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Wellness Matters: A Website Content Analysis of Wellness Resources in Academic Libraries Supporting Medical Schools in the United States

By Rebecca A. Costa

Readers: Dr. Stacy Creel, Dr. Jennifer Steele

INTRODUCTION

Medical students experience high levels of stress due to the demands of their studies and the impact of the healthcare environment, which often negatively affects their physical and mental health. Medical colleges and the associated accrediting bodies for medical education continue to explore factors adversely affecting student wellbeing. Many have initiated policies and strategies to mitigate known stressors. However, despite institutional efforts to promote wellness, a study suggests that 82 percent of medical students continue to experience distress (Dyrbye et al., 2011). Wellness must become a part of the institutional culture. A holistic approach to integrating wellness into the medical school curriculum, programming, and physical spaces has proven most effective (Franzidis and Zinder, 2019).

By reputation, libraries are often considered safe and confidential communal spaces wherein students typically spend long hours in academic settings. Librarians provide their users with reputable information, often connecting people, places, and services while advocating for equality and diversity (Ramsey & Aagard, 2018). While it is standard for academic libraries to support education and research, many libraries also offer space or dedicated programming to promote the wellness and self-care of their users. Addressing student wellness demonstrates responsiveness to institutional priority and efforts to meet evolving student needs. In addition, it serves as an excellent opportunity for libraries to innovate and collaborate visibly in the community they support, further committing to a culture of wellness.

Purpose Statement

This study examined wellness initiatives, resources, services, and events offered in academic libraries that support medical schools in the United States.

Research Questions

R1. What wellness resources, services, or events are offered by academic libraries supporting medical schools in the United States?

R2. What are the top ten most frequently identified wellness services offered at academic libraries that support medical schools in the United States?

R3. What characteristics, including total university and total medical school enrollment and whether the institution is public or private, are common among academic libraries supporting medical schools that offer wellness resources, services, or events?

Definitions

Burnout Syndrome: Physical, emotional, or mental exhaustion accompanied by decreased motivation, lowered performance, and negative attitudes toward oneself and others. It results from performing at a high level until stress from extreme physical or mental exertion takes its toll (VandenBos & American Psychological Association, 2015).

Hettler's Six Dimensions of Wellness: A model which defines wellness along six dimensions: social, spiritual, physical, intellectual, emotional, and occupational functioning (Dixon & Smith-Adcock, 2018).

Maslach Burnout Inventory (MBI): A method for the evaluation of burnout on three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. It consists of 22 statements about feelings and attitudes (VandenBos & American Psychological Association, 2015).

Medical Education: Course of study directed toward persons seeking to become physicians (Scarborough, 2020).

Medical School: An educational institution that teaches medicine and awards a professional

degree of Doctor of Medicine (M.D.) or Doctor of Osteopathic Medicine (D.O.) (Segen, 2002).

Resilience: A dynamic process of successfully adapting to adverse and stressful situations through mental, emotional, and behavioral flexibility that is essential for maintaining psychological wellbeing (VandenBos & American Psychological Association, 2015).

Webometrics: Methods to support web research in the social sciences and humanities. It involves investigating web-based content, primarily using quantitative methods not specific to a discipline (Thelwall, 2018).

Wellness: A dynamic state of physical, mental, and social wellbeing often viewed as the result of four key factors over which an individual has some control: biology, environment, lifestyle, and health care management. It is a concept of promoting good mental and physical health (VandenBos & American Psychological Association, 2015).

Delimitations

This study focused on exploring wellness services in academic libraries that support medical education in the United States. For the purpose of this research, medical education and medical school are used interchangeably. This study explicitly considered medical education as an educational institution awarding a degree of Doctor of Medicine (M.D.) or Doctor of Osteopathic Medicine (D.O.). Medical schools outside the continental United States, including those in U.S. territories and Puerto Rico, were excluded. Further, medical schools without current accreditation by the Commission on Osteopathic College Accreditation (COCA) and The Liaison Committee on Medical Education (LCME) were omitted. Only resources on the medical libraries' websites were included. Wellness resources with sponsorship outside of health sciences or medical school libraries were excluded, including those within main university libraries. This study included programming outside of the physical library space so long as it was sponsored and promoted by the medical school libraries. Wellness programs communicated or advertised through other sources such as flyers, posters, email, or social media were excluded due to time limitations and study design. Data were omitted from libraries with website access

errors and those which were not publicly accessible at the time of collection

Assumptions

For the purpose of this study, certain conditions will be assumed to ensure accurate and reliable data collection. It is assumed that library websites will accurately represent current wellness programming at the time of data collection.

Importance of the Study

Supporting the well-being of medical students is vital to developing a healthy physician workforce, and it is a subject demanding attention. The harmful effects of medical education and the growing mental health challenges medical students face are well recognized (Dyrbye et al., 2005; Dyrbye et al., 2014; Erschens et al., 2019; Rotenstein et al., 2016; Slavin, 2019). Addressing medical student wellness is a complex and systemic issue in which academic libraries have the opportunity to support on an individual level. The Association of College and Research Libraries (ACRL) Research Planning and Review Committee recognizes libraries growing involvement in supporting wellness initiatives on campuses as one of the top trends in the academic library setting (Benedetti et al., 2020).

While published studies have examined the wellness resources available to college students, which may include medical students within the academic library setting, this study focuses specifically on wellness resources in libraries supporting medical school education in the United States. The intent is to contribute to the body of scholarly LIS literature. Further, it may serve as a blueprint for institutions seeking to improve or enhance their wellness programming and services.

LITERATURE REVIEW

Medical Student Wellness

Several studies have demonstrated higher levels of depression, burnout, and suicidal ideation in medical students than in the general public (Rotenstein et al., 2016; Erschens et al., 2019; Dyrbye et al., 2014). However, despite these statistics, only 22 percent of medical students receive formal mental health counseling, typically citing time constraints and stigma as barriers (Butcher et al., 2021). Those who experience burnout while in medical school often have persisting difficulties in the professional career

phase (Drydre, 2014). In addition, considerable socioeconomic implications result from physician burnout, notably higher rates of medical errors and an indirect increase in healthcare expenditures (West et al., 2018). The emergence of the novel SARS-CoV-2 virus in 2019 brought forth new challenges for medical education. Trending research suggests the pandemic has exacerbated issues that contribute to medical student burnout (Nikolis et al., 2021; Harries et al., 2021). A survey by Zis et al. (2021) identified that the digital learning environment, particularly in medical education, might significantly risk increased mental health struggles and burnout.

Wellness Resources in Medical Schools

Dyrbye et al. (2005) identified that medical school training led to unintended adverse consequences on student mental health and wellness. In addition, a study performed at the St. Louis School of Medicine measured levels of well-being and burnout by administering the Maslach Burnout Inventory survey to students at the beginning and during medical school, concluding mental health deteriorated significantly over the four years (Slavin, 2019). Other studies have also demonstrated that medical training appears to be the peak time of distress among physicians (Dyrbye et al., 2014). As a result, medical schools have taken the initiative to improve student well-being by reducing unnecessary stressors. Some of their efforts have included curricular changes, mentoring, stress management skills, resilience training, mental health education, access to resources and treatment, measures to reduce stigma, and wellness programming (Slavin, 2019; Bagby-Stone, 2021; Dyrbye et al., 2019).

Hettler's six dimensions of wellness suggest a holistic approach to optimal human health inclusive of social, spiritual, physical, intellectual, emotional, and occupational components. Considering this model, many medical schools have begun to provide a broad range of activities to promote self-care, reduce stress, and build social support. For example, a survey of wellbeing activities offered at 27 U.S. medical schools identified activities directly supporting specific cultural, ethnic, or racial groups, yoga, and other physical activity events, and those encouraging social wellness to be well received and attended by students (Drybye et al., 2019). Another study recognized that medical students identified wellness as a significant issue equipped with insufficient

resources, although they did acknowledge a solid opposition to mandated programming (Butcher et al., 2021).

Wellness Resources in Academic Libraries

In recognition of the increasing global concern of mental health difficulties amongst college students, institutions have prioritized wellness. The academic library and the role of the academic librarian are experiencing a changing context in response to societal and educational changes, which is leading to the reconceptualization of the services they provide (Llewellyn, 2019). Ramsey and Aagard (2018) suggest that the library is well placed as a physical space to support student wellbeing, as it is often at the center of the campus and provides extended hours and flexible spaces. Conversely, Walton (2017) challenges whether wellbeing should be a focus of a library considering constraints in budgets, scarce resources, and a lack of competencies and standardization. While these concerns are valid, providing wellness services in academic libraries is trending. It has been appreciated that initiatives geared towards wellness should be addressed holistically and exist as a part of campus culture.

While it is standard for academic health libraries to support education and research, many libraries also offer space or dedicated programming to promote self-care and wellness (Herron, 2016; Funaro et al., 2019; Ramsey & Aagard, 2018). The literature cites wellness programs integrating therapy dogs and physical activities such as yoga are popular offerings (Casucci & Baluchi, 2019; Lannon & Harrison, 2015). Academic librarians have long recognized the value of providing additional programming for students in support of finals week. Currently, there is a trend of permanently supplementing traditional student success initiatives with a range of nontraditional programs that support student holistic wellbeing, such as services that address finances, food insecurity, mental health challenges, and health needs (Meyers-Martin & Borchard, 2015; Henrich, 2020). The addition of wellness programming provides an opportunity for academic libraries to collaborate and foster a community environment.

Webometric Studies and a Comparison of Similar Methodology

Webometric research has been frequently performed in library and information science. This type of

research is utilized to explore features of web pages and content analysis of programming, collections, and resources. There are published studies that independently examined wellness services in public, academic, and special libraries. In addition, there is published literature examining wellness within medical school programming. At the time of conception of this study, no published studies were identified that utilized webometrics to explore the available wellness resources within medical schools or academic libraries that support medical education.

Several studies employing a methodology similar to this study were identified. Studies performed by Rushing, Yoon & Shultz, and Patil used website content analysis to assess services and programming provided by libraries (Rushing, 2019; Yoon & Schultz, 2017; Patil, 2020). Patil (2020) performed a webometric content analysis to identify preventive health programs in public library systems. Like this study, Rushing (2019) and Patil (2020) employed quantitative content analysis of library websites with at least one thematic analysis of library programming, addressing their research questions. A study by Pollock et al. (2021) evaluated the content and functionality of U.S. medical school websites. Similar to this study, their sampling methods culminated a list of the 192 accredited medical schools in the United States through website links obtained from the Medical School and Admissions Requirements (MSAR) and the American Osteopathic Association. In addition, similar to this study design, medical schools without a functional website, or a website that could not be found, were excluded from their study. Wellness resources were not collected or measured within their research.

METHODOLOGY

Academic library webpages serve as instructional sources for students and are often the most accessible vehicle to discover library services. This study utilized webometrics to explore wellness resources, services, initiatives, programs, and events offered in libraries supporting medical education. Characteristics of each school were also analyzed. To prevent the need for inference and to provide the most considerable impact, sampling was inclusive of those libraries with public-facing websites supporting all accredited medical schools in the United States.

The 207 accredited medical school names and website links were obtained from the Medical School and Admissions Requirements (MSAR) online database and the American Osteopathic Association (AOA) websites. In addition, the characteristics of each parent university and medical school were gathered from the individual school websites. This included total university and medical school enrollment and whether the institution is public or private. Finally, listings that omitted webpage information or contained broken links were located through a general or platform-specific search engine, such as Google.

Each parent university, medical school, and medical school library webpage was accessed. The school library resources were identified from the respective medical school landing web page. Variations and differences in the design of each library webpage were expected. Each site was systematically evaluated similarly to maintain uniformity in data collection. The university webpages were explored using the search bars to determine total enrollment in the individual university and medical school, respectively.

Similarly, once identified, the library webpage was thoroughly analyzed to identify those services considered wellness resources for students. Subject headings, subject guides, search bars, linked electronic newsletters, and event calendars were examined. The web browser CTRL + F function was employed within each webpage to search for the following key terms: wellness, healthy, stress, mental health, depression, anxiety, suicide, burnout, resilience, therapy, workshop, events, classes, and services. If the search identified a key term, further evaluation verified that the finding was applicable for data collection. Falsely identified programs and resources were not collected.

The acquired data was primarily quantitative. The observation was made on the presence and frequency of wellness initiatives and the characteristics of the respective schools. The wellness resources at each institution were identified and aggregated. In addition, whether the university is a public or private institution was determined and collected. Lastly, characteristics for each school were compiled, which included whether the medical school is allopathic (M.D.) or Osteopathic (D.O.), the total enrollment

number of students in the university inclusive of undergraduate, graduate, and professional programs, and the total enrollment of students in the medical school.

The data were recorded in an Excel spreadsheet for compilation purposes. First, a list was created, including all accredited medical schools in the United States. Next, a simple yes or no column was used to record the presence of wellness resources, services, or events. If a resource was identified, a description of that service or event was described in a separate column. Finally, individual columns were used for each school to collect total university enrollment, medical school enrollment, and whether the school was a public or private institution.

The data were analyzed to address each research question. The excel spreadsheet sort features were employed. A qualitative thematic analysis determined the top ten most frequently identified wellness services offered. A simple statistical approach was used to detail the count and percentage of medical school libraries offering wellness resources and the correlation to school characteristics. Tables and figures were created for data display.

Limitations

It is recognized that utilizing websites to gather data may not always be reliable as there is variability in the usability and comprehensiveness of individual web pages. Library web pages may not accurately reflect the services that are offered. Some websites may showcase programs, while others provide minimal information. Information may be challenging to locate, resulting from website design flaws. It is recognized that due to the global pandemic, library services may be limited. Additionally, data was limited to website content from a window between February 13, 2022, through

February 27, 2022. Information on the web pages that fell outside of this data collection period may have been different.

RESULTS

R1. What wellness resources, services, or events are offered by academic libraries supporting medical schools in the United States?

Table 1 is a cumulative list of wellness resources, services, and events offered by academic libraries supporting medical schools in the United States. There were 44 unique resources, services, and events identified within 37 out of the 207 medical school libraries in the United States. This is equal to 18 percent of medical school libraries. Of the 44 offerings identified in this study, six or 14 percent were offered within more than one institution. Wellness resources per library ranged from one to 10 resources. The most common recurring offering was wellness resource guides. Comprehensive details of the school library offerings can be found in Appendix A.

R2. What are the top ten most frequently identified wellness services offered at academic libraries that support medical schools in the United States?

This study identified 96 total wellness resources within the medical school libraries. Harvard Medical School Library had the most significant number of resources, with 10 identified. There were 17 libraries with a single wellness resource identified. The most common wellness service identified was a wellness resource guide followed by lactation rooms. Table 2 displays the most frequently occurring wellness resources, services, and events identified in libraries supporting medical schools in the United States. Similar wellness services with differing nomenclature were grouped together. The complete list can be found in Appendix A.

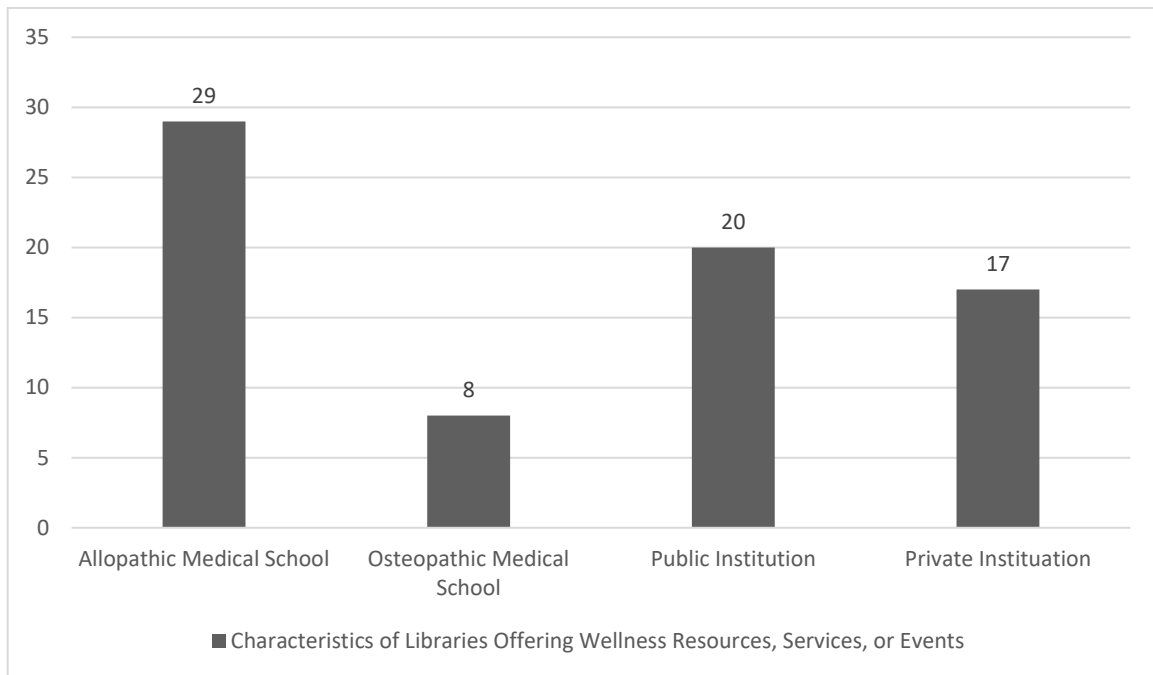
Table 1. *Wellness Resources, Services, or Events*

Wellness Resource Guide	Kindness Rock Garden	Video Games
Coloring Books	Create-a-Comic	Mobile Wellness Applications
Pet Therapy	Button Making	Art Show
Storytelling	Gratitude Board	Afternoon Tea
Community Garden	Meditation Room	Stress Care Packages
Exercise Equipment	Standing Desks	Wellness Book Display
Board Games	Art Exhibit	Local Wellness Information
Student Kitchen	Flu Shot Clinic	Free Snacks and Drinks
Nap Pods	Happy Lights	Photobooth
Treadmill Desks	Recreational Reading	Book Club
Writing to Heal	Wellness Room	Origami
Bracelet Making	Creative Monthly Meeting	Healthy Recipes
Coffee Talks	Walking Wednesday	Family Entertainment Kit
Chair Massage	Quarterly 5k Run	Drag Queen Story Hour
Writing to Heal	Wellness Room	

Table 2. *Top Ten Most Frequently Identified Wellness Resources, Services, or Events*

Wellness Service	Frequency	%
1. Wellness Resource Guide	12	12.5
2. Lactation Room	11	11.5
3. Arts/Crafts/Creativity	9	9.4
4. Wellness, Meditation, Reflection, or Prayer Room	8	8.3
5. Pet Therapy	7	7.3
6. Book Talks, Book Club, Storytelling, or Recreational Reading	6	6.3
7. Games and Puzzles	6	6.3
8. Exercise	6	6.3
9. Mindfulness, Meditation, or Wellness Applications	5	5.2
10. Medical therapy (Massage, Flu Shots, Wellness Kits)	5	5.2

Figure 1. *Characteristics of Libraries Offering Wellness Resources, Services, or Events*



R3. What characteristics, including total university and total medical school enrollment and whether the institution is public or private, are common among academic libraries supporting medical schools that offer wellness resources, services, or events?

This study identified 37 or 18 percent of medical school libraries offering wellness resources, services, or events. Of these schools, 20 are public schools, and 17 are private. Eight schools were identified to provide between four and ten wellness resources. Six of these schools are public schools, and two are private schools. The average total school size of the 37 schools is 38,558 students. This is a significantly lower enrollment than the group of medical schools that offer greater than four wellness resources. The average total school size of the eight medical school libraries offering greater than four wellness services is 70,284 students. The medical school size ranges from 80 students to 1,527 students. The average medical school size of the 37 schools offering any wellness resource was 655, while the average medical school size of those libraries offering greater than four wellness resources was slightly higher at 700. The second-highest number of wellness resources (8) has a medical school size limited to 80 students. Wellness resources were identified in 18

percent of medical school libraries overall. This included 14 percent of osteopathic medical schools and 20 percent of allopathic medical schools. Figure 1 highlights this data. Appendix B provides the details for all 37 schools.

DISCUSSION

This study revealed that while there has been demonstrated awareness in academic libraries supporting student well-being and the initiative for medical schools to incorporate wellness programming, wellness resources were identified in only 18 percent of medical school libraries overall. There were 44 unique wellness resources identified, and many were previously cited as offerings in academic library wellness programming (Herron, 2016; Funaro et al., 2019; Ramsey, & Aagard, 2018). The literature frequently cites wellness programs integrating therapy dogs and physical activities (Casucci & Baluchi, 2019; Lannon & Harrison, 2015). This aligns with the findings of this study. Pet therapy was the 5th most frequently offered wellness service. Respectively, exercise was the eighth most frequent wellness resource identified in this study.

Wellness resources were offered in 20 percent of allopathic and 14 percent of osteopathic medical school libraries in this study. The distribution of resources in public schools (54%) vs. those provided in private schools (46%) were statistically similar. More resources in colleges and universities were correlated with larger total enrollment. The average school size of those medical schools offering any wellness resource was 38,558 students, while the schools offering between four and 10 resources nearly doubled to 70,284 students. The schools offering between four to ten resources had an average medical school size of 700. In contrast, the average medical school class size of those schools offering any wellness resource was 655 students. There was a surprising outlier in the findings. A medical school with a total enrollment of 284 students and a medical school class size of 80 students offered the second-highest number of wellness resources (8). This school fell just behind Harvard University Medical School Library, which offered 10 wellness resources.

A noted limitation of this study was the concern that library webpages may not accurately reflect the offered services, or the information would be challenging to locate. In general, it is noted that the overall webpage design for medical school library webpages was a simple and limited build and design. The libraries overall offered very standard and similar services. These typically included instructions on navigating the library resources, which were generally medical databases. Programming overall was limited. It is possible that the school parent or main library offered more resources, which may be explored in future research.

The emergence of the SARS-CoV-2 virus and the subsequent pandemic presented unique challenges for academic libraries. It is possible that the need for social distancing and the lack of the ability to gather and use the physical library space may have resulted in a limitation of wellness service and program offerings. Studies have identified an overall increase in mental health concerns of medical students during the pandemic (Nikolis et al., 2021; Harries et al., 2021). This is indicative of an increase in the necessity of wellness services. It may be beneficial to reassess the wellness resources in the post-pandemic period for a more accurate representation of what is available.

CONCLUSION

Academic libraries serving medical schools offer a range of wellness services. These offerings demonstrate the responsiveness to the institutional priority of supporting the wellness of medical students. There is an opportunity for libraries to contribute to campus wellness initiatives. In addition, academic libraries may lead innovative practices, further serving as an example of the community-oriented service model. The addition of such wellness services can enhance the student experience and outcomes. Future research exploring wellness initiatives in libraries supporting medical education inclusive of the impact of these services may help establish best practices.

REFERENCES

- Bagby-Stone S. (2021). Creating space for well-being in medical school and beyond. *Missouri Medicine*, 118(1), 50–54.
- Benedetti, A., Boehme, G., Caswell, T. R., Denlinger, K., Li, Y., McAllister, A. D., Quigley, B. D., Soehner, C. B., Wang, M., & Wesolek, A. J. (2020). 2020 top trends in academic libraries. *College & Research Libraries News*, 81(6), 270. <https://doi.org/10.5860/crln.81.6.27>
- Butcher, M. R., Thompson, K. M., Williams, M. K., Cooke, B. K., & Merlo, L. J. (2021). Assessment of student perspectives on improving wellness in medical school: Qualitative results from a cross-sectional survey of medical students in Florida. *Advances in Medical Education and Practice*, 12, 1067–1079.
- Casucci, T., & Baluchi, D. (2019). A health sciences library promotes wellness with free yoga. *Journal of the Medical Library Association JMLA*, 107(1), 80–88.
- Dixon, A. L., & Smith-Adcock, S. (2018). Wellness. In R. J. R. Levesque (Ed.), *Encyclopedia of adolescence* (2nd ed.). Springer Science+Business Media.
- Dyrbye, L. N., Harper, W., Durning, S. J., Moutier, C., Thomas, M. R., Massie, F. S., Jr, Eacker, A., Power, D. V., Szydlo, D. W., Sloan, J. A., & Shanafelt, T. D. (2011). Patterns of distress in U.S. medical students. *Medical Teacher*, 33(10), 834–839.

- Dyrbye, L. N., Sciolla, A. F., Dekhtyar, M., Rajasekaran, S., Allgood, J. A., Rea, M., Knight, A. P., Haywood, A., Smith, S., & Stephens, M. B. (2019). Medical school strategies to address student well-being: A national survey. *Academic Medicine: Journal of the Association of American Medical Colleges*, 94(6), 861–868.
- Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2005). Medical student distress: causes, consequences, and proposed solutions. *Mayo Clinic Proceedings*, 80(12), 1613–1622.
- Dyrbye, L. N., West, C. P., Satele, D., Boone, S., Tan, L., Sloan, J., & Shanafelt, T. D. (2014). Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Academic Medicine: Journal of the Association of American Medical Colleges*, 89(3), 443–451.
- Erschens, R., Keifenheim, K., Herrmann-Werner, A., Loda, T., Schwille-Kiuntke, J., Bugaj, T., Nikendei, C., Huhn, D., Zipfel, S., & Junne, F. (2019). Professional burnout among medical students: Systematic literature review and meta-analysis. *Medical Teacher*, 41(2), 172–183.
- Franzidis, A. F., & Zinder, S. M. (2019). Examining student wellness for the development of campus-based wellness programs. *Building Healthy Academic Communities Journal*, 3(1), 56–66.
- Funaro, M. C., Rojiani, R., & Norton, M. J. (2019). Improving community wellbeing through collaborative initiatives at a medical library. *Journal of the Medical Library Association: JMLA*, 107(3), 425–431.
- Gregg, A., Scarborough, H., and Turner, E. L. (2020). Medical education. *Encyclopedia Britannica*. <https://www.britannica.com/science/medical-education>
- Harries, A. J., Lee, C., Jones, L., Rodriguez, R. M., Davis, J. A., Boysen-Osborn, M., Kashima, K. J., Krane, N. K., Rae, G., Kman, N., Langsfeld, J. M., & Juarez, M. (2021). Effects of the COVID-19 pandemic on medical students: A multicenter quantitative study. *BMC Medical Education*, 21(1), 14.
- Henrich, K. (2020). Supporting student wellbeing and holistic success: A public services approach. *The International Information & Library Review*, 52(3), 235–243.
- Herron, J. (2016). Mobile wellness resources. *Journal of Electronic Resources in Medical Libraries*, 13(3), 94–98.
- Lannon, A., & Harrison, P. (2015). Take a paws: Fostering student wellness with a therapy dog program at your university library. *Public Services Quarterly*, 11(1), 13–22.
- Llewellyn, A. (2019). Innovations in learning and teaching in academic libraries: A literature review. *The New Review of Academic Librarianship*, 25(2-4), 129–149.
- Meyers-Martin, C., & Borchard, L. (2015). The finals stretch: Exams week library outreach surveyed. *Reference Services Review*, 43(4), 510–532.
- Nikolis, L., Wakim, A., Adams, W., & DO, P. B. (2021). Medical student wellness in the United States during the COVID-19 pandemic: A nationwide survey. *BMC Medical Education*, 21(1), 401.
- Patil, U. A. (2020) Public health at the public library: Preventive health programs implemented in large public libraries. *SLIS Connecting*, 9(1). <https://doi.org/10.18785/slis.0901.07>
- Pollock, J. R., Moore, M. L., Smith, J. F., Woolstenhulme, J. B., Markham, D. J., Rhees, J. R., Poole, K., Pollock, N. T., & Patel, N. P. (2021). Content and functionality of United States medical school websites. *Cureus*, 13(6), e15534. <https://doi.org/10.7759/cureus.15534>
- Ramsey, E., & Aagard, M. C. (2018). Academic libraries as active contributors to student wellness. *College & Undergraduate Libraries*, 25(4), 328–334.
- Rotenstein, L. S., Ramos, M. A., Torre, M., Segal, J. B., Peluso, M. J., Guille, C., Sen, S., & Mata, D. A. (2016). Prevalence of depression, depressive symptoms, and suicidal ideation among medical

students: A systematic review and meta-analysis. *JAMA*, 316(21), 2214–2236.

Rushing, Melinda Ann (2019). A snapshot of programming at public library websites in Mississippi. *Mississippi Libraries*, 82(3), 42-45.

Segen, J.C. (2002) Medical school. *McGraw-Hill concise dictionary of modern medicine*. The McGraw-Hill Companies, Inc., New York.

Slavin S. (2019). Reflections on a decade leading a medical student well-being initiative. *Academic Medicine: Journal of the Association of American Medical Colleges*, 94(6), 771–774.

Thelwall, M. (2018). Webometrics. In B. Warf (Ed.), *The SAGE Encyclopedia of the Internet*. Sage Publications. <https://lynx.lib.usm.edu/login?url=https://search.credoreference.com/content/entry/sagei/webometrics/0?institutionId=3440>

VandenBos, G. R., & American Psychological Association. (2015). *APA dictionary of psychology*. (2nd ed.). American Psychological Association.

Walton, G. (2018). Supporting student wellbeing in the university library: A core service or a distraction? *The New Review of Academic Librarianship*, 24(2), 121–123.

West, C. P., Dyrbye, L. N., & Shanafelt, T. D. (2018). Physician burnout: Contributors, consequences, and solutions. *Journal of Internal Medicine*, 283(6), 516–529.

Yoon, A., & Schultz, T. (2017). Research data management services in academic libraries in the U.S.: A content analysis of libraries' websites. *College & Research Libraries*, 78(7), 920.

Zis, P., Artemiadis, A., Bargiotas, P., Nteveros, A., & Hadjigeorgiou, G. M. (2021). Medical studies during the COVID-19 Pandemic: The impact of digital learning on medical students' burnout and mental health. *International Journal of Environmental Research and Public Health*, 18(1), 349.

Appendix A: Comprehensive List of Medical School Libraries Wellness Resources, Services, or Events Offerings

Allopathic Medical School Name	Resources
Charles E. Schmidt College of Medicine at Florida Atlantic University	Wellness Resource Guide
Duke University School of Medicine	Coloring Books
Florida International University Herbert Wertheim College of Medicine	Wellness Resource Guide
Geisinger Commonwealth School of Medicine	Wellness Resource Guide
Harvard Medical School	Pet Therapy Storytelling Meditation Room Coloring Book Button Making Comic Book Making Nintendo Switch Gaming Device Gratitude Board Kindness Rock Garden Community Garden
Howard University College of Medicine	Wellness Resource Guide Games and Puzzles
Icahn School of Medicine at Mount Sinai	Wellness Resource Guide
Indiana University School of Medicine	Wellness Resource Guide Wellness Room Wellness Mobile Applications Relaxation Station Student Lounge
Lewis Katz School of Medicine at Temple University	Lactation Room Wellness Room
Mayo Clinic Alix School of Medicine	Wellness Resource Guide
Sidney Kimmel Medical College at Thomas Jefferson University	Wellness Resource Guide
University of Alabama at Birmingham School of Medicine	Lactation Room Pet Therapy Art Show Afternoon Tea
University of Arizona College of Medicine	Reflection Room

	Bracelet Making Origami Chair Massage Pet Therapy Dog Coffee Talks Stress Care Packages Mindfulness Mobile Applications
University of California Los Angeles David Geffen School of Medicine	
University of California San Francisco School of Medicine	Creative Monthly Meetup
University of Chicago The Pritzker School of Medicine	Wellness Resource Guide
	Lactation Room Game Borrowing Art Exhibit Exercise Equipment Borrowing Lounge with Kitchen Nap Pods Active Work Stations
University of Colorado School of Medicine	
	Wellness Resource Guide Meditation Mobile Applications
University of Hawaii John A. Burns School of Medicine	
University of Kansas School of Medicine	Pet Therapy Active Study Area
University of Maryland School of Medicine	Flu Shot Clinic
	Pet Therapy Recreational Reading Games and Puzzles Happy Lights Wellness Book Display Local Wellness Information Mobile Wellness Applications
University of Massachusetts T.H. Chan School of Medicine	
University of Mississippi School of Medicine	Lactation Room
	Lactation Room Reflection Room
University of Nebraska College of Medicine	
University of Nevada, Reno School of Medicine	Wellness Room
University of Oklahoma College of Medicine	Lactation Room
	Puzzles Brain Power Hour Photo Booth Free Snacks and Drinks
University of South Carolina School of Medicine Columbia	
Virginia Commonwealth University School of Medicine	Lactation Room Reflection Room

Washington University in St. Louis School of Medicine	Wellness Information Center
Yale School of Medicine	Pet Therapy Board Games Wellness Room
Osteopathic Medical School Name	Resources
Burrell College of Osteopathic Medicine at New Mexico State University	Book Club
California Health Sciences University College of Osteopathic Medicine	Lactation Room Meditation Room Wellness Committee Walking Wed Quarterly 5K Wellness Reading Section Mindfulness Mobile Applications Library wellness section
Rocky Vista University College of Osteopathic Medicine	Wellness Resource Guide Book Club
Sam Houston State University College of Osteopathic Medicine	Lactation Room Book Club Family Entertainment Kit
Touro University College of Osteopathic Medicine California	Wellness Resource Guide
University of New England College of Osteopathic Medicine	Drag Queen Story Hour Games and Puzzles Writing to Heal
University of North Texas College of Osteopathic Medicine	Lactation Room Pet Therapy
Western University of Health Sciences College of Osteopathic Medicine	Lactation Room Virtual Book Talk

Appendix B: Characteristics of Libraries Offering Wellness Resources, Services, or Events

Allopathic Medical School Name	Type	Total # Students	# Medical Students	Total # Resources
Harvard Medical School	private	30,391	844	10
University of California, Los Angeles David Geffen School of Medicine	public	285,862	420	7
University of Colorado School of Medicine	public	35,897	793	7
University of Massachusetts T.H. Chan School of Medicine	public	32,045	722	7
Indiana University School of Medicine	public	91,084	1,527	5
University of Alabama at Birmingham School of Medicine	public	38,320	805	4
University of South Carolina School of Medicine Columbia	public	48,428	406	4
Yale School of Medicine	private	12,060	451	3
Lewis Katz School of Medicine at Temple University	private	37,236	873	2
University of Hawaii, John A. Burns School of Medicine	public	19,098	312	2
Howard University College of Medicine	private	9,689	497	2
University of Kansas School of Medicine	public	27,685	868	2
University of Nebraska College of Medicine	public	24,431	554	2
Virginia Commonwealth University School of Medicine	public	29,417	792	2
Charles E. Schmidt College of Medicine at Florida Atlantic University	public	37,625	273	1
Duke University School of Medicine	private	16,780	584	1
Florida International University Herbert Wertheim College of Medicine	public	58,889	512	1
Geisinger Commonwealth School of Medicine	private	607	479	1
Icahn School of Medicine at Mount Sinai	private	1,298	642	1
Mayo Clinic Alix School of Medicine	private	4,322	464	1
Sidney Kimmel Medical College at Thomas Jefferson University	private	8,286	1,157	1
University of Arizona College of Medicine	public	49,471	515	1
University of California, San Francisco School of Medicine	public	285,862	831	1
University of Chicago The Pritzker School of Medicine	private	18,901	430	1
University of Maryland School of Medicine	public	40,709	644	1
University of Mississippi School of Medicine	public	18,668	679	1
University of Nevada, Reno School of Medicine	public	30,679	294	1
University of Oklahoma College of Medicine	public	28,079	681	1
Washington University in St. Louis School of Medicine	private	15,539	599	1
Osteopathic Medical School Name	Type	Total # Students	# Medical Students	Total # Resources
California Health Sciences University College of Osteopathic Medicine	private	243	80	8
Sam Houston State University College of Osteopathic Medicine	public	21,612	75	3
University of New England College of Osteopathic Medicine	private	6,642	702	3
University of North Texas College of Osteopathic Medicine	public	32,694	945	2
Western University of Health Sciences College of Osteopathic Medicine	private	3,814	1,321	2
Rocky Vista University College of of Osteopathic Medicine	private	1269	1,269	2
Burrell College of Osteopathic Medicine at New Mexico State University	private	21,694	645	1
Touro University College of Osteopathic Medicine California	private	1,321	551	1

**Total enrollment inclusive of undergraduate and graduate, and professional programs*

**Medical school size not including other health professional programs*

**Total enrollment inclusive of undergraduate and graduate, and professional programs*

**Medical school size not including other health professional programs*