
An analytical cross-sectional study on the relationship of perceived social connectedness and burnout symptoms in medical students from a private tertiary institution in Metro Manila enrolled in an online curriculum for the academic year 2020-2021

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Abstract

Introduction Online learning was put at the forefront for the safe continuation of education amid the COVID-19 pandemic. This study determined the association of the level of social connectedness and symptoms of burnout in a purely online academic curriculum.

Methods This analytical cross-sectional study design included medical students enrolled in a private tertiary institution in the National Capital Region as respondents in an online survey. The perceived social connectedness and symptoms of burnout were objectively measured, using previously validated questionnaires, the Social Connectedness Scale - Revised (SCS-R), and the Copenhagen Burnout Inventory (CBI). The prevalence risk ratio (PRR) was computed.

Results Of the 119 respondents, majority reported reduced levels of social connectedness (72.3%) and experienced symptoms of burnout (85.7%). Among those with reduced levels of social connectedness (PRR: 1.25; 1.00, 1.55), there was a higher risk of having symptoms of burnout.

Conclusion Amid the implementation of a purely online curriculum, medical students with reduced social connectedness had an increased risk of experiencing symptoms of burnout.

Key words: Social connectedness, burnout symptoms, online medical curriculum

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In March 2020, the World Health Organization (WHO) declared the novel-coronavirus 2019 (COVID-19) as a worldwide pandemic, and as a result, the Philippine government placed the entire country under lockdown.^{1,2} Organizational restructuring and changes were forced upon many institutions, particularly medical schools, wherein the withdrawal of clinical clerks from hospitals and bedside teaching led to an abrupt transition to online learning. Various challenges and barriers to online learning (i.e., technical difficulties, inaccessibility to the internet and/or lack of stable internet connection,

sociopolitical and psycho-emotional family problems, and loss of belongingness in the student community) soon became evident and had negatively affected the attainment of learning outcomes in the traditional mode of teaching.² Stay-at-home and social distancing orders brought about by the pandemic also impeded social interaction, which increased the risk in negatively affecting belongingness.³ Belongingness had always been integral to one's overall well-being; thus, its compromise could have potentially hampered success in online learning. Another dimension of strain to online learning was further added as some students felt isolated and distracted due to the development of anxiety, depression, loneliness and alienation which could be explained by the lack of belongingness and social connectedness.³ The combination of drawbacks associated with online learning may have contributed to the onset of burnout, which is characterized by physical, mental, and emotional exhaustion resulting from excessive demands placed on individuals by various stressors. Burnout can manifest through symptoms such as increased fatigue, quickness to anger, heightened irritability, cynicism, reduced professional efficacy, and feelings of isolation, along with a diminished sense of accomplishment despite investing more time in work.^{4,6} As the basic medical curriculum had long been regarded as a demanding course with increased mental and physical requirements, medical students might be at an increased risk of burnout syndrome. Medical students often resorted to inadequate coping mechanisms (e.g., sleep deprivation, loss of time for family and friends and physical exercise) to deal with the rigors of medical school to the detriment of their own health and career.^{5,7,8} The recognition of the adverse effects on individuals experiencing burnout syndrome had drawn attention; hence, the Copenhagen Burnout Inventory (CBI) and Maslach Burnout Inventory (MBI) were created to determine the prevalence of burnout among individuals in the human service sector and the general population, respectively.^{6,9}

As the COVID-19 pandemic brought about the need for social distancing and severely limited interaction, online learning had been placed at the forefront for the safe continuation of education in today's "new normal". Belongingness and social connectedness, which had been integral components to one's overall well-being, suffered greatly, more

notably among medical students. Medical students could inadvertently develop feelings of anxiety and loneliness, which could compromise their overall well-being and even possibly jeopardize their ability to be at their peak performance, especially in the online learning environment.

This epidemiological investigation aimed to shed light on the situation of medical students enrolled in an online curriculum at a private tertiary medical institution during the COVID-19 pandemic. The recognition of the prevalence of burnout among medical students enrolled in an online curriculum during the COVID-19 pandemic could influence administrative decision-making, academic restructuring, and more optimal learning practices for future healthcare professionals during and beyond the pandemic. The results of this study could allow for early intervention and provision of services to students experiencing burnout, which might relieve obstacles to the achievement of success in online learning. A systems-based approach might be employed by the administrative office of tertiary medical institutions to effectively address and mitigate the development of burnout among its students currently enrolled in online curricula during the COVID-19 pandemic. Thus, the study aimed to identify a possible causal relationship between social connectedness and burnout among medical students of a private tertiary medical institution enrolled in an online curriculum during the COVID-19 pandemic. More specifically, the study described the socio-demographic profile of respondents of a private tertiary medical institution enrolled in an online curriculum during the COVID-19 pandemic, to determine the proportion of the study respondents with reduced perceived social connectedness, and to determine the proportion of the study respondents with symptoms of burnout.

Methods

An analytical cross-sectional study was conducted to determine the relationship of perceived social connectedness and burnout among medical students from a private tertiary hospital in the National Capital Region (Metro Manila). Burnout was measured using a modified Copenhagen Burnout Inventory (CBI), which only consisted of the Personal Burnout and Work-Related Burnout subscales. Both subscales were five-point Likert scales and had 13 items each. A total score of greater than 35 was considered as positive

for burnout or having burnout symptoms. Social connectedness, on the other hand, was assessed using the Social Connectedness Scale - Revised (SCS-R), a six-point Likert scale with 20 items. A score of less than 90 was considered to have decreased / lacking social connectedness. The study utilized convenience sampling and employed an online survey which was disseminated through different social media platforms. Each respondent was asked to fill up a consent form before proceeding with the rest of the questionnaire. The study was approved by the UERMMMCI Research Institute for Health Sciences Ethics Review Committee.

Undergraduate medical students from Year Levels I to III who were residing with their families and/or relatives in the Philippines and enrolled in an online curriculum for the Academic Year (AY) 2020-2021 were recruited. Individuals with symptoms of hyperthyroidism and/or diagnosed with any mood, depressive, or psychotic disorders were excluded. Using a Z-value for alpha error of 1.96, hypothesized proportion derived from past studies of 0.6111, and proportion of the value being studied of 0.75, a sample size of 90 was computed.

Analysis of the basic results was performed with descriptive statistics to elucidate frequencies and percentages based on the CBI and SCS-R scales. Results were interpreted by computing for the prevalence risk ratio (PRR) with a confidence interval of 95% using Chi square as statistical analysis to determine the association between social connectedness and burnout among the respondents. Respondents with burnout and/or reduced social connectedness based on their results after answering the CBI and SCS-R were referred to a psychiatrist for formal evaluation and possible subsequent intervention.

Results

The final number of respondents included in the study was 119. As shown in Table 1, majority belonged to the 23-24 age group (52.9%), female (73.9%), Roman Catholics (79.8%) and residents of the National Capital Region (58%). All of the respondents were residing with family and relatives. All of the study respondents had at least two electronic gadgets that could be used for online teaching-learning activities; 75.8% owned more than two electronic equipment (i.e., smart phone, computer tablet, and personal

computer). In their respective homes, 89.9% of respondents had a designated personal work / study space, while 10.1% of respondents did not have a specific area for online didactics.

Table 1. Social-demographic profiles of survey respondents from a private tertiary institution in Metro Manila as medical students enrolled in the online curriculum for Academic Year 2020-2021.

Variables	N	%
Age Groups (years old)		
21-22	42	31.9
23-24	72	52.9
25-26	15	12.6
27 and above	3	2.5
Sex		
Male	31	26.1
Female	88	73.9
Religion		
Roman Catholic	95	79.8
Others	24	20.2
Address		
National Capital Region	69	58
Other Provinces	50	42
Year Level		
Level I	43	36.1
Level II	56	47.1
Level III	20	16.8
Currently Residing		
With Family / Relatives	115	94
With Friends	3	3
Alone	1	3
Number of Devices Available for Online Teaching-Learning Activities		
1	-	-
2	30	25.2
More than 2	89	74.8
Has Personal Work / Study Space at Home		
Yes	107	89.9
No	12	10.1

As shown in Table 2, there were 86 respondents (72.3%) who had experienced reduced social connectedness during the online learning setup. Respondents were considered to have reduced social connectedness if they attained a score below 90 on the

Social Connectedness Scale. This showed that most of the medical student population had lower social connectedness.

Table 2. Frequency of reduced or normal social connectedness among survey respondents from a private tertiary institution in Metro Manila as medical students enrolled in the online curriculum for Academic Year 2020-2021.

	F (n=119)	%
Reduced Social Connectedness	86	72.3%
Normal / Adequate Social Connectedness	33	27.7%

Table 3 presents the prevalence of burnout among the study respondents, which was found to be 85.7%. This determination was made by considering respondents who scored 35 and above on the Copenhagen Burnout Inventory (CBI) as experiencing burnout. The results indicate that a significant proportion of medical students were affected by burnout during the online learning setup.

Table 3. Frequency of burnout among survey respondents from a private tertiary institution in Metro Manila as medical students enrolled in the online curriculum for Academic Year 2020-2021.

	F (n=119)	%
With burnout	102	85.7%
Without burnout	17	14.3%

In Table 4, the crude prevalence rate ratio (PRR) for having symptoms suggestive of burnout possibly caused by reduced social connectedness was computed to be 1.25 (95%; CI: 1.00, 1.55). This suggested that among medical students with reduced

social connectedness, there was higher risk of having burnout, and this was statistically significant.

Discussion

Since the COVID-19 pandemic began and with the implementation of lockdown and community quarantine protocols in the Philippines, psychological stress had been evident among many Filipinos, including young adult medical students, which impacted on their ability to cope with the rigors of a pure online medical curriculum. Medical schools were forced to abruptly shift from the conventional face-to-face learning towards the current online learning which resulted in students expressing feelings of anxiety, burnout, loneliness, homesickness, grief, and hopelessness.² Medical students were at risk of burnout due to loss of social support, which could inadvertently affect the affective, cognitive, social, and psychomotor domains of learning. Social connectedness was the most important protective factor of burnout that should be addressed especially in the healthcare setting.¹⁰ Consequently, this underscores the significance of gaining insight into the status and correlation between burnout symptoms and social connectedness among medical students enrolled in an online curriculum at a tertiary medical institution.

In this epidemiologic investigation, more than four-fifths (85.7%) of the student population had burnout symptoms and more than two-thirds (72.3%) experienced reduced social connectedness. Almost two-thirds of the respondents described themselves as having burnout symptoms with reduced social connectedness. The PRR was calculated with a value of 1.25, indicating a positive association between the reduction of social connectedness and prevalence of burnout symptoms in this study. This suggested that an increased frequency of reduced social connectedness could also be related to higher risk for burnout symptoms.

Table 4. Relationship between social connectedness and burnout among survey respondents from a private tertiary institution in Metro Manila as medical students enrolled in the online curriculum for Academic Year 2020-2021.

	(+) Burnout	(-) Burnout	Prevalence Rate Ratio (C.I.)
With Reduced Social Connectedness	78 (65.5%)	8 (6.7%)	1.247 (95% CI 1.001, 1.553)
Without Reduced Social Connectedness	24 (20.2%)	9 (7.6%)	

The COVID-19 pandemic together with the changes in social distancing and online learning had been associated with a decrease in levels of social connectedness globally.¹¹ This was consistent with current findings of a 72.3% frequency proportion of individuals having reduced social connectedness. Some studies pointed to the pivotal role of modern technology in facilitating virtual interactions within the community.¹¹⁻¹³ However, a qualitative study highlighted the importance of interaction within a physical space and the limitations set by online learning.¹¹ The study further assessed the primary drawback of online learning to be reduced levels of social connectedness. In addition, unstable and unreliable internet services and episodic power interruptions throughout the Philippines should also be taken into account when assessing the limitations of online interactions, in the setting of a purely online medical curriculum.¹¹

In a previous systematic literature review and meta-analysis on burnout among medical students, burnout prevalence ranged from 7.0% to 75.2% using varying country-specific factors, applied instruments, and cut-off criteria for burnout symptomatology, yet none were as high as the observed 85.7% frequency proportion in this present study.¹⁴ Further, current data appeared inconsistent with similar studies on the relationship of burnout and online learning that showed a drop in burnout symptoms.^{15,16} The increased prevalence of burnout, as well as online learning, had been independently associated with decreased academic performance in medical students.¹⁷

This study found a PRR (Prevalence Rate Ratio) of 1.25, indicating that an increase in the frequency of reduced social connectedness was associated with a higher risk of burnout symptoms. These results were comparable with previous research regarding adequate social connectedness as a protective factor in reducing the prevalence of burnout.¹⁸⁻²⁰ However, there were also studies which concluded that there was no association between social support and prevalence of burnout.^{21,22} These conflicting statements might be attributed to the disparity in inventories for burnout and social connectedness used, as well as differences in analyzing the data.

Social support was frequently shown to have a buffering effect against stress.^{19,23} This allowed greater resiliency of students amid a myriad of psychosocial stressors. The same set of studies hinted that support

from the school or teachers would yield the strongest relationship with student burnout, compared to other forms of social support, such as support from friends or family.^{19,23} This also emphasized that school or teacher support contributed the greatest in building resilience of their students due to the direct and practical applications of their help.^{19,23} This implied that the different types of social support had varying strengths in the well-being of students. In one meta-analysis, it was reported that students who experienced reduced academic achievement perceived inadequate social support.¹⁹ Another study argued that social support regulated the stress and allowed positive coping against the stress.²⁴ These studies would therefore conclude that intervention programs against burnt out students would first require assessment of the student's feeling of inefficacy and the perceived amount of social support they received from the school, teachers, and their friends and family.¹⁹

Conclusion

Amid the COVID-19 pandemic and the implementation of a purely online curriculum, medical students with reduced social connectedness had an increased risk of experiencing symptoms of burnout, PRR of 1.25 (95% CI 1.00, 1.55), and this measure of association was statistically significant.

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