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Contemporary Issues in Well-being of Undergraduate Clinical Students: A Systematic Review

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ABSTRACT

Well-being is a complex concept with objective and subjective elements that contribute to life satisfaction. Medical students experience inevitable transition from pre-clinical to clinical training with increasingly more independence and responsibility. This study aimed to identify well-being issues in undergraduate clinical students. The emotional, physical, social, spiritual, occupational and intellectual aspects of well-being were focused on. A thorough literature search was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies reporting issues from the six aspects of well-being in undergraduate clinical students, and published in peer-reviewed journals in English language from the year 2000 to 2020 with full-text available online were included. The initial search from PubMed, OVID Medline, Psych INFO and CINAHL Plus retrieved 623 articles with 51 studies included in this review. Evidence from the previous studies demonstrated poor well-being among undergraduate clinical students. Stress, lack of exercise, low peer and family support, and mistreatment by clinicians and patients were common well-being issues encountered. Based on this literature review, the five aspects of well-being except the emotional aspect were less explored. Thus, it will be of interest to investigate well-being issues among Malaysian undergraduate clinical students from the physical and occupational aspects, which are further impacted by the COVID-19 pandemic, and to identify possible contributing factors. Undergraduate clinical students are faced with several well-being issues. Thus, early detection of these issues is important to avoid devastating consequences to students and patients.

Keywords: *Well-being, Undergraduate clinical students, Systematic review, Questionnaire, Emotional*

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INTRODUCTION

The definition of well-being has been proposed by numerous articles and remains a challenge until today (1–2). Early work in 1989 identified autonomy, positive relationships with others, environmental mastery, purpose in life, self-acceptance and discovery of potential as aspects which constitute well-being (3), whereas later research focused on happiness, life satisfaction and the ability to fulfil goals (4–5). The Oxford English Dictionary defines well-being as “the state of being comfortable, healthy or happy”. It is a concept which comprises objective and subjective elements (1). The objective point of view refers to the consideration of indicators including gender, age, socio-economic status, ethnicity and belonging to vulnerable groups. On the other hand, the subjective elements look at an individual’s opinion on his or her own well-being. Generally, positive experience is equivalent to a high level of well-being and negative experience is associated with a low level of well-being (1).

In addition, an integrative review of the concept of well-being by Kiefer has defined it as according to the mental, physical, environmental and social status of a medical student with possible interaction between the aspects (6). They described well-being as a subjective assessment of health which is more concerned with feelings including sense of belonging and self-esteem, and less concerned with biological function in an individual (6). It is known as a concept developed across six facets of social, physical, intellectual, spiritual, emotional and occupational (7–8).

Well-being has also been assumed to be an umbrella term where people determine values about their lives, bodies, minds, activities that happened and the situation they live in (2). A multidisciplinary review proposed a simple, universal and optimistic new definition of well-being as the balance point between an individual’s physical,

psychological and social resources, and the challenges faced (9). When the challenges exceed existing resources, it leads to an imbalance that will negatively affect one’s well-being (9).

The term well-being can be subjective as its definition may change according to the circumstances where it is utilised. It is known to be used in contexts that surround physical, mental and emotional health, as well as life satisfaction (10). Stoewen suggested eight interdependent well-being aspects including physical, intellectual, emotional, social, spiritual, vocational, financial and environmental (11).

As the curriculum of medical course could be overwhelming for students as future doctors, especially in their clinical years where students are exposed to close contact with patients and medical practitioners, it is important to ensure their well-being is maintained (12). This is more significant especially during the challenging situation of COVID-19 pandemic where students have to adapt to a new approach to learning by online teaching (13).

The objective of this research is to identify the well-being issues in undergraduate clinical students and explore the gaps from previous studies to generate a research question of interest. The emotional, physical, social, spiritual, occupational and intellectual aspects will be focused on as these are commonly described dimensions of well-being by the previous studies.

METHODS

A literature search for articles from multiple databases was conducted to retrieve relevant published articles on the well-being issues faced by undergraduate medical students in their clinical years.

Eligibility Criteria

The pre-specified eligibility criteria were studies that reviewed any aspects of well-

being, clinical medical students as participants, validated instruments in assessing the prevalence of issues identified from each aspect of well-being, published in peer-reviewed journals, English language, full-text available online and published from the year 2000 to 2020. The search terms consisted of "well-being", "wellbeing", "social", "physical", "intellectual", "spiritual", "emotional" or "occupational", and "medical student", "clinical student", "final year student" or "trainee medical student" as keywords and headings. Any term related to medical school, clinical year, mental health, psychological health, physical health and Malaysia were also utilised in searching for relevant articles. Studies that only focused on pre-clinical students, published before the year 2000 and in non-English language were excluded.

Information Sources

Electronic databases such as PubMed, OVID Medline, Psych INFO, CINAHL Plus, Malaysian Medical Repository (MyMedR) and EBSCO were searched.

Search

The aspects of well-being included in the search were combined with the use of Boolean operators "AND", "OR" and "NOT" to obtain more productive and focused results. All analyses were based on published studies, thus, ethical approval and patient consent were not necessary.

RESULTS

Study Selection

The initial search resulted in 623 non-duplicate research articles. Of these, 497 articles were excluded after screening through title and abstract as aspects of well-being were not present. Full text of

the remaining 126 papers were screened, yielding 51 studies to be included in this literature review as shown in the PRISMA flow chart (Figure 1).

Study Characteristics

Among these articles, 36 (70%) studies adopted a cross-sectional study design whereas seven (14%) employed the longitudinal approach of approximately one year duration where students' well-being were assessed again to observe the changes across the year (14–16). Two (4%) literature reviews and six (12%) systematic reviews and meta-analysis were also included. Majority of the studies explored the psychological well-being of medical students during their clinical years and only a few concentrated on the other aspects of well-being. In terms of location, only 10 out of 51 (20%) studies were conducted in Malaysia while the remaining 41 (80%) studies were spread out across different countries including China, Brazil, Canada, Pakistan, United States, United Kingdom, Australia, Hong Kong, Singapore, Vietnam and others (Table 1).

Among those which were conducted in Malaysia, 7 (70%) of the studies sampled students from public universities including one from University of Malaya, Kuala Lumpur; three from Universiti Putra Malaysia, Selangor; and three from Universiti Sains Malaysia, Kelantan. On the other hand, one study was conducted at a private university named Royal College of Medicine, Perak; one at Management and Science University, Selangor; and the other one at International Medical University (IMU), Kuala Lumpur. Therefore, studies were spread out across four states in Malaysia with the majority carried out in public universities (Table 2).

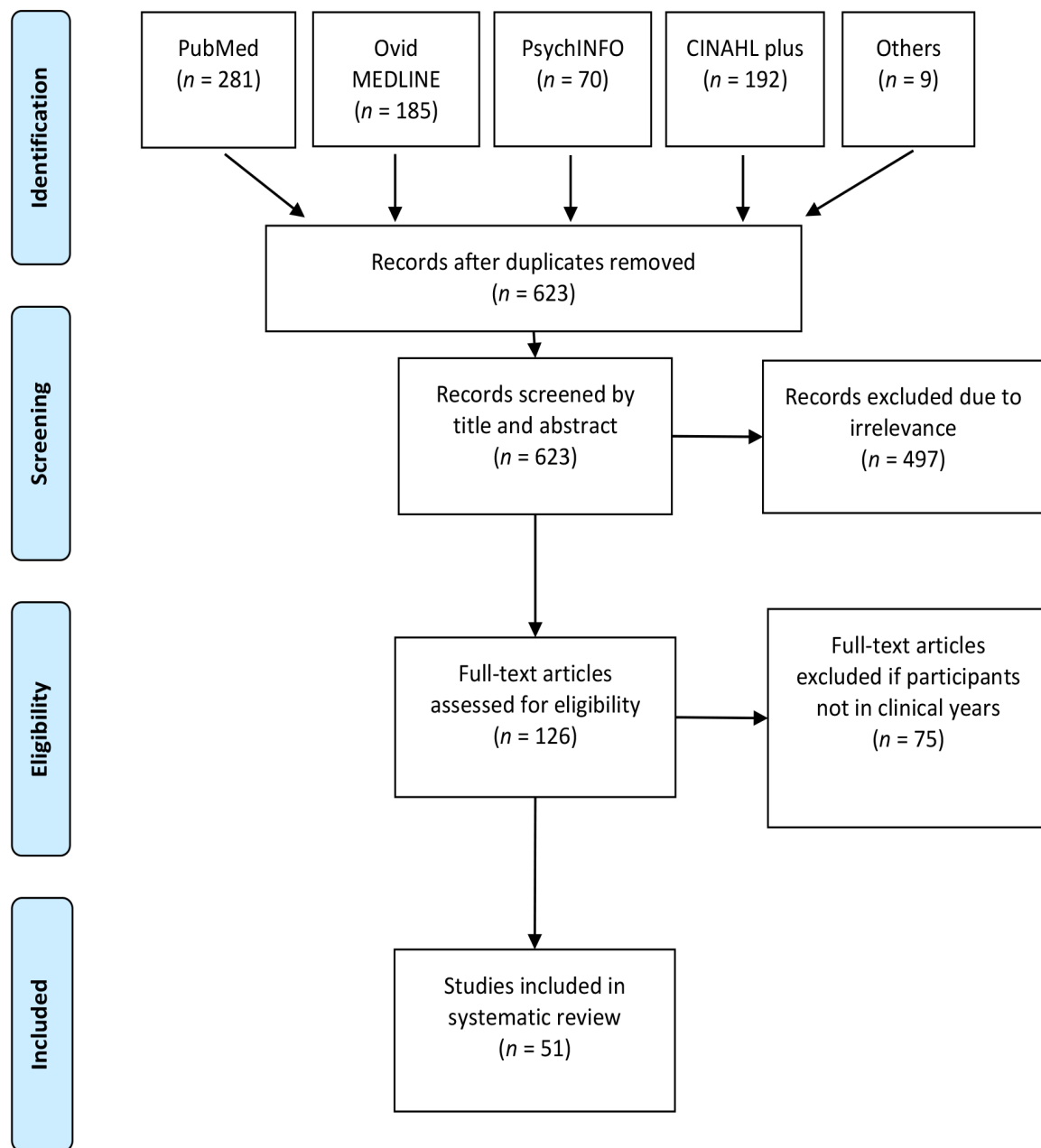


Figure 1: PRISMA flow chart.

Table 1: Studies on well-being issues in undergraduate clinical students

Variables	n (%)
Location	
Local	10 (20)
Overseas	41 (80)
Participants	
Pre-clinical and clinical	45 (88)
Clinical	6 (12)
Study design	
Cross-sectional	36 (70)
Longitudinal	7 (14)
Literature review	2 (4)
Systematic review and meta-analysis	6 (12)
Well-being aspects	
Emotional	21 (41)
Physical	7 (14)
Occupational	6 (12)
Social	3 (6)
Spiritual	3 (6)
Intellectual	2 (4)
Multiple	9 (17)

Table 2: Local studies on well-being issues in undergraduate clinical students

Variables	n (%)
Institution	
Public	7 (70)
Private	3 (30)
Location	
Kuala Lumpur	2 (20)
Kelantan	3 (30)
Selangor	4 (40)
Perak	1 (10)

Studies used WHOQOL-BREF and WHOQOL-100, which are generic questionnaires with items that target the emotional, social and physical aspects of well-being (17–18). The Medical Outcomes Study Short Form-36 (SF-36) is another widely utilised instrument which measure the emotional, physical and social well-being (17, 19). In terms of evaluating the emotional aspect, multiple study outcomes such as burnout, depression, anxiety, stress and suicidal ideation were examined through administration of the Hospital Anxiety and Depression Scales (HADS) (18, 20), General Health Questionnaire (GHQ-12) (12, 21–24), Maslach Burnout

Inventory (MBI) (14, 25–27), Copenhagen Burnout Inventory (CBI) (28), Beck's Depression Inventory (BDI-II) (15, 29), Patient Health Questionnaire (PHQ-9) (30–31), Depression Anxiety and Stress Scale (DASS-21) (32–33) and Perceived Stress Scale (PSS) (34–35). Furthermore, Baecke questionnaire of physical activity was used to measure the occupational and leisure time sports participation, reflecting the physical well-being of medical students (36). The Alcohol Use Disorder Identification Test (AUDIT) (37), Global Youth Tobacco Survey Questionnaire (38), Healthy Eating Index (HEI) (36), Pittsburgh Sleep Quality Index (PSQI) and

Epworth Sleepiness Scale (ESS) were also employed to quantify the lifestyle habits of students (39). On top of that, two studies have measured the social well-being of students with the Multidimensional Scale of Perceived Social Support (MSPSS) (40) which scores on the perception of support from friends, family and significant others. The Functional Assessment of Chronic Illness Therapy – Spiritual Well-Being Non-Illness (FACIT-Sp-NI), Fetzer Multidimensional Measurement of Religiousness/Spirituality (MMRS) and Daily Spiritual Experiences Scale (DSES) were utilised to measure the spiritual well-being of medical students. Besides, the Jefferson Scale of Physician Lifelong Learning (JeffSPLL) was used to measure orientation towards lifelong learning (41). Studies which assessed the occupational well-being of medical students developed their own unique questionnaires with relevant items included (20, 42).

DISCUSSION

Medical school strives to produce all-rounded students well-equipped with skills and knowledge needed to be a good doctor in the future. Students are challenged with their expectations, responsibilities and roles in the clinical phase of training (35). According to Teunissen et al., medical students experience the inevitable transition from pre-clinical to clinical setting which requires more independence in enhancing their skills and knowledge (43–44). Students would encounter patients in real life and are expected to apply knowledge gained in the pre-clinical years. This has caused the emerging prevalence of well-being issues in medical students all over the world including Hong Kong, United States, Pakistan, Vietnam and Ireland (14, 24, 26, 38, 45).

Emotional Well-being

Emotional well-being is defined as having a great sense of self-esteem or self-

identity which is difficult to manage as the techniques are individualised and not universal (7). Medical students were found to have poorer emotional well-being as compared with the general population and peers of similar age (14, 27, 46–47). Studies demonstrated high prevalence of stress in medical students ranging from 29.6% to 90%, with female gender and those in fourth and final year significantly more stressed than male gender and pre-clinical years students (12, 16, 25, 32–35, 46, 48). They are also vulnerable to encounter burnout especially in their clinical years with prevalence rates varied from 7% to 75.2% (14, 26–28, 46, 49).

Furthermore, anxiety and depression are common in medical students and were focused intensively in previous studies which have shown prevalence rate of anxiety has reached up to 76% and prevalence rate of depression was 60% (18, 23, 25, 29, 30, 33, 47, 50). Youssef (25) found a higher prevalence of depression in clinical medical students whereas studies by Ediz et al. (47) and Fuad et al. (33) found that it decreased over the years. In terms of emotional disorders, 41.9% to 87% of medical students were screened positive for psychiatric disorder. They attributed this to pressure from examinations as well as poor relationship with lecturers and family members (21–22, 24, 49). Although studies by Mohd Sidik et al. (21) and Zaid et al. (22) discovered higher prevalence of emotional disorders among females and Indians, the results were not statistically significant. Suicidal ideation could be detrimental as it is likely to progress to suicidal attempts and actions in medical students (31). Approximately, 1 out of 9 or 10 students had suicidal ideation at some point during the course (14–15, 31, 51). Coping mechanisms vary between individuals and these include talking to friends, exercising, music and sleep (50, 52). Only minority of students would seek help as they were concerned about the stigma associated with having mental health

problem, the cost, lack of time and some of them were unaware of support services available in the university (24, 30, 46). Proposed approaches include introducing mentorship programme, screening programme and counselling services, educating students on coping strategies and study tips, identifying students at risk of mental health problems, raising awareness of support services and to address the perception of stigma (15–16, 18, 21, 23, 47, 53).

Physical Well-being

Physical well-being comprises lifestyle practices such as diet, alcohol use, drug use, sleep and exercise that affects one's physical health (7). A study done by Nguyen et al. (38) among Vietnamese medical students found that 25% of students smoke and most of them started when they first entered the university. The smoking rate increases while intention to quit decreases across the years (38). Electronic cigarettes (e-cigarettes) use was popular among young populations and Iqbal et al. (45) found that 6% of medical students in Pakistan used e-cigarettes and 1.2% were daily users. Most of the tobacco users were in their clinical phase of medical course and non-smoking regulation should be enforced by the university (45). On top of that, alcohol consumption among medical students was much higher than the general population, with 12.5% having alcohol problem and 70% practiced binge drinking, indicating the urgency of raising awareness and organising prevention programmes (37, 51). A study by Merlo et al. (51) revealed that 22% of medical students engaged in marijuana use and a lesser proportion in nonmedical use of opioids and stimulants (51). Smoking, e-cigarettes use, alcohol consumption and substance use were more prevalent in males (37–38, 45, 51).

An ideal sleep duration is recommended by The National Sleep Foundation to be seven to nine hours (54). Medical students reported 6.3 hours of sleep per night and more than half had poor sleep quality (39).

Besides, medical students in the United States adopted physical activity and dietary habits corresponding to the national targets, with increased physical activity, vitamin D and fat intake, and decreased cardiovascular fitness, sodium and carbohydrate intake throughout the medical course (36). Majority of medical students have normal BMI and utilised exercise facilities on campus (55). In addition, 13.7% male medical students had mild, moderate or severe erectile dysfunction and 24.4% experienced premature ejaculation (56). Multiple studies proved a decline in physical health in medical students over the course (17, 19). Contradictory to this finding, McKerrow et al. (16) found that physical health deteriorated in the first year of medical school and improved over the course but never returned to the baseline. Strategies to promote healthy lifestyle such as the incorporation of physical activity, nutrition and sleep hygiene education into the curriculum should be implemented to maintain the physical well-being of medical students throughout the course (36, 39).

Social Well-being

Social well-being is about giving and gaining support from others. The balance between establishing a social network of peers among students and maintaining other aspects of well-being is essential in maximising their overall well-being (7). Perceived social support as measured by Park et al. (57) was higher in the third-year medical students as compared to the fourth-year medical students, and in females than males. This can be explained by the immediate transition from high school to medical school, predisposing medical students to social isolation, and the difficulties in males to establish close relationships with peers (57). A study performed by Yamada et al. (40) demonstrated poorer academic self-perception in medical students with low peer social support. A good peer relationship was found to be protective against psychological distress and improve academic performance (40).

Furthermore, perceived social support from family members have a significant correlation with mental health problems such as anxiety, depression and stress (32). A study carried out by Chew et al. (58) in a public university in Malaysia found that clinical students in their final year who claimed to have good social skills had significantly poorer academic performance ($p = 0.021$). They suggested the incorporation of social management into medical curriculum to enhance the academic performance of medical students (58). Medical schools are encouraged to aim at improving social support among medical students in view of its correlation with empathy, one of the key characteristics that contributes to clinical competency. An example is to reconstruct the curriculum and promote positive peer social relationships (57). Moreover, the involvement of family members in programmes that enhance well-being of medical students is also recommended by Minhat and Alawad (32).

Spiritual Well-being

Spiritual well-being is believed to be a fundamental aspect that maintains the balance and sustains other aspects of well-being. It helps in developing good characteristics which are desired in medical students including building a strong relationship with people and allowing personal growth (7). Guck and Kavan (59) examined medical students' beliefs in the impact of spirituality and health, and found that spirituality is thought to be essential in tackling health conditions as it is beneficial as a resource for coping and a way in stress-reduction (59). Another study carried out by Wachholtz and Rogoff (20) explored the relationship between spiritual well-being and burnout in medical students. The findings of the study suggested that medical students with better spiritual well-being have greater life satisfaction, whereas students who scored lower on the scales presented with greater burnout rates and psychological distress (20). Balboni et al. (42) proved

that students who are spiritual experienced problems related to self-confidence and personal identity, but were protected from emotional stress from patient encounters and conflicts within the team. Students were found to have increased spirituality during the medical course (42). One of the recommended strategies to improve medical students' spiritual well-being is to address the role of spirituality in first or second year of medical school curriculum (59).

Occupational Well-being

Occupational well-being is achieved when an individual is satisfied with his job. From the students' perspective, attending classes can contribute to their occupational well-being (7). Bullying, intimidation and harassment of medical students by their teachers seem to be a regular and global phenomenon (60). Such behaviours can be toxic to the education environment and undermine the self-esteem and confidence of medical students. Mistreatment of medical students during their clinical placements by interns, residents, consultants and patients has been recognised to have negative impact to students personally and professionally (61–64). Mavis et al. (62) discovered that the most common type of mistreatment is being humiliated publicly, followed by sexual, racial and gender.

According to the Medical School General Questionnaire administered by the Association of American Medical Colleges to all final year medical students from 2000 to 2012, clinical faculty and interns or residents were identified as the most frequent sources of mistreatment (62). There were more mistreatment occurred during the obstetrics and gynaecology, surgery and internal medicine clerkship (63). A study conducted by Cook et al. (61) found that students who experienced recurrent mistreatment are associated with high prevalence of burnout. In addition, mistreatment of medical students by patients in the clinical setting is not uncommon. Based on the self-reported

survey data collected by Zhu and Tan (64), 14% of clinical medical students were exposed to mistreatment by patients and their families, and most of them did not speak up or seek treatment. Besides, there is a high risk of needlestick injuries in medical students as 59% claimed to have suffered from at least one related injury in medical school which puts them at risk of blood borne diseases (65). The suggestions proposed include training students on skills to handle difficult situations, setting up a committee, developing a policy, promoting a culture of reporting, establishing a system to monitor the mistreatments experienced by students, providing counselling to the affected student and notifying the department involved (60–64).

Intellectual Well-being

Intellectual well-being is defined as mind stimulation enhanced through engaging in meaningful conversations which encourages lifelong learning (7). High-achievers in the clinical years were able to identify appropriate learning methods to achieve their goals and to cope with difficulties as compared to re-sitting students (41). As medical students progress to the clinical phase, their lifelong learning skills that involved taking opportunity to gain new knowledge and motivation in learning improve (66). To enhance their well-being, appraisal of learning approaches, support mechanisms and student-centred clinical postings should be promoted (41, 66).

There are several limitations identified from the articles included in this review. Cross-sectional study design does not identify of causal relationship. The generalisability of the findings was also limited as many studies involved only medical students from one institution (12, 55, 64); some included a small sample size of 150 or less (16, 23–24, 29, 35–36) and response rates of below 55% (14, 26, 46, 51, 60, 64). Besides, students had to recall from their memories to complete the questionnaires and this may lead to recall bias. The

strategies to overcome these limitations in future research include making announcement in lecture halls and sending reminders to students by email to increase the response rate. A longitudinal approach can be utilised to establish cause-and-effect relationships and to observe the trend of medical students' well-being across the course of study. To increase generalisability of the findings from future studies in Malaysia, questionnaires can be distributed online to an adequate sample size of medical students from both public and private universities across the states. This systematic review can also be improved by having two reviewers to screen for the articles independently, and another third reviewer to resolve any disagreement. Besides, to improve the quality of this systematic review, the Newcastle-Ottawa Scale can be applied to evaluate risk of bias in the studies included (67–68).

Future research could be directed towards the less explored physical, social, spiritual, occupational and intellectual aspects to enhance the understanding towards the overall well-being of clinical medical students in Malaysia. Of the five less explored well-being issues, both the occupational and physical aspects would be areas to look at as these are specifically impacted during the current situation of COVID-19 pandemic. Clinical placements are cancelled and replaced by online teaching (13), which may directly affects students' occupational well-being as they are not allowed to attend placements. It also leads to increased screen time that could cause a decline in physical well-being of students as a study by Vallance et al. (69) demonstrated higher risk of sleep problems in participants with more screen time. It is also important to identify possible factors that could result in the well-being issues from all aspects and to investigate effectiveness of prevention and coping strategies to ensure their well-being is maintained throughout the medical course.

CONCLUSION

In a nutshell, the definition of well-being is complex. This review discussed well-being issues with evidence from previous studies and demonstrated poor well-being in undergraduate clinical students especially from the emotional aspect. Stress, burnout, depression, anxiety, suicidal ideation, lack of exercise, smoking, bullying, low peer and family support, poor spirituality, mistreatment by clinicians and patients, and lack of motivation were common well-being issues encountered. It has also highlighted the importance of early screening and detection of well-being issues, and the integration of coping strategies in the curriculum to avoid devastating consequences to not only the students but also patients in their future clinical practice.

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