-being using the proxy questions in the questionnaire, and its correlation with the previously identified factors (Table 5).

The average score for well-being is 3.5±0.8 which is slightly above average score. Looking into its correlation with the different factors, they are direct and range from weak to moderate, significant relationship. Perceived support for personal and health has the strongest relationship ($r=0.423$, $p<0.001$), while finance has the weakest relationship ($r=0.107$, $p=0.009$).

Limitations of the Study

This study was limited to students currently enrolled in the University of the Philippines College of Medicine. This population did not cover the group of students who have left the medical school permanently or have gone on a leave of absence, who presumably experienced low levels of well-being, which may have been a function of the factors for study in this investigation. Data on these individuals may be gathered from exit interviews conducted prior to their leaving the institution for a leave or discharge.

Also, the scale used evaluated only domains that are directly controlled by the medical school, which do not include extracurricular activities, interpersonal relationships, student organizations, volunteer work, and so on. Furthermore, while they have been mentioned by the student participants in their comments, no formal evaluation of existing mental health and well-being programs and activities of the UPCM was done in connection with this study in terms of effects and points for improvement.

Sexual and gender minority status were also not explored. While demographics on sex were taken into consideration, these were not explored in detail in terms of the scale used.

CONCLUSION

Overall, the study described the various factors that have an impact on medical student well-being. It emphasized concerns particularly about work-life balance, demands, finance, and perceived support on personal and health issues, and marked less concerns about culture, safety at work, travel and orientation, and perceived support on academics. Nevertheless, findings indicated that there is room for improvement across all domains and brought to light limitations which can use further exploration and elucidation in future studies. Given the value of recognizing these factors that impact on well-being of UPCM students, the same assessment tool can be recommended for use to other medical schools to identify if variation exists. There can be a rich opportunity for schools to exchange best practices and learn from each other. Hopefully, this research can influence and be of significant relevance to the conceptualization of a holistic wellness program and the possibility of curricular developments that can promote well-being and support the needs of students not only at the UPCM, but also in other medical schools.

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Statement of Authorship

The principal author led in the conceptualization of the research and correspondence with author of Cardiff questionnaire. Both authors contributed in the development of the work, acquisition and analysis of data, drafting and revising, and approved the final version submitted.

Author Disclosure

Both authors have declared no conflicts of interest.

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APPENDIX

Domains and Corresponding Questions

Demands *(10 questionnaire items)*	
2	Based on my experience of medical school so far, the extent to which we are assessed is reasonable.
3	I find it difficult to maintain my concentration when I am sat in lecture theatres all day.
4	When on placement I come home feeling physically exhausted.
5	Medical school is not as competitive as I expected it to be.
10	I understand the responsibilities of training in a regulated profession.
12	I find it difficult enduring the long hours associated with clinical training.
13	I find it difficult enduring the responsibilities associated with clinical training.
14	I know what is expected of me as a medical student when I am on the wards.
22	I am given a sufficient number of breaks most days.
23	There never seems enough time to get from one teaching lessons to the next.
Work-Life balance *(10 questionnaire items)*	
7	Medical training allows plenty of time for leisure activities.
19	Medical training controls my life and leaves little time for anything else.
20	I still go on thinking about work problems in my leisure time.
21	I find it easy to manage my time effectively.
Acquisition of knowledge and skills *(7 questionnaire items)*	
1	I find my medical studies intellectually stimulating.
6	I am concerned that I will be unable to master the entire pool of medical knowledge.
8	I feel confident communicating with patients.
9	I feel confident communicating with patients' relatives and carers
15	I am not sure what tasks I am meant to complete when I am on the wards.
44	I sometimes struggle to see the screen during lectures.
45	I feel have been trained sufficiently to use equipment whilst on wards.
Safety at work *(6 questionnaire items)*	
11	I know what to do if I incur a needle stick injury.
16	I have received sufficient training in manual handling techniques whilst at medical school.
17	I am always trained in the tasks I am asked to complete when on the wards.
18	I do not feel confident manual handling whilst on placement.
30	I work in groups more often than I work alone.
31	I do not feel confident working alone.

Travel and orientation *(7 questionnaire items)*	
24	Travel expenses incurred whilst on placement are a source of concern to me
25	Accommodation is always well organized for me by the medical school when I am away on placement.
26	I always feel safe when travelling to and from placement.
28	Travelling long distance to my placements is a concern that I think about.
46	When on placement knowing the layout of the hospital is a worry for me.
47	I am given clear guidance to ensure I am able to find everything I need when I am on the wards.
Culture *(2 questionnaire items)*	
29	Medical school fosters a sense of anonymity and feeling of isolation among the students.
41	I feel there is an exception from the medical school for me to be resilient whilst on placement.
Perceived support for academic issues *(3 questionnaire items)*	
32	I feel confident communicating with clinical supervisors.
33	I feel confident communicating with academic supervisors.
36	I know who to speak to if I am struggling with academic progress.
Perceived support for personal and/or health issues *(6 questionnaire items)*	
34	Sometimes I wish I had more support from my personal tutor when I am on placement.
35	I feel I have good support from the medical school to manage my personal/health related issues.
37	I feel comfortable asking for adjustments to accommodate me religious beliefs/values.
38	I feel comfortable asking for adjustments to help me overcome physical/personal/health issues (NB- ' adjustment' may refer to time, attendance or practical adaptations)
39	I feel comfortable managing situations that challenge my moral values.
40	I feel supported asking for help to manage ant mental health issues I might experience.
Proxy Outcome Measure for well-being *(2 questionnaire items)*	
42	The Medical school treats me with respect.
43	The Medical school makes me feel valued.
Additional Questions on Finance and Rest and Nutrition	
48	I find spending for my medical education (tuition fees, uniform, equipment, books) burdensome.
49	I feel pressured that I need to pay back my tuition fee subsidy should I decide to leave the country or not to pursue training in PGH after medical school.
50	I am able to eat well and get enough sleep.