

Are healthcare workers stressed by information technology?

Dealing with technology adds extra work and stress for nurses, on top of their daily caring responsibilities, write Christopher B. Califf, Saonee Sarker, and Suprateek Sarker



Today's healthcare workers are stressed. In addition to dealing with a myriad of difficult situations, such as developing effective treatment plans and overcoming the death of patients, many care providers currently find themselves on the frontlines battling a global pandemic. In the United States, for example, the number of COVID-19 cases has **increased** by 215 per cent, and the number of **hospitalisations** due to COVID-19 is on the rise. Though cases in much of Europe and the United Kingdom are **trending downward**, a recent **report** by Britain's Academy of Medical Sciences projects a worst-case scenario of 120,000 deaths in the U.K. resulting from a second wave. Making matters worse is the fact that many healthcare workers throughout the **US** and **UK** are still lacking the tools needed to keep themselves and their patients safe.

While much of the media focus over the last few months has been on the above issues, less attention has been paid to the role and impact of healthcare information technology (HIT), which encompasses the suite of technological tools, such as electronic health records or electronic prescriptions, that care providers use to store, share, and analyse their patient's health data. Before the COVID-19 crisis, healthcare systems around the world were radically transformed by HIT. While there are indeed many **benefits** associated with the increased adoption of HIT, there are also many negatives linked to its use as well – one of the most prominent being the psychological stress that can result from using HIT, commonly referred to as technostress.

For several years, technostress has been studied and characterised as purely negative. A broader reading of the stress literature, however, suggests that psychological stress may be both positive and negative, meaning that technostress may also have a “bright side” in addition to a dark side. This begs the following questions: How are healthcare workers currently experiencing stress associated with HIT? How can healthcare managers curb the impacts of negative stress linked to HIT?

Our recently published **investigation** may offer some insight. Before the pandemic, we studied how hospital nurses in the U.S. use HIT, and if (or how), such use is linked to positive and negative psychological stress as well as positive and negative workplace outcomes. The study involved interviews with nurses and an analysis of survey data provided by nurses.

Based on our interviews, we identified several *challenge* techno-stressors, or “positive stressors” related to the use of HIT that nurses tended to appraise as promoting task accomplishment. We also identified

several *hindrance* techno-stressors, or “negative stressors,” which nurses viewed as barriers or obstacles to task accomplishment.

One of the challenge techno-stressors described by nurses was linked to HIT’s usefulness, while another was associated with nurses having a say in software updates. For example, a pre-operation and recovery nurse explained the usefulness in terms of quickly accessing a patient’s medical history and being able to promptly send her patient’s care plan to several other hospitals and practices in the same network. Moreover, an operating room nurse said that her hospital updated several software features based on feedback from nurses. These experiences were corroborated by the quantitative analysis.

However, one result surprised us. Though many nurses initially expressed goodwill when receiving technical support, which we initially considered a challenge techno-stressor, the results of the quantitative study revealed that, in general, nurses viewed receiving technical support as hindering their work. This could be because nurses are likely unfamiliar with technological terminology that technical support staff may use when assisting them with technological issues. Technical support may also appear insensitive and arrogant at times, thus resulting in them being perceived by nurses as a barrier to task accomplishment.

The hindrance techno-stressors were described by nurses as problems with HIT’s reliability, insecurity about losing their jobs due to lack of technology skills, and an increased workload demanded by HIT. For example, a float nurse, who changes units depending on where he or she is needed, detailed that each time she turned on the computer in a patient’s room, she was unsure if it would start up quickly or take several minutes. Moreover, a nurse in the cardiac unit mentioned that she felt “threatened” by more “computer-savvy” nurses, while another nurse in the same unit said that she often spent her lunch break updating patient charts due to the overwhelming amount of data entry required to update a patient’s medical record.

The results of the survey analysis confirmed many of the findings from the interviews. Overall, the positive psychological states associated with the challenge techno-stressors increased job satisfaction, which was related to lowering feelings of turnover intention. The negative psychological states associated with the hindrance techno-stressors decreased job satisfaction and increased the likelihood of turnover. There is currently a **shortage of nurses**, and, especially today, hospitals can ill-afford the turnover of experienced nurses.

Can this information help with the current crisis? The good news is that nurses, and likely other care providers, often find HIT useful and experience positive stress when they can send patient data easily across private practices, hospitals, and nursing homes and quickly access a patient’s medical history. Easily and accurately sharing patient data during a pandemic is likely key to providing quick and effective patient care. Additionally, nurses in our study, when involved in the design and implementation of software updates, experienced more positive stress as well. A participative approach to HIT updates, rather than one that is mandated unilaterally from the top, is therefore recommended.

Healthcare managers should also remember that before the pandemic, nurses in our study felt overloaded by the extra work that technology created, and often felt insecure about their technical skills related to the very technology that was adopted to keep patients safe and healthy. Further, technical support was regarded as somewhat of a barrier to providing effective care. Now, faced with an even more chaotic environment, and the addition of new technology to treat patients, these negative feelings can be expected to have been exacerbated, and the distress arising from not knowing how to use HIT effectively is only likely to increase.

As the world prepares for a second wave of COVID-19, and as many countries continue to fight the first wave, it is more important than ever for healthcare managers to involve nurses, doctors, and other key care providers in improving technology. One never knows — the smallest technological upgrade may save many lives.



Notes:

- This blog post is based on *The Bright and Dark Sides of Technostress: A Mixed-Methods Study Involving Healthcare IT*, *Management Information Systems Quarterly*, Vol. 44 Iss. 2 (2020)
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