



Journal of Regional Medical Campuses

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DOI: <https://doi.org/10.24926/jrmc.v4i2.3620>

Journal of Regional Medical Campuses, Vol. 4, Issue 2 (2021)

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The Development of a Wellness Curriculum at a New Regional Campus: A Pilot Study

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Introduction

With burnout on the rise for healthcare professionals in both practice and training alike, there has recently been an increased focus on student wellbeing and resilience in medical education. Burnout is characterized by several symptoms, including emotional exhaustion, decreased empathy, and cynicism.¹ Burnout can also be accompanied by other mental health conditions, such as depression and anxiety. It is well documented that the demands associated with medical school challenge the personal wellness of students, leading to significant distress.^{2,3,4} In one study, a survey of fourth-year students from 6 medical schools revealed that 50% of the students expressed signs of burnout at graduation.⁵ This is especially remarkable given that matriculating medical students, when compared to age-matched controls, have lower rates of burnout and depression symptoms,⁶ suggesting that issues with burnout and mental health manifest over the course of a student's medical education.

A number of factors related to medical education are thought to contribute to the deterioration of personal wellbeing among medical students, including academic pressure, cognitive and physical workload, poor support systems, and sleep deprivation.³ In an effort to combat the decline in personal wellness, medical schools started to examine ways in which they could better support their students. As early as 2004, governing bodies such as the American Association of Medical Colleges (AAMC) and the Liaison Committee on Medical Education (LCME) called for "schools to rise to the challenge of the new understanding of the risks of medical training for trainees".^{2,7,8} A statement from the AAMC suggested that the medical education system prioritize the "health and well-being of students" in an effort to "improve the overall experience of medical education in the United States".⁷

Many of the early initiatives to address student burnout and distress have been described as "reactive" and took the form of increasing access to mental health services on campus.⁹ Additionally, school-wide campaigns

focused on reducing the stigma related to seeking mental health counseling.⁹ More recent efforts have taken a proactive approach to medical student wellness, including a wide variety of initiatives such as comprehensive wellness programs administered through the Office of Student Affairs, curricular changes, faculty development sessions about student wellness, and the incorporation of mindfulness-based stress reduction.^{9,10} Two schools, Vanderbilt School of Medicine and Saint Louis University School of Medicine, have described their initiatives in depth.

At Vanderbilt School of Medicine, a 3-tier program consisting of intensive advising, a school-wide "wellness cup" activity competition, and a longitudinal curriculum designed to emphasize personal and professional development for physicians-in-training was developed.¹⁰ The program is primarily administered through the Office of Student Affairs but has significant student involvement in the form of leadership and committee development. Fully incorporated in 2005, the program is based on the National Wellness Institute's Six Dimensions of Wellness.^{10,11} These 6 domains include Social, Physical, Spiritual, Occupational, Emotional, and Intellectual. The program has been well-received by students and continues to grow and evolve with student input.

Saint Louis University School of Medicine has developed a similarly comprehensive program. Over the course of 3 years, a "wellness curriculum" was incorporated into the pre-existing medical education structure. These changes include transitioning from a hierarchical grading structure to pass/fail grading, faculty development sessions about the importance of prioritizing student wellness, learning communities to increase levels of student engagement and strengthening relationships with faculty and peers, and a resilience program for students with sessions about stress reduction, imposter syndrome, optimistic explanatory styles, and energy management.⁹ The curriculum is administered over the 4 years of medical school. By starting to introduce concepts of resilience and wellness in the first year of

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training, it is believed that “good habits can be part of a daily schedule” and may help to slow or prevent the decline of mental health often observed in medical students between matriculation and graduation.¹⁰ Given that many medical schools are developing wellness programs such as those described above, it is important to capture the students’ experience of wellness. The Graduation Questionnaire (GQ), administered to all graduating medical students through the AAMC, now includes a section about “wellness” and seeks to ascertain how well a medical school addresses student concerns related to personal wellbeing and resilience.¹⁰ Saint Louis School of Medicine used the results of the GQ to assess the success of their program. Student satisfaction with the school’s wellness program increased on the Graduation Questionnaire from 3.6 to 4.4, with 5.0 being “completely satisfied” after implementation of the curricular changes.⁹ The integration of wellness and resilience into medical school curricula draws heavily on previous research about burnout and poor mental health outcomes in both health professionals and physicians-in-training.¹ It also reflects the understanding of what constitutes a comprehensive medical education and acknowledges the changing attitudes in regard to a medical school’s responsibilities for supporting and protecting student mental health. By focusing on how wellness programs are implemented and how successful they are at positively impacting students, more schools can develop curricula to meet the needs of their student bodies.

Specific Aims/Objectives

While the Graduation Questionnaire can be used to determine the impact of completely integrated wellness programs, and medical schools such as Vanderbilt School of Medicine and Saint Louis University School of Medicine have written about the short- and long-term effects of their curricular changes, there is little research describing the implementation and refinement of a wellness curriculum at a regional campus of an academic medical center. The relatively new Penn State College of Medicine University Park Campus (established as a 4-year campus in 2017) represents a unique opportunity to develop a comprehensive wellness program because of the flexibility of our curriculum and the small number of students. We sought to pilot a longitudinal wellness curriculum, run primarily through the Office of Student Affairs, for the 36 first, second, and fourth year students at the campus (at the time of the project, there were no third-year students). The project was modelled on the Six

Dimensions of Wellness from the National Wellness Institute (Social, Physical, Spiritual, Occupational, Emotional, and Intellectual), as was done by Vanderbilt School of Medicine.^{10,11} There was also a resilience and mindfulness focus that started in the first year of medical school, as was done by Saint Louis University School of Medicine.⁹

The specific objectives for our project included the following: 1) Develop a dedicated wellness program specific to first-year (MS1) students in their second semester, which did not previously exist, and 2) Create a companion program of inter-professional wellness exercises open to all teaching faculty (both academic and community-based), and all learners (residents, medical, physician assistant (PA), and nurse practitioner (NP) students) at the Penn State College of Medicine University Park Campus. Using the results from this pilot program, we plan to develop a more formal curriculum that is accessible, helpful, and convenient for all members of the University Park regional campus community.

Methods

In order to develop a wellness program for all students, resident physicians, faculty and staff at the Penn State College of Medicine University Park Campus, a number of different “project arms” were implemented. Those developing the pilot curriculum felt that the current wellness program was incomplete. Prior to the implementation of the pilot curriculum, second-year and fourth-year medical students attended Kienle Groups (named after Drs. Lawrence F. and Jane Witmer Kienle). These interactive sessions provide a dedicated time each week for self-reflection, group dialogue about humanism in medicine, and professional development for students actively involved in patient care and are believed to contribute to overall student wellness; the groups are typically well-received. Before the pilot program, there were also sporadic activities advertised as “wellness workshops” offered to all members of the University Park regional campus community. While certainly providing some benefit, the Kienle sessions and various wellness activities did not constitute a comprehensive wellness program and overall there lacked a formalized, consistent curriculum. We felt it was especially important to have a wellness curriculum in place for first-year medical students to create a culture of vitality upon matriculation and to fully maximize the possibility for a longitudinal wellness curriculum offered throughout all 4 years of medical training.

An institutional grant created to specifically advance wellness and vitality among healthcare professionals within the Penn State College of Medicine was secured for the development and implementation of this pilot program. This competitive grant was funded by the College of Medicine's Office of Faculty Development. It was entitled the Office of Faculty and Professional Development Wellness Mini-Grant Program. The first part of the project included a series of required formal sessions for first-year medical students during regularly scheduled class time. There were 4 sessions in total, led by a community-based professional health and wellness coach. A portion of the grant was used to pay for the coach's services. Each session focused on a different domain from the National Wellness Institute's Six Dimensions of Wellness.¹¹ Session One was "Professional;" Session Two was "Intellectual," Session Three was "Spiritual," and Session Four was "Emotional." Each session was co-created by the wellness curriculum designers, the medical education team, and the professional health and wellness coach. These mandatory sessions were offered during a regularly scheduled course in the MS1 curriculum, 4 times throughout the second semester. Students completed an anonymous paper pre-survey for each session, containing questions addressing the topic for that session. After the completion of the 4 sessions, students completed an anonymous post-survey. Paper surveys were used for convenience. Students could complete the survey at the beginning of class, thus ensuring that all responses were collected in a timely fashion. A pre-survey was given before each of the 4 sessions and one post-survey was given at the completion of the last session. Each pre-survey had general wellness questions as well as questions specific to the professional, intellectual, spiritual, and emotional domains of wellness. The second part of the project focused on the "Physical" wellness domain and included students, faculty, and staff. A 10-session traditional Tai Chi course was offered in the evenings from 6:00pm to 7:30pm at the main University Park educational facility. The courses were taught by a Tai Chi practitioner experienced in teaching Tai Chi to beginner-level students. A portion of the grant was used to pay for the instructor's time. The Tai Chi classes were advertised to all members of the University Park community, including all learners, residents, attending physicians, teaching faculty, and staff. The sessions were optional and individuals could attend as many or as few times as their schedules allowed, at no charge. It was a flexible initiative offered at a convenient

time in the evenings. Before their first session, participants completed a paper pre-survey with questions about wellness and physical activity and their prior experience with Tai Chi. After their class, participants were asked to complete a post-survey. Paper surveys were used because participants often did not have a computer with them during class and the researchers wanted to ensure that all participants completed a survey promptly. Hot tea and flavored water were offered at all sessions.

Lastly, the third part of the project was designed to address the "Social" wellness domain. Several watercolor sessions were advertised to all members of the University Park campus community. The watercolor sessions were offered in the evening from 6:00pm to 7:30pm at the main University Park campus facility. Sessions were facilitated by a wellness curriculum designer and faculty member who has experience with teaching painting and creative arts to students of all levels. The sessions were advertised as an informal space for people to "relax, paint, and talk". All of the supplies for the sessions were provided at no cost to the participants. At the start of the session, participants were asked to complete an anonymous paper pre-survey. At the completion of the session, participants completed a post-survey. If a participant attended more than one session, they completed the corresponding pre- and post-survey. Some of the later sessions focused on a specific medical topic, including ophthalmology, infectious diseases, and pathology, where students painted images associated with each specialty, such as retinal hemorrhages, Staph aureus and melanoma. Collectively, each arm of the project contributed to one of the Six Dimensions of Wellness in an effort to create a well-rounded curriculum for all students. The pre- and post-surveys from the formal MS1 educational sessions, the Tai Chi sessions, and the painting sessions were reviewed on REDCap to assess the reach and impact of each project component.

Results

All pre- and post-surveys from the watercolor sessions, Tai Chi sessions, and mandatory MS1 sessions were reviewed on REDCap, a secure web application for building and managing online surveys and databases. Information from the surveys was collected to better understand the student, faculty, and staff response to the variety of new wellness programs at the University Park regional campus. There were 34 unique participants across the 3 study arms. For the mandatory wellness classes, all 13 first-year students attended because it was

a curriculum requirement. A total of 20 individuals participated in the watercolor sessions. There were 15 participants for the Tai Chi sessions (Table 1).

Table 1. Participants in MS1 sessions, Tai Chi sessions, and Watercolor sessions.

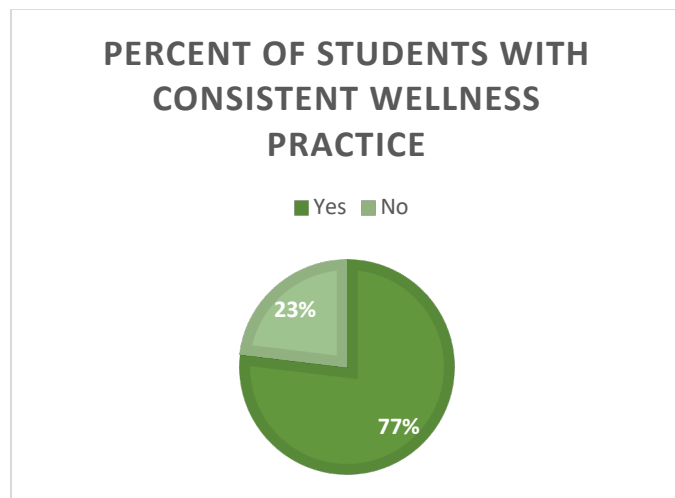
<i>Session Type</i>	<i>Number of Participants</i>	<i>Percent Medical Student</i>
<i>MS1 Lecture Session</i>	13	100% (13/13)
<i>Tai Chi Session</i>	15	27% (4/15)
<i>Water Color Session</i>	20	60% (12/20)

A. Mandatory Wellness Didactic Sessions (Professional, Intellectual, Spiritual, and Emotional Domains of Wellness)

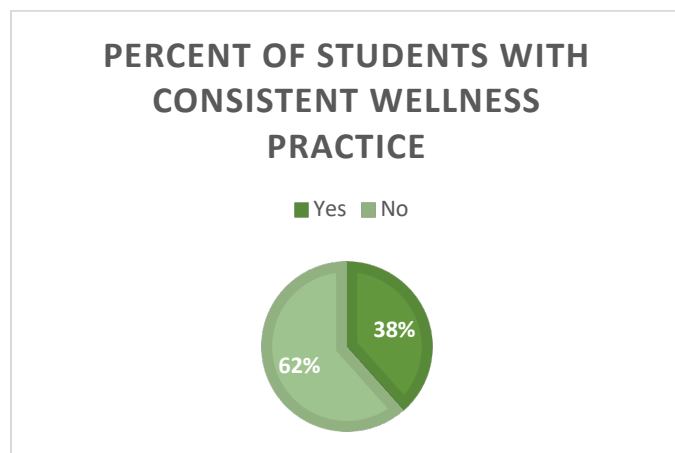
Of the 13 student participants, 10 students stated that they had a consistent wellness practice (Graph 1). Of the students with a wellness practice, there were a wide variety of activities in which the students participated, including physical exercise, meditation and/or prayer, socializing with friends, and watching television. For students with a wellness practice, the amount of time devoted to the practice ranged from 2 times per week to 7 times per week. Eight students indicated that their wellness practice was moderately or somewhat effective at helping them maintain their wellbeing. For students without a wellness practice (N=3), the limiting factors included lack of available time and lack of interest in developing a wellness practice. A majority of students (58%) stated they were “extremely open” to making a regular wellness practice part of their lifestyle.

In the post-survey, the first-year students were again asked about general wellness (Graph 2). Interestingly, a fewer number of students stated they had a consistent wellness practice (N=5, compared to the 10 students who had a consistent wellness practice at the time of the pre-survey).

Graph 1. Pre-survey results of students with a consistent wellness practice.



Graph 2. Posts-survey results of students with a consistent wellness practice.



When asked what types of wellness activities they would like to see offered at the University Park campus, most students indicated they would enjoy arts-based activities and physical activity. There was also a request from 2 students to have “less forced wellness” and more “time alone”. Six students did not feel the mandatory 4 sessions on wellness were a valuable part of their medical education. However, more than half (55%) of the students strongly agreed or agreed somewhat that a dedicated first-year wellness curriculum would be a critical component of the Penn State College of Medicine University Park Campus curriculum. Similarly, 89% of students indicated that it was the responsibility of the medical school to provide wellness activities as part of the curriculum.

B. Tai Chi Sessions (*Physical Domain of Wellness*)

There were 15 total participants in the Tai Chi sessions. Four of the participants were students and the remaining 11 were clinical faculty or staff. For the Tai Chi pre-survey, the majority of participants indicated they had a wellness practice (N=9). The wellness practices listed were overwhelmingly fitness and exercise-based. All respondents stated that their wellness practices were only somewhat or moderately effective at achieving or maintaining wellness. The biggest limitations to a consistent effective wellness practice were time, motivation/sustained commitment, and knowledge about effective wellness activities and resources. Participants attended the Tai Chi classes for a number of different reasons, most commonly stress relief (Table 2).

Table 2. Reasons for participating in Tai Chi sessions (percent total is less than 100 as some respondents did not select a reason).

<i>Reason for attending</i>	<i>Percent (N)</i>
<i>Exercise/fitness</i>	13% (2)
<i>Stress relief</i>	34% (5)
<i>Maintaining balance</i>	20% (3)
<i>Promoting wellness at school and/or my workplace</i>	13% (2)
<i>Social connection</i>	8% (1)

At the time of the Tai Chi post-survey, 6 participants indicated that they had a regular wellness practice, which was a decline from the number of people in the pre-survey. Five people stated that Tai Chi was moderately or somewhat effective at stress relief and/or as an exercise class, and 2 people said they would be extremely likely to attend Tai Chi classes if they were regularly offered at the University Park campus, although none of these respondents were students.

C. Watercolor Painting Sessions (*Social Domain of Wellness*)

Twenty participants were involved with the watercolor sessions. Twelve were students. Of the 12 students who participated, 9 were first year students. Eleven people stated that their current wellness practice was only somewhat or moderately effective at maintaining wellness. Student participants indicated that the biggest limiting factor that they have in maintaining their own wellness is time. Fourteen participants indicated that

they attended the watercolor session primarily for stress relief (Table 3).

Table 3. Reasons for participating in watercolor sessions (percent total is greater than 100 as respondents could select more than one reason for attending).

<i>Reason for attending</i>	<i>Percent (N)</i>
<i>Stress relief</i>	70% (14)
<i>Maintaining balance</i>	40% (8)
<i>Promoting wellness at school and/or my workplace</i>	40% (8)
<i>Social connections with colleagues</i>	45% (9)

Fifty percent of participants felt that the watercolor workshop was an effective wellness-based activity. When asked about additional wellness activities that could be offered at the University Park campus, the overwhelming response was for creative activities, such as arts and crafts nights, sculpture, or photography. Nineteen of 20 (95%) of these respondents felt that a health system, such as those associated with an academic medical center, are moderately or extremely responsible for providing wellness-based activities to students, faculty, and staff.

Of the 34 study participants, 20 (58.8%) indicated they would be extremely or moderately likely to attend future wellness activities offered at the University Park Regional Campus.

Discussion

The pilot program spanned a period of 6 months, from January 2019 to June 2019. Overall, attendance at the events was low; this was especially true for the Tai Chi sessions. A very small number of students attended the Tai Chi sessions. Faculty and staff participated in the Tai Chi sessions more than students, suggesting that certain wellness-related activities might be of interest to different groups at the regional campus.

There are a number of ways that could improve the implementation of a formal wellness curriculum in order to maximize attendance. Many students indicated that one of the reasons they didn't have a formal wellness practice was due to lack of time. The time constraint component may be the reason attendance at the optional events was limited. When thinking about a wellness program for medical students, it is certainly

difficult to reconcile the challenge of available time. Medical school itself is a demanding, time-intensive endeavor and the traditional curricular components of classwork and clinical experiences leave little room for additional activities. As such, students may choose to spend what limited time they do have pursuing their own personal interests rather than engaging in school-based wellness events. This was captured in the survey responses of students requesting less “forced” wellness and more time to pursue their own interests.

A student’s wish for more personal time and fewer school-sanctioned wellness activities must be balanced with the responsibility of medical schools and medical educators to support students in ways that extend beyond academics. It is unclear how medical schools can devote an appropriate amount of time to wellness activities while not overwhelming a student’s already full schedule. The fact that some survey responses indicated that it was a health system’s responsibility to provide wellness activities, as well as the responses from some students stating they didn’t have the knowledge or tools to develop their own wellness activities, suggests there is some expectation and responsibility for a medical school to provide these resources to students regardless of the challenges related to time constraints or other barriers to wellness.

Similarly, a major challenge of implementing a formal wellness curriculum is that the effect of the program is limited by the number of students who choose to engage. This is well-described by other individuals who have attempted to design such programs.⁹ It is possible that the students who selectively choose to attend wellness-focused programs are those who already have an interest in wellness, while those who do not attend are the ones who may be struggling with balancing the competing demands on their time. The very fact that students aren’t attending a wellness event might suggest that they feel they don’t have room for wellness activities in their daily life, given the other numerous personal and academic demands facing a medical student. In the pre- and post-surveys completed by MS1s, there was a 50% decrease in the number of students consistently prioritizing wellness over the course of a semester which may represent growing time pressures and other obligations. Similarly, more people attending the Tai Chi sessions indicated they had a consistent wellness practice at the time of the pre-survey compared to the post-survey. This suggests a possible decline in wellness-related activities over a several month period. The challenge, therefore, is how to reach the people who

need the most help without adding additional stressors and further monopolizing their time. It may require an overall change in the culture of medical education and academic medicine in order to give students and faculty peace of mind when they choose to devote time to their own wellbeing rather than continue to strive to meet the exceptionally high educational demands of medical school.

This 6-month long pilot program was designed to inform the development of a more robust, long-term wellness curriculum. After the project was underway, it became clear that it would have been helpful to first conduct a formal needs assessment of the student body. This could have made it easier to develop more impactful programming that was specifically suited to students’ needs. It would have likely been more focused on creativity and the arts, as these types of activities were predominantly favored by students. Other limitations associated with this pilot program included the low attendance, which makes it difficult to generalize these findings to larger medical schools. Additionally, this pilot program was completed at a regional medical campus; students who are interested in a unique medical education program self-select to interview and attend school at the regional campus. As such, as a whole the students surveyed in this study may differ fundamentally from students who choose to attend a more traditional curricular program.

Despite these challenges and limitations this pilot program served an important purpose. It provided insight into the understanding of student wellness and the academic medical center’s role in promoting student wellness. With this knowledge, the appropriate next steps can be taken to more effectively address the wellness needs of medical students. Certainly, the first step for any school interested in designing a wellness curriculum should be to conduct a Needs Assessment of the students to better understand preferences related to activity type, frequency of activity, and time of activity. Our post-survey data indicated that the watercolor painting sessions were extremely popular, so a decision was made to optimize students’ exposure to the creative arts. Consequently, a focus on the arts will be the foundation for the next iteration of a formal, longitudinal wellness curriculum at our regional campus. While the institutional grant funding used for the original pilot program described here ceased in June of 2019, other avenues of funding are being explored for future curricula. Additionally, the limited student response to this program suggests the need for increased student

involvement in the planning and implementation of wellness programs. As such, a goal of the University Park campus is to establish a student-led Wellness Committee, charged with organizing wellness-oriented events and maintaining a sense of morale among the student body.

It is imperative to continue to think intentionally about developing helpful and sustainable wellness curricula in medical schools. In order to effectively address the challenges of burnout, and the high rates of depression and anxiety among medical students, the status quo must change. It is not acceptable for medical school curricula to place such high demands on medical students without providing concurrent instruction for balancing those demands with personal wellbeing and resilience. Providing support for work-life balance and overall wellness is likely to create physicians in both training and practice who are more effective and resilient.

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