Utilizing a Systems and Design Thinking Approach for Improving Well-Being Within Health Professional Education and Health Care

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Stress and burnout impact all of the health professions, from education to practice, with potentially serious negative consequences for patients, students, trainees, and health care professionals [1,2]. As a result, organizations are taking action to implement stress reduction and well-being initiatives at their institutions. Some of these interventions take place within the learning environment while others target the practice environment. Despite these laudable efforts, it remains unclear in most instances how each organization developed its plans for selecting a particular intervention and who was engaged in developing the intervention.

This paper highlights two approaches—design thinking and systems thinking—that could be used for developing strategies to address stress and burnout and to improve the well-being of students, trainees, faculty, and health care professionals. The authors further suggest that combining these two approaches may create a more powerful method to examine stress and burnout and the strategies to address both. The paper reviews each approach and then provides an example of what a combined design thinking and systems thinking approach to the reduction of burnout might be like. The authors recognize that this is not the only solution to developing plans to reduce stress and prevent burnout, but hope that presenting this approach might help

organizations think about how to address reducing stress and burnout in their workforce.

Design Thinking

Design thinking methods center on carefully listening to all stakeholders prior to developing a solution, and when solutions are being brainstormed, emphasizing creativity. Participants in a design thinking activity are often asked to work with those directly and indirectly affected by a problem to build out an idea stemming from stakeholder conversations and literature searches. The design thinking process starts by asking three related questions [3,4]:

- Desirability—what solution or set of solutions makes sense to people and which are wanted or needed?
- Feasibility—what is functionally possible?
- Viability—what is likely to be sustainable?

After considering these three questions, design thinking uses a multi-step approach to understand the situation, brainstorm solutions, and test and revise the best solution. For example, using design thinking to find solutions for stress and burnout in the health care workforce could involve the following five steps [5]:

1. **Empathize—**Listen to as many voices as necessary to gain a 360-degree perspective on the root causes of stress and burnout, ensuring the inclusion of voices at all career stages and health professions, while conducting a thorough review of the literature.
2. **Define—**After understanding the situation from many different viewpoints, draft a clear statement of the problem and share that draft with all of the stakeholders who were interviewed. Sharing the problem statement ensures that it reflects the ideas put forth during the listening phase. These key stakeholders should have the opportunity to offer input and feedback on the problem statement.
3. **Ideate—**Work with key stakeholders to create a broad range of potential solutions. This is a time for proposing all possible ideas, not for evaluating these ideas.
4. **Prototype—**Ask leading questions (for example, "If we were to assign scribes to reduce administrative tasks, how might that affect both the health care team dynamic and your interactions with the patient?") to move the group toward a series of potential solutions and to whittle down the larger pool of ideas created in Step 3. In this step, low-fidelity representations of the idea are created and tested through, for example, storyboards, skits, and presentations.
5. **Test—**Share written or designed solutions with stakeholders. After receiving constructive feedback about what is good, what is not, and what can be improved, the intent of this stage is to move the group toward a final design that will need to be monitored and adjusted, as indicated, after it is implemented.

This process, which must be repeated to obtain improved outcomes over time, might engage an expert designer to solicit, facilitate, and incorporate stakeholder input and to identify primary and secondary stakeholders. However, there may also be times when a member of the project team acts as the facilitator of the design process. This person would ensure a deep exploration of the topic and a wide range of stakeholder input before moving to the "Ideate" stage of the process, outlined above. Regardless of which staff are involved in the process, it is critical for the leadership to ensure protected time to undertake the strategic planning or it risks increasing the workload of already overwhelmed employees. It is also critical that the leadership be committed to resourcing solutions after the design process.

Systems Thinking

Systems thinking recognizes that there are often multiple stakeholders or decision makers with potentially conflicting objectives and differing opinions on what a problem is and how to address it [6]. If a decision maker works in isolation to implement a change in one group without consulting others at the organization, it could lead to unforeseen consequences in other parts of the system [7].

Health care is, by its nature, a system of interacting parts. A person's visit to a health care delivery site will likely involve interactions with providers, administrative staff, facilities maintenance staff, and others. Different workers and units all interact with and affect each other's work environment and performance. While individual perspectives are important in approaching solutions to complex problems, systems thinking is also a critical viewpoint to bring to problem solving, as it is keenly focused on how the parts of a system work together [8]. For example, a planning process that uses systems thinking would ideally engage individuals from all levels of an organization (e.g., support workers, staff, managers, and leaders) to understand how the different departments (e.g., transportation, housekeeping, clinical, and food service) work together in addition to how each unit functions independently. A variety of tools can be used to visually map out the different connections [9]. This helps stakeholders see how one component of an organization fits within the wider context of a complex structure and how a change in one unit could lead to downstream impacts on other parts of the organization.

Combining Design Thinking with Systems Thinking to Address Health Care Workforce Well-Being

As illustrated above, design thinking and systems thinking both strive to consider the entirety of the system and all stakeholders when developing a solution, so these two approaches can be easily paired. When the creativity and empathy of design thinking is combined with the careful consideration and structural approach of systems thinking, the authors believe that particularly creative, personalized, and well-considered ideas to address stress and well-being naturally emerge. This is a complex undertaking. Such an initiative would

Box 1 | A Combined Design Thinking and Systems Thinking Example

Long work hours, on-call nights and weekends, work–home conflicts, insufficient staffing levels, emotional exhaustion, moral distress, mistake anxiety, financial pressure, and lack of respect are just some of the multitude of reasons offered for the high rates of burnout among health professionals within education and practice [2]. While particular stressors disproportionately affect certain groups within these two sectors, it is clear that stress and burnout are widespread. What is less clear is how stress-reduction interventions for one group might adversely affect or benefit another group at the same organization. Combining a systems thinking approach—to anticipate the consequences of interventions—with design thinking for creative problem-solving can allow stakeholders to work together to address the most vexing challenges.

As an example, look at health professionals and trainees working and learning at a theoretical teaching hospital where daily stress is extremely high due to the reasons outlined above. This high level of anxiety has led to high rates of burnout. Hospital administrators became concerned because the quality of care diminished and their bottom line suffered due to high rates of absenteeism, especially among nurses. There was also a large turnover rate and numerous vacancies affecting all of the employees.

Hospital administrators reviewed their options and decided to hire an outside firm to develop innovations that would help alleviate the high stress levels and begin to lessen the rates of burnout across the entire delivery system. The firm's representatives began by learning about the structure, history, and culture of the organization. They did this by reviewing written documents, speaking with all levels of employees, and observing different units in action. Their next step was to convene a diverse set of stakeholders representing each of the health professions, students, administrators, patients, and the community, while pulling as many representatives from the different divisions as possible. At the first stakeholder meeting, the firm's facilitator encouraged the diverse group of attendees to share their thoughts about the causes and potential solutions for combating burnout at their teaching hospital. This listening session provided material for developing a joint problem statement that all attendees at the meeting contributed to creating.

In the next phase, stakeholders were asked to react to the problem statement by writing suggestions on sticky notes outlining ideas for alleviating stress and burnout at the organization. Categorizing the ideas into major themes promoted interaction among the stakeholders while also encouraging creative idea sharing. This process gradually moved the group toward a set of stress-reduction interventions that cut across all professions, levels, divisions, and units of the hospital.

It was then time to cost-out the different interventions and conduct desk analyses to determine the sorts of expected impacts that the interventions would have on each group, in each part of the hospital. The suite of interventions included hiring more full-time nurses to save money by not hiring traveling nurses. With the cost savings, the hospital would be able to offer more benefits to housekeeping staff in an effort to improve retention and increase the cleanliness of the facility. Improving the look of the hospital would increase patient satisfaction, but additional cost savings could be realized if less antibiotics were used by decreasing the number of nosocomial infections. To do this, the hospital could undertake a campaign that included easy access to soap and water for everyone who interacted with patients. These cost savings could then be applied to increasing the number of parking spaces available for staff, which, due to the lack of parking, was a constant source of frustration and tardiness for all of the hospital employees.

After the cost–benefit analyses were conducted, it was time to pilot test the suite of initiatives. Data were collected before, during, and after the pilot test period to analyze its impact on the level of stress and burnout of hospital employees. These data were brought back to the group of stakeholders to discuss to modify the intervention before re-testing the pilot. This process was repeated over the course of the trial period in an effort to better ensure the feasibility and acceptability of the intervention and to correct any unintended consequences before undertaking the full initiative. In the end, a hospital-wide intervention was implemented and monitored over several years to minimize stress levels, decrease absenteeism and burnout, and improve the well-being of everyone at the teaching hospital.

have to be balanced with the costs and impacts of such a program on all of its stakeholders, including patients, families, and communities. However, if the program is successful, it will likely create a net financial gain when factoring in the benefits of a healthier workforce due to less worker absenteeism, higher staff retention, diminished burnout among employees, and the impact of a more satisfied workforce on patient safety and satisfaction [10,11].

Conclusion

Using a strategic, collaborative process to identify sources of, and potential solutions to, stress and burnout helps ensure that organizational responses are relevant, effective, and sustainable. The authors believe that design thinking integrated with systems thinking is the most promising way of creating organizational interventions. By continuously testing and adapting the interventions identified through design and systems thinking, a strategic approach to improving the well-being of workers across all organizational levels can be developed while monitoring for any unintended consequences. From students to trainees to health professionals to patients and communities, everyone stands to benefit from a functional health system and a supportive learning environment that emphasizes the well-being of all of its workers and learners while promoting positive engagement with patients, families, and communities.

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