

The COVID-19 pandemic and first-year medical students' academic motivation

Aidos K. Bolatov (✉ bolatovaidos@gmail.com)

Astana medical university <https://orcid.org/0000-0002-5390-4623>

Research Article

Keywords: COVID-19, motivation, medical education, medical students

Posted Date: February 25th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-215761/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

The study aimed to investigate the relationships between academic motivation and the psychological well-being of 1st-year medical students during the COVID-19 pandemic. The total number of respondents in the cross-sectional study was 273. Intrinsic motivation was positively correlated with fear of COVID-19 and negatively correlated with psychological collapse and negative changes in quality of life due to the COVID-19. Extrinsic motivation positively associated with fear of COVID-19. Amotivation positively correlated with psychological collapse and negative changes in quality of life. In conclusion, COVID-19-related changes in quality of life and psychological destruction were predictors of academic motivation among 1st-year medical students.

Background

The choice of medical studies depends on various factors. Goel et al. identified three domains: scientific, societal, and humanitarian [1]. Gaşiorowski et al. (2015) concluded that altruistic and scientific reasons are the main motives for choosing a medical career [2]. Narayanasamy et al. (2019) extracted the following factors that influence students to join medicine: personal growth, professional calling, personal concerns, and professional concerns factor [3]. It is also known that intrinsic and extrinsic motivation positively correlates with professional identity [4].

After entering the university, the further education of students depends on the motivation to study. According to the social-cognitive approach, academic motivation is an interaction between a student's perceptions of his learning environment, learning behavior, and environmental factors [5]. Orsini et al. based on self-determination theory categorized the following determinants influencing motivation: intrapersonal such as gender and personality traits, and interpersonal determinants such as academic conditions and lifestyle, learning climate [6].

The COVID-19 pandemic has resulted in significant burdens globally and healthcare workers are at the epicenter of an unprecedented COVID-19 crisis [7]. Awareness of the role of the profession, both in a personal and in a global concept, influenced the self-identification among 2020 entrants and future doctors. Crises such as the pandemic can change, hinder, or accelerate the medical students' professional identity formation [8]. However, the COVID-19 pandemic has disrupted the lives of many people across the world, including medical students [9]. Researches highlighted the negative impact of the COVID-19 pandemic on the psychological well-being of college students, who are likely to develop post-traumatic stress disorder, anxiety, depression, and other symptoms of distress [10]. Moreover, the abrupt transition to distance learning has had an ambiguous impact on medical education.

The study aimed to investigate 1st-year medical students' psychological well-being during the COVID-19 pandemic and its influence on academic motivation.

Activity

This cross-sectional questionnaire-based study was carried out from November 16 to 19, 2020. The study was attended by 1st-year medical students at Astana Medical University (Nur-Sultan city, Kazakhstan).

Quality of Life affecting by the COVID-19 pandemic was assessed by the 6-item COV19-QoL scale created by Repišti et al. (2020) [11]. The level of destruction that COVID-19 has created on the psychology of individuals was assessed by the COVID-19 Psychological Destruction Scale (COV-PDS) with "Collapse" and "Fear" dimensions created by Akan (2020) [12]. Academic amotivation level was assessed by the Academic Motivation Scale (AMS) created by Vallerand et al. [13].

Descriptive statistics were performed using Mean (M), Standard Deviation (SD) for quantitative variables, and percentages for qualitative variables. ANOVA was performed to compare the effect of different variables. Pearson correlation coefficients were calculated. Linear regression analysis was performed to evaluate associations of the independent variables with academic motivation.

Data analysis was conducted using SPSS version 20.0 and Jamovi version 1.2.17. A statistically significant difference was accepted at a p-value less than 5%.

Results And Discussion

This study conducted during the lockdown period by COVID-19 pandemic on 1st-year medical students illustrated the presence of the possible factors that could affect the academic motivation: quality of life affecting by and the level of psychological destruction from the COVID-19 pandemic.

The total number of respondents was 273, with an average age of 17.44. 203 (74.6%) were female, and 70 (25.6%) were male students.

Intrinsic motivation is the doing of an activity for its inherent satisfactions rather than for some separable consequence [14]. Fear of COVID-19 ($r = 0.143$, $r = 0.133$, $p < 0.05$), psychological collapse ($r = -0.154$, $r = -0.202$, $p < 0.05$) and negative changes in quality of life due to the COVID-19 ($r = -0.133$, $r = -0.177$, $p < 0.01$) were associated with intrinsic motivation, in particular, with intrinsic motivation to know, respectively. Intrinsic motivation toward accomplishment correlated with psychological collapse ($r = -0.124$, $p < 0.05$) and intrinsic motivation to experience stimulation - with fear of COVID-19 ($r = 0.157$, $p < 0.01$).

Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome [14]. Extrinsic motivation positively associated with fear of COVID-19 ($r = 0.136$, $p < 0.05$).

Amotivation is the state of lacking an intention to act. When amotivated, a person's behavior lacks intentionality and a sense of personal causation [14]. In current study the level of amotivation positively correlated with psychological collapse ($r = -0.449$) and negative changes in quality of life ($r = 0.324$), $p < 0.01$.

Linear regression analysis revealed that COVID-19-QoL ($\beta = -0.547$) and COVID-19 psychological destruction ($\beta = -0.238$) were predictors of academic motivation, $p < 0.001$. Anxiety about the future in case of infection had the effect on both intrinsic ($\beta = 0.213$, $p < 0.001$) and extrinsic motivation ($\beta = 0.194$, $p = 0.001$). However, significant relationship between the level of motivation and diagnosis of COVID-19 was not found. The feeling of inability to overcome life's difficulties during a pandemic was negatively associated with motivation for knowledge ($\beta = -0.219$, $p < 0.001$), and the lack of desire to do anything due to a pandemic with intrinsic motivation in general ($\beta = -0.208$, $p = 0.001$). Difficulty handling stress caused by uncertainty about the future was a major predictor of amotivation ($\beta = 0.421$, $p < 0.001$). Opinion that mental health has deteriorated due to the outbreak of coronavirus infection was associated with intrinsic motivation ($\beta = -0.173$, $p < 0.05$) and amotivation ($\beta = 0.357$, $p < 0.001$).

Thus, the factors associated with academic motivation among 1st-year medical students were identified. Fear of the COVID-19 was positively associated with both intrinsic and extrinsic motivation levels. Whereas psychological collapse and a decrease in the quality of life during a pandemic were negatively associated with motivation and positively associated with the level of amotivation. Further research is needed to assess the effects of global health crises such as the COVID-19 pandemic on motivation and identity formation of any stage medical students.

Declarations

Acknowledgments: Author thanks the dean's office of the Faculty of Medicine at the Astana Medical University for their support in this study.

Funding: Author received no specific funding for this article.

Conflicts of interest: Author declare no potential conflict of interests.

Availability of data and material (data transparency): All data available by request to corresponding author.

Authors' contributions: -

Ethics approval: The present study was approved by the Local Ethics Committee of NpJSC "Astana Medical University" (extract from protocol No. 6 of April 6, 2020).

Consent to participate (include appropriate statements): Not applicable

Consent for publication (include appropriate statements): Not applicable

Code availability (software application or custom code): Not applicable

References

1. Goel S, Angeli F, Dhirar N, Singla N, Ruwaard D. What motivates medical students to select medical studies: a systematic literature review. *BMC medical education*. 2018;18(1):16. <https://doi.org/10.1186/s12909-018-1123-4>.
2. Gąsiorowski J, Rudowicz E, Safranow K. Motivation towards medical career choice and future career plans of Polish medical students. *Advances in health sciences education: theory practice*. 2015;20(3):709–25. <https://doi.org/10.1007/s10459-014-9560-2>.
3. Narayanasamy M, Ruban A, Sankaran PS. Factors influencing to study medicine: a survey of first-year medical students from India. *Korean journal of medical education*. 2019;31(1):61–71. <https://doi.org/10.3946/kjme.2019.119>.
4. Wasityastuti W, Susani YP, Prabandari YS, Rahayu GR. Correlation between academic motivation and professional identity in medical students in the Faculty of Medicine of the Universitas Gadjah Mada Indonesia. *Educacion Medica*. 2018;19(1):23–9. <https://doi.org/10.1016/j.edumed.2016.12.010>.
5. Pelaccia T, Viau R. Motivation in medical education. *Med Teach*. 2017;39(2):136–40. <https://doi.org/10.1080/0142159X.2016.1248924>.
6. Orsini C, Binnie VI, Wilson SL. Determinants and outcomes of motivation in health professions education: a systematic review based on self-determination theory. *Journal of educational evaluation for health professions*. 2016;13:19. <https://doi.org/10.3352/jeehp.2016.13.19>.
7. Shreffler J, Petrey J, Huecker M. The Impact of COVID-19 on Healthcare Worker Wellness: A Scoping Review. *The western journal of emergency medicine*. 2020;21(5):1059–66. <https://doi.org/10.5811/westjem.2020.7.48684>.
8. Stetson GV, Kryzhanovskaya IV, Lomen-Hoerth C, Hauer KE. Professional identity formation in disorienting times. *Medical education*. 2020;54(8):765–6. <https://doi.org/10.1111/medu.14202>.
9. Sahu P. Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. *Cureus*. 2020;12(4):e7541.
10. Saladino V, Algeri D, Auriemma V. The Psychological and Social Impact of Covid-19: New Perspectives of Well-Being. *Frontiers in psychology*. 2020;11:577684. <https://doi.org/10.3389/fpsyg.2020.577684>.
11. Repišti S, Jovanović N, Kuzman MR, Medved S, Jerotić S, Ribić E, Majstorović T, Simoska SM, Novotni L, Milutinović M, Stoilkovska BB, Radojičić T, Ristić I, Zebić M, Pemovska T, Russo M. (2020). How to measure the impact of the COVID-19 pandemic on quality of life: COV19-QoL – the development, reliability and validity of a new scale, *Global Psychiatry* (published online ahead of print 2020), 000010247820200016. doi: <https://doi.org/10.2478/gp-2020-0016>.
12. Yunus Akan. Development of the “COVID-19 Psychological Destruction Scale”: A Validity and Reliability Study, 28 July 2020, PREPRINT (Version 1) available at Research Square [<https://doi.org/10.21203/rs.3.rs-46890/v1>].
13. Vallerand RJ, Pelletier LG, Blais MR, Briere NM, Senecal C, Vallieres EF. The Academic Motivation Scale: A Measure of Intrinsic, Extrinsic, and Amotivation in Education. *Educ Psychol Measur*. 1992;52(4):1003–17. <https://doi.org/10.1177/0013164492052004025>.

14. Ryan RM, Deci EL. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemp Educ Psychol.* 2000;25(1):54–67. <https://doi.org/10.1006/ceps.1999.1020>.