Utilizing Technology to Combat Clinician Burnout

Matthew J. Davis

Auburn University
Health Services Administration Program
Executive Summary

Physician burnout is a major problem that is affecting the healthcare industry. It not only affects the mental health of physicians, but also impacts patient outcomes, patient satisfaction, and the financial standing of the health system. Using a combination of web and mobile applications to treat physician burnout can effectively reduce burnout symptoms. Utilizing technology based applications will increase access to mental health treatment for physicians and help normalize therapy in the clinical setting. MoodGym and Headspace are two well tested applications that reduce stress, anxiety, and depression. Using these applications paired with a well-structured program can reduce physician burnout caused by the inherent stressors of the job.
Utilizing Technology to Combat Clinician Burnout

In order to be financially successful and profitable in today’s healthcare industry, it is imperative for healthcare leaders to focus on quality of care, patient outcomes, and patient satisfaction. One of the most important tools we have as managers to improve patient satisfaction and outcomes is our clinical staff. These are highly educated individuals who conduct the majority of face to face interaction with patients. The engagement and health of those clinicians have a direct impact on the experience of a patient. Healthcare operates in a fast-paced environment that is always changing. Clinicians are expected to perform the clinical tasks, as well as non-clinical data entry. A Physician Foundation study found 23% of physicians’ time is spent on non-medical work (Jannenga, 2018).

The Mayo Clinic (2018) states the cost of physician burnout adds more than $3.4 billion annually to the U.S. health care system. On top of having an impact on the financial standing of organizations, it also acts as a domino effect with the impending shortage of physicians. By the year 2030 the healthcare field will see a shortage of 120,000 physicians (Maiona, 2019). If physicians are quitting due to burnout it only exacerbates the problem. According to a Spok survey, a majority of physicians believe their organizations lack institutional attention and resources when it comes to treating burnout (Spok, 2019). Through utilizing technology based applications managers can effectively help their clinicians. It is imperative to know what specific symptoms these applications need to target and what combination of applications would be optimal in helping lower clinician burnout.
Burnout

There are three types of energy accounts within physicians. These accounts are the physical, emotional, and spiritual energy accounts. Physicians make deposits in each account by doing positive actions. Getting proper rest, having healthy relationships at home, and having a personal sense of purpose can add to a physician’s energy accounts. Physicians also withdraw from those accounts. When the withdrawals outweigh the deposits, burnout becomes visible (Drummond, 2016). This is one way burnout can be visualized in everyday life. But burnout is a complex issue that warrants additional explanation.

Maslach and associates define burnout as a syndrome that develops in response to enduring work-related stress and is characterized by emotional exhaustion, depersonalization and a low sense of personal accomplishment (Pospos, 2017). There are an alarming number of clinicians dealing with burnout, depression and suicidality. Burnout is also known to be a catalyst for alcohol and drug abuse among physicians (Maiona, 2019). Clinicians are a health care organization’s most valuable tool and are vital for any health system. We must recognize the importance of the issue of clinician burnout and act fast if we want to enable them to provide the best possible care to our patients. Major causes of burnout include compassion fatigue, work-life imbalance and certain technology.

Compassion Fatigue

Burnout can co-occur with compassion fatigue. Compassion Fatigue (CF), a perception of malaise and psychic exhaustion, occurs when a physician is constantly
surrounded by trauma and sickness. CF symptoms include inability to empathize, hopelessness, anxiety, depression, anger, and cognitive issues such as poor concentration and judgement. These symptoms cause decreased productivity, higher absenteeism, decreased work engagement, increased turnover, and decreased patient safety and satisfaction (Heeter, 2017).

Physicians tend to be overlooked when it comes to burnout and CF because of their crisis management skills and endurance in the workforce. Throughout their education physicians are taught to be workaholics and perfectionists (Drummond, 2016). This causes physicians to not come forward because they are unaware a problem exists until it is too late. It is incumbent on healthcare managers to create a work culture where administrative efficiency and work-life balance allow professional staff to thrive. The mental state of clinicians is being affected by both inherent and external stressors of the job (Mylod, 2017). The external stressors are usually the main focus of managers; however, the inherent stressors can be mitigated. Studies show these stressors can greatly impact physicians’ mental health. Experts estimate between 300-400 physicians in the United States take their own life every year (Maiona, 2019). This is the highest suicide rate of any profession and is nearly double that of the general population.

**Work-life Balance**

Burnout also arises from a poor work-life balance. Drummond (2016) makes the observation that “The time and energy required for each comes out of the same pie. Each must take from the other because the pie is finite. Managing this give and take is an
ongoing process” (pg. 29). Much is expected from physicians and that leads to long hours of intensive mental strain.

**Technology**

According to an investigation by Fortune and Kaiser Health News, Electronic Health Records (EHRs) are one of the biggest drivers of today’s physician burnout epidemic (Maiona, 2019). EHRs were intended to reduce the amount of paperwork physicians were responsible for, however they just move the paperwork to the computer screen. EHRs divert a lot of the physician’s time away from treating patients. EHRs do allow for a more comprehensive view of the patient, however something must be done to improve the EHR input system. The hope is implementing advances in artificial intelligence, data visualization and modern interface design will drastically improve the usability and clinical value of health informatics (Maiona, 2019). Changing the EHR system will not eliminate burnout all together so it is important to not solely focus on EHR’s impact on burnout.

**Physical Effects**

Burnout has been found to have a direct connection to lower perceived quality of care and occupational intervention to improve quality of care should be expanded to include the prevention of burnout (Loerbroks, 2017). Burnout is also altering the way health professionals view the medical field. According to a Physicians Foundation survey 62% of surveyed clinicians were “very or somewhat” pessimistic about the future of the medical field (Jannenga, 2018). This pessimistic viewpoint stems from increased non-clinical workloads and the regulatory environment of the healthcare industry.
There are serious health risks that are associated with burnout and cost healthcare systems money. According to Heeter’s research (2017):

Physical CF symptoms include fatigue, gastrointestinal problems, muscle tension, headache, and sleep disturbances. Workplace CF symptoms include decreased productivity, high absenteeism, decreased work engagement, and lack of empathy and avoidance in working with specific patients. Other negative outcomes include medical errors, increased turnover, and decreased patient safety and patient/family satisfaction.

Continuing to allow burnout to go unchecked will cause a deterioration of the physicians’ health, but also will continue to have a massive impact on the financial standing of health systems.

The high rates of burnout, depression, and suicide among healthcare professionals have necessitated the introduction of programs to assist clinician mental health. Some organizations have begun to offer treatment options for clinicians. These programs mostly rely solely on in-person therapy. What is becoming evident is that physicians are not utilizing these programs. Reported reasons for low utilization include lack of time, cost, confidentiality and the stigma around visiting a therapist (Pospos, 2017).

Fortunately, more modern options are now available through technological advancements that managers can utilize to combat burnout.

**Technology-Based Applications**

Researchers are seeing that the answer to treat a clinician experiencing the inherent stressors of the job comes in the form of web and mobile apps. We live in a
world where everyone in the healthcare industry has a smartphone and access to a computer. Healthcare is utilizing more technology to increase access for patients, why not apply the same thinking for our physicians? There are many applications out there that target specific symptoms associated with burnout. These applications are convenient, accessible, affordable and most importantly, confidential (Pospos, 2017).

When choosing an application that will effectively assist a clinician, managers must understand the specific symptoms that need to be treated and their source. The act of repeatedly taking care of a patient who is suffering is emotionally draining and has both physical and mental demands (Mylod, 2017). This is an inherent stressor for physicians. It is a part of the job managers can never remove, however we can offer support in dealing with these stressors. A clinician having access to a tool at all times on their phone can help them acknowledge and begin to cope with the situation. By continuously working with the applications, physicians will be more comfortable reaching out to in-person counseling if their mental state worsens.

Currently there are no healthcare worker-specific applications, however there are multiple applications that are intended to target populations with similar criteria as healthcare professionals (Pospos, 2017). These applications focus on stress, depression, suicide prevention, meditation and introspection. These are all correlated to burnout and the inherent stressors of healthcare. By targeting these issues specifically, burnout can be mitigated and physician mental health will improve drastically.

Examining these applications by the intended symptom that each treats can help acquaint managers and organizations to the tools that they can might use to customize a
plan that better fits the mental health needs of their clinicians. This essay provides an overview of several stand-alone web and mobile based applications, as well as proposed programs that incorporate applications and in-person therapy. While this is not a comprehensive list, the following applications can provide a starting point for managers and organizations to consider as part of their efforts to combat clinician burnout.

**Breathe2Relax**

Breathe2Relax is a stress management tool offered as a mobile application. The application focuses on diaphragmatic breathing techniques to control stress. Breathe2Relax includes instructional videos and text, audio coaching and progressive tracking of usage. The app is the result of a collaborative partnership between the Department of Defense and the center for Telehealth and Technology. The application meets all federal security guidelines for clinical practice and honors HIPAA regulations. It is an easy to access application that can be used throughout the day on a cellphone (Wall, 2014).

**Headspace**

Headspace focuses on utilizing 10-minute guided meditation audios to reduce stress, increase focus, and help with depression. Headspace is a web and mobile application that has more than 40 million users. Headspace utilizes meditation sessions that can be accessed at any time and can be customized to fit the individual. It has clinically-validated research backing the effect of the app on symptoms associated with burnout. A randomized controlled trial using the Headspace app found that only 10 days of using Headspace reduced stress by 14% (Martman, Bell & Sanderson, 2018). Another
study shows Headspace can improve focus by 14% (Bennike, Wieghorst, and Kirk, 2017). Studies conducted with nurses and other working populations have found that according to the Headspace website, other studies conducted by Northeastern University have found that utilization of the Headspace can reduce stress, job strain and improve job satisfaction (Headspace). Since Headspace has a mobile application it allows health professionals to use it throughout the day when it is most needed. With meditation, this allows for an instant response to a situation.

**MoodGym**

MoodGym is a web based self-help program that is designed to help users prevent and manage symptoms of depression and anxiety. It is based out of Australia. The skills taught by MoodGym are based on cognitive behavior therapy. MoodGym teaches and tests the user on managing and preventing mental health problems. MoodGym has assessments tests and presents the user with what mental stressors they are encountering and how to deal with them. According to the MoodGym’s website a recent meta-analysis of 12 studies found that MoodGym is effective at reducing depression and anxiety symptoms in adult populations, with some evidence suggesting that it is also effective at reducing general psychological distress, Research supporting that MoodGym decreased suicidal ideation in medical interns and reduced dysfunctional thinking, depression, and anxiety at 6 months of use (“MoodGym CBT training program”). MoodGym is only available in a web based format, which might limit access to the program throughout the day and limits the access to only where a computer is accessible.

**Stress Gym**
Stress Gym is a web-enhanced behavioral self-management program. It is made up of 9 modules focusing on stress awareness and management. Users are able to complete the modules at their own pace. The website cannot store data yet. Stress Gym does not have a strong security backing and has not been updated recently (Pospos, 2017). The main benefit of Stress Gym would be a useful aid for clinicians to check consistently throughout the day. Stress Gym does not have any data backing.

**Virtual hope box**

Virtual Hope Box is an application that is primarily focused on suicide prevention. It is modeled on a cognitive behavioral technique that uses a physical box on the application that contains the user’s positive experiences, main driving forces, and people who care about them. Most user of the app use it to cope with distress, overwhelming emotions and a need for inspiration. In a randomized clinical trial, the Virtual Hope Box was utilized by veterans who reported a significantly greater ability to cope with unpleasant emotions and thoughts, and they found it to be more helpful than written educational materials (U.S. Department of Veterans Affairs).

This application could assist clinicians after encountering a poor outcome with a patient. When a clinician has invested so much into a patient and the outcome is negative this application can be used as a reminder of why they are in the healthcare field and who their support system is. It is easy for physicians to lose sight of the “big picture.” Having a constant reminder of what they are grateful for and what the legacy is they are leaving behind can have a positive impact on their overall mental outlook (The Virtual Hope Box, 2019).
Coach.me

Coach.me is a goal setting app. You can load your daily activities you want to get done and keep track of your checklist. The application will send reminders and send an occasional supportive message. This app can benefit clinicians by helping them keep a health work-life balance and make sure they have a visual reminder to diversify the type of activities they partake in (Drummond). This is very important for the mental health of a physician and keeping the individual from burning out. Having visible goals in front of them will help the physician to focus on completing them rather than putting it off.

Yoga Therapy (YT) Meditation Program, RelaxU

The YT Meditation Program is a program established by Carrie Heeter, PhD at Michigan State University with the help YT meditation expert Marcel Allbritton. Carrie Heeter (2017) explains the application part of the program:

The 6-week technology-assisted YT meditation program used smartphone apps to deliver five 10- to 12-minute meditations (1 per week for the first 5 weeks) with twice weekly automated, personalized e-mail messages. In the sixth week, the participants could choose any 1 of the 5 meditations each day.

The meditations from this study were put into a single mobile application called RelaxU. The use of personalized emails helped simulate the personal relationship between a therapist and a patient, but allowed the individual to view it on their own time.

The program was tested by inviting 93 hospice and palliative care health care providers at a large Midwestern US health network to register for the program. Thirty-six health care providers registered and downloaded the app. Of those who downloaded the
app 93% meditated once or more per week for 5 weeks. After the participation in the program CF and burnout totals were significantly lower among those who utilized the application and followed the program (Heeter, 2017).

**Recommendation**

Before any application or technology can be utilized to reduce burnout an open line of communication must be established between physicians, management and every stakeholder in the healthcare delivery community. Initial training of coping skills must be taught to physicians in medical school to establish a starting point of stress awareness for all health professionals.

It is important for physicians to have a balanced work-life relationship and be reminded that having time to recharge and rest is very important. Managers have to set up a schedule where a clinician can utilize these applications and are able to focus solely on their mental health even if it is only for 10 minutes. The benefits of doing so include a refreshed physician who will deliver a higher quality of care.

Burnout is a very complex problem that will take an organized structure to combat. Web and mobile applications allow health systems to save time and money establishing a program to effectively help its clinicians. It is important that the correct combination of applications and in-person meetings is used. My recommendation to managers after researching the different applications and programs is to utilize a combination of techniques.

The YT meditation experiment showed great results with combining a web or mobile based application with a set up program with personalized email reminders. When
it comes to choosing an application to utilize I believe the two best options are MoodGym and Headspace. Utilizing both applications together can give a comprehensive support system for clinicians. These are widely used programs in other fields and research has shown that each has helped users to reduce anxiety, depression, and stress.

MoodGym is a very comprehensive system that can diagnose, educate, problem solve and manage symptoms of depression and anxiety. It has high level of confidentiality and has over 1 million users worldwide. It is a great tool for informing a clinician that what they are experiencing is not rare and that there is a path to feeling better and less burnt out. MoodGym however, is only a web based application and does not have a mobile app. This adds limitation to a physician being able to readily access the application when they need to at work. Headspace is a very popular application that is improving and growing at a high rate. The feature of having 10 minute modules that help reduce stress, improve focus and increase happiness. With Headspace being both a web and mobile application it allows easy access for clinicians when they are feeling overwhelmed.

I believe utilizing both applications together would be highly effective in reducing clinician burnout and increase patient satisfaction. A program must be established when implementing the use of these applications. The only way burnout will be reduced is if managers can sell the use of these programs to physicians. Luckily these applications have research backing what they claim to do.

When starting a program, I believe introducing MoodGym first would be the most beneficial. MoodGym helps diagnose and educate a clinician on the reason why utilizing
Headspace is important. Setting up an email system similar to the system utilized by the YT meditation program is necessary. This creates a personalized reminder that inspires the health professional of their progress and encourages them to continue using the applications. The emails will also help keep the utilization of these applications up and help guide physicians and keep them on track. It is important to find a way to monitor the use of these applications so that the personalized feedback can help guide real-time improvement. These monitoring efforts however, cannot compromise the confidentiality or privacy of physicians.

**Conclusion**

Clinician burnout affects a health system’s quality of care and financial standing. Physicians are vital tools and the health care industry cannot operate without them. Managers must remember that clinicians experience inherent stressors that come with working with patients. These stressors negatively impact clinicians and can lead to their work quality and mental health diminishing.

Utilizing technology-based applications can be an inexpensive and flexible way to help clinicians cope with these inherent stressors of the job. These applications allow clinicians to find time to help their mental health in their busy and complex lives. Finding a balance is important for physicians. Providing clinicians with 24/7 access to help guarantees they will have access to the necessary help they need when they need it. Physicians being less burnt-out results in fewer medical errors, reduced costs to recruit and replace burned out physicians, improve the work environment and less need for disciplinary action.
Both MoodGym and Headspace have millions of users already utilizing their services for their personal mental health. Providing tools like these to clinicians and giving them the framework to succeed can lead to better clinician satisfaction, patient satisfaction and, ultimately, better patient outcomes. Setting up a system that bridges the gap to intervention and serves as catalyst for clinicians to seek help will lead to a better healthcare system for all stakeholders. As Jannenga (2018) states, “let’s continually remind ourselves why we entered the profession in the first place: to help patients. Proactively addressing burnout will allow us to put our focus back on the patients, where it undoubtedly belongs.” It is vitally important that health care organizations help clinicians find and utilize appropriate tools and strategies that can help them cope with the inherent and external stressors that lead to burnout.
References


Jannenga, H., Dpt, & Atc. (2018). Why burnout is the norm in healthcare-and how we can beat it: In today's always-connected world, most of us are expected to produce more, consume more, and be "on" more than we ever have before. Retrieved from https://www.beckershospitalreview.com/human-capital-and-risk/why-burnout-is-the-norm-in-healthcare-and-how-we-can-beat-it.html


