PSYCHOLOGICAL WELL-BEING OF MEDICAL STUDENTS DURING CLERKSHIP: TRADITIONAL BLOCK ROTATIONS VS. LONGITUDINAL INTEGRATED CLERKSHIPS

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ABSTRACT

The psychological well-being of medical students has been an area of concern for many years. Multiple studies have consistently found that the mental health of medical students deteriorates after the onset of medical school, suggesting that medical school and the stressors inherent to it is the causal factor.[1–5] Self-Determination Theory provides a means of understanding the mental health of medical students: student motivation is more or less encouraged based on the support or frustration of the basic needs for autonomy, competence, and relatedness.[6,7] These basic needs may be better met in the first clinical year of training via a Longitudinal Integrated Clerkship (LIC) format, rather than the Traditional Block Rotation (TBR) approach.[8–11] A number of benefits have been attributed to LICs due to the provision of opportunities to participate in comprehensive patient care over time, continuity of clinical supervision, and simultaneously multidisciplinary learning.[9] Assessment of the antecedents and definition of psychological well-being among medical students in both forms of clerkship would allow critical comparison of students' mental health. Assessment will be carried out using two online surveys – the Basic Psychological Needs Satisfaction and Frustration Scale, and the Psychological Well-Being Scale – administered at three different time points over the first year of clinical training.

INTRODUCTION

For years, literature has been emerging regarding the state of mental health among medical students, residents, and physicians. As training begins and progresses, students' mental health deteriorates and becomes significantly worse than age-matched peers in the general population.[1–3] One comprehensive meta-analysis performed by Rotenstein and colleagues found that the rate of depression and depressive symptoms among medical students is 2.2-5.2 times higher than the general population.[3] This deterioration is likely due to a multitude of stressors that are inherent to medical school. These stressors revolve around the themes of adjustment to the medical school environment and workload, financial concerns, encounters with death and human suffering, ethical conflicts, competition for residencies, and learner mistreatment.[1,4,5]

The epidemic of poor psychological well-being among medical students worldwide can be better understood through Self-Determination Theory (SDT). SDT posits that humans are innately motivated towards growth and intellectual challenge, and that the learning environment can either support or undermine this motivation.[7] According to SDT, a supportive environment reinforces the basic needs of all individuals: autonomy, competence, and relatedness.[6,7] It is logical, then, that any proposed solution to the problem of poor psychological well-being among students should be supportive of these three basic needs.

One potential option that both supports SDT's basic needs and has multiple proven benefits is the implementation of Longitudinal Integrated Clerkships (LICs), rather than Traditional Block Rotations (TBRs). TBRs consist of usually 6-8 week rotations in medical

specialties, which results in multiple preceptors and fragmented learning.[8] On the other hand, LICs have been developed so that students participate in providing care to patients over time, are supervised by the same clinical supervisors, and meet the majority of the required clinical competencies simultaneously via a multidisciplinary approach.[8,9] A number of benefits have been linked to LICs, including a more enriched, personal learning experience that results in superior clinical performance and greater development of individual values and ethics.[8,9] Of particular importance to this study, LICs anecdotally provide enhanced motivation, competence, emotional support, a sense of belonging, and resilience for medical students.[10,11]

Therefore, it is hypothesized that LICs foster greater psychological well-being than their TBR counterparts due to the support of SDT's three basic needs of autonomy, competence, and relatedness. Assessment of psychological well-being will be carried out using two scales: the Basic Psychological Needs Satisfaction and Frustration Scale, and the Psychological Well-Being Scale. These scales will be administered as online surveys, three times over the course of the first clinical year of training. Participation of both LIC and TBR students across Canada will be sought. Comparison of individual scores over time and the overall scores of LIC vs TBR students will provide insight into how these different formats of clerkship impact psychological well-being.

REVIEW OF LITERATURE

Current State of Mental Health Among Medical Students

Prospective medical students must endure years of preparation and a rigorous selection process before being admitted to medical school.[1] However, things do not get easier upon acceptance; once students are accepted into a medical school, they face a whole host of stressors inherent to the medical curriculum. Some of these stressors include, but are not limited to: adjustment to the medical school environment; financial concerns; large amounts of information to learn and apply to a clinical setting; encounters with death and human suffering; sleep deprivation; ethical conflicts; and the competitive application process for residencies.[1,4,5,12] The culture of medicine applies the additional pressures of always being there for your patients and reluctance to admit vulnerability.[12]

Given the above stressors, it comes as no surprise that the current state of mental health amongst medical students is quite poor. Multiple studies have shown that the mental health of students starts off similar to age-matched peers, and then worsens throughout training.[1,2] This divergence of the state of mental health between medical students and age-matched peers after the start of medical training suggests that medical school is the causal factor.[3] Poor mental health among students manifests itself in multiple ways, including higher rates of depression, burnout, mental illness, suicidal ideation, and suicide in medical students compared to the general population.[2]

In a meta-analysis of 195 studies involving 129,123 students from 47 countries completed by Rotenstein and colleagues, it was found that the crude prevalence of depression

and depressive symptoms was 27.2%.[3] This places the prevalence of depression and depressive symptoms in medical students at 2.2-5.2 times higher than the general population for the same ages.[3] The crude prevalence of suicidal ideation amongst medical students was also found to be elevated at 11.1%.[3]

The issue of poor mental health among medical students is compounded by the stigma surrounding help seeking. In the study completed by Rotenstein and colleagues, a subset of seven studies found that 15.7% of individuals who screened positive for depression sought either psychological help or mental health treatment.[3] This finding is supported by another study of mental health stigma amongst physicians: of the 18% that reported distress, 25% considered getting help and 2% actually got help.[12] Common reasons cited for not seeking help included shame, fear of disclosure, and the belief that help seeking is a sign of weakness.[2,12]

Addressing the Problem: Self-Determination Theory

Self-Determination Theory (SDT) offers an avenue to study the state of medical student psychological well-being. SDT posits that human behavior is motivated by a mixture of extrinsic and intrinsic motivations.[6] These motivations can be used to explain the cognitive and social development of individuals.[6] Furthermore, according to SDT, a person's volition is supported by three basic needs: autonomy, competence, and relatedness.[6] If an environment is supportive of these needs, enhanced performance, persistence, and creativity can be anticipated.[6,7] On the other hand, if an environment controls and pressures a learner, these basic needs will be undermined and result in a detrimental impact.[6,7]

This framework can be directly applied to the learning environment of medical students. If the basic needs of autonomy, competence and relatedness can be met, autonomous motivation is fostered.[13] Autonomous motivation in medical students is associated with stronger psychosocial beliefs, and is negatively correlated with exhaustion, cynicism, and inefficacy.[13] If medical education can be altered in such a way that SDT's basic needs are met, it should correlate with less burnout and better psychological well-being for students.

Addressing the Problem: Longitudinal Integrated Clerkships

A potential way of implementing SDT principles into medical education would be transitioning the format of clerkship from a Traditional Block Rotation (TBR) approach to a Longitudinal Integrated Clerkship (LIC) format. Historically, clerks have rotated through core specialities with the goal of achieving a functional knowledge of medicine within each domain.[8] With hospital care shifting towards shortened patient stays in hospital and more ambulatory diagnoses and management, TBR-educated students are not privy to the same quality of education as their predecessors.[8] In addition, TBRs require frequent changes in medical discipline, which fragments learning and clinical supervision.[8] It follows that the central needs proposed by SDT may not be adequately supported by this method of clerkship.

LICs, on the other hand, are based upon the following three principles when it comes to medical education: (1) students participate in comprehensive care of patients over time; (2) students are provided with continuity of clinical supervision; (3) the majority of clinical competencies across multiple disciplines are met simultaneously.[8,9] A great number of benefits

have been attributed to LICs in a variety of areas concerning student development. For instance, LIC students' values and ethics are more mature than their TBR peers, with greater empathy, a greater sense of responsibility towards patients, and a lower likelihood of experiencing "ethical erosion" during the first clinical year.[8,9,14] LIC students also receive more clinical exposure, and are more likely to consider themselves part of the healthcare team.[8,9] The longitudinal course of LICs allows for more holistic, patient-centered learning compared to TBRs where students are more likely to develop "functional" rather than "meaningful" relationships with their patients.[14] Overall, LIC students are better prepared to become competent residents than their TBR-trained peers.[8,9]

LICs also have advantages over TBRs within the context of SDT. More clinical exposure under the guidance of the same clinical supervisor allows for a gradual escalation in the complexity of cases faced by the student and more meaningful feedback.[8,9] This gradual increase in challenge facilitates enhanced motivation and feelings of competence in students.[11] Anecdotal evidence supports the other two SDT basic needs of autonomy and relatedness: students were provided with relationship via the longitudinal nature of the program, as well as a sense of belonging and resilience.[10]

Conclusion

Based upon recent literature, it is clear that the psychological well-being of medical students is under threat with much higher rates of suicidal ideation and depression than the general population.[1–3,12] Within the context of SDT, students' poor mental health can be

contextualized as frustration of their basic needs for autonomy, competence, and relatedness.[6,7] Given the positive results of multiple studies examining LICs, a potential means of addressing this needs frustration is to transition the first year of clinical training to a LIC model, rather than a TBR format.[8,9,11,14]

METHODOLOGY

The psychological well-being of medical students in both Longitudinal Integrated Clerkships (LICs) and Traditional Block Rotations (TBRs) will be assessed using two surveys. The surveys selected are the Basic Psychological Need Satisfaction and Frustration (BPNSF) Scale, and the Psychological Well-Being (PWB) Scale. The BPNSF Scale was selected because it directly assesses the satisfaction and frustration of Self-Determination Theory's (SDT's) basic needs of autonomy, competence, and relatedness. In other words, the BPNSF Scale allows assessment of the extent to which SDT's basic needs are being fostered within the medical environment. The other scale selected, the PWB Scale, allows assessment of the definition of well-being. The 42-point version of the scale was selected, as it provides a balance between statistical validity and ease of administration.

The surveys will be administered using an online format at three time points over the course of the first clinical year of training: at the beginning of clerkship, halfway through the year, and at the end. Administering the surveys multiple times will allow a baseline to be established and an assessment of the change in psychological well-being over the course of the LIC and TBR clerkships, respectively. Data collected will be de-identified to protect personal identity.

The surveys will be administered to schools with LIC programs across Canada, with the exception of Northern Ontario School of Medicine (as they do not have a TBR program with which to compare).

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