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REVIEW

A Systematic Scoping Review of Motivations and Barriers in COVID-19 Volunteering Among Health Students: The Potential for Future Pandemic Volunteers

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Background: The high number of cases of COVID-19 has caused an increase in workload and a shortage of medical personnel in various countries, so volunteers are needed, such as health students. However, becoming a volunteer during a pandemic is influenced by motivational factors and barriers.

Purpose: This study aims to identify the motivations and barriers of health students as COVID-19 volunteers.

Methods: This study uses a systematic scoping review. A literature review was conducted using CINAHL, PubMed, and ScienceDirect databases. The study was eligible for inclusion if it included articles published from 2020 to 2022, full-text, and primary studies. Studies were excluded if they were not in English. The keywords used in English were "health students OR nursing students OR medical students" AND "motivation OR willingness" AND "Barriers" AND "volunteer OR volunteering OR volunteerism OR voluntary" AND "COVID-19 OR covid-19 OR SARS-CoV-2 OR COVID-19 pandemic". Study quality was assessed using the Joanna Briggs Institute (JBI) appraisal tool.

Results: We found 12 articles showing motivational factors and barriers among health students volunteering to control COVID-19. Motivational factors include domain values, understanding, enhancement, career, incentive, government, social, and demographics. In contrast, barriers include fear, lack of training and knowledge, PPE shortage, unpreparedness and role uncertainty, and lack of interest, support, and protection.

Conclusion: Our findings highlight that eight motivational factors and seven barriers influence health students' involvement in COVID-19 volunteering. However, to optimize the potential of health students, further preparation is essential to ensure that students can volunteer effectively, such as integrating volunteer training programs into the curriculum in preparation for future pandemic mitigation.

Keywords: barriers, COVID-19, health students, motivation, pandemic, volunteers

Introduction

Coronavirus Disease (COVID-19) infection has had a global impact more than any other infectious disease outbreak that has ever appeared.[1] Globally, until 5 May 2023, there were 765.903.278 confirmed cases of COVID-19, including 6.927.378 incidents of death, including Europe (276.136.217), Western Pacific (203.172.588), America (192.581.201), South-East Asia (61.120.704), Eastern Mediterranean (23.364.240), and Africa 9.527.564.[2]

The high incidence of COVID-19 triggers the need for experts, including health workers. The problem faced in handling COVID-19 is the need for more health workers, which could lead to unmanaged patients, increased workload,

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and increased cases of COVID-19.[3] In addition, previous studies revealed that during the COVID-19 pandemic, the incidence of nurse burnout was very high.[4,5] Therefore, health students are important pawns in handling the COVID-19 crisis as volunteers.[6] Various countries have also supported student health volunteer programs, such as the Ministry of Vietnam, which involved health students as a team to prevent and control the COVID-19 pandemic.[7] Meanwhile, WHO also recommends the participation of health students to be involved in handling COVID-19 according to competence.[8]

Collaboration with volunteers to provide community services has the potential to address gaps and prevent health workers from burnout during the COVID-19 crisis.[9] The International Federation of Red Cross (IFRC) defines volunteerism as voluntary without coercion which aims to provide services to vulnerable people.[10] However, deciding to volunteer during a pandemic is not easy and is influenced by the motivations and barriers that make a person move to volunteer.[11]

Health students' motivational factors and barriers to volunteering are still unclear and varied. Previous research was limited to reporting the results of surveys conducted in each country, and no one had conducted a review study to generalize and classify motivational factors and barriers for COVID-19 volunteers. For example, a qualitative survey by Seah et al revealed that 30 nursing students who volunteered for COVID019 reported being motivated by a desire to contribute and help, caring, personality, applying knowledge and learning skills, seeking experience, and having something to do.[12] However, there are barriers, namely fear, unpreparedness, and lack of training and knowledge. Meanwhile, a study by Astorp et al revealed that of the 486 health students who had decided to join the COVID-19 pandemic emergency health workforce, with motivational statements including caring, learning, pride, team learning, needed, safety, supervision, work, assignments, salary, and historic.[13] The previous studies have not identified motivational factors and barriers to volunteering for COVID-19 among health students using a systematic scoping review approach.

Conclusive information about motivational factors and barriers to volunteering for COVID-19 among health students requires additional study. Therefore, this study aims to conduct a systematic scoping review to determine the motivational factors and barriers to COVID-19 volunteering among health students.

Materials and Methods

Study Design

This study uses a systematic scoping review that follows the framework by Arksey and O'Malley.[14,15] This method is suitable for the subject of this study to explore a comprehensive and relevant study on one specific topic.[16] The framework consists of five stages: identifying research questions, identifying relevant study results, selecting studies, analyzing articles and compiling, summarizing, and reporting results.[17]

Search Strategy

Search study using PRISMA-ScR guidelines for a systematic scoping review.[18] A literature review was conducted using CINAHL, PubMed, and ScienceDirect databases. The keyword adjusts the medical subject heading (MeSH), including "health students OR nursing students OR medical students" AND "motivation OR willingness" AND "Barriers" AND "volunteer OR volunteering OR volunteerism OR voluntary" AND "COVID-19 OR covid-19 OR SARS-CoV-2 OR COVID-19 pandemic" (Supplementary Item 1).

Eligibility Criteria

The criteria in this study are based on the PCC question framework: Population: health students; Concept: motivation and barrier; and Context: COVID-19 pandemic volunteer. A study was eligible for inclusion if it included articles published from 2020 to 2022, full-text, and primary study design. Studies were excluded if they were not in English. All researchers independently screened all duplicate topics, titles, abstracts, full text, and appraised study quality.

Quality Appraisal

Study quality was assessed using critical appraisal checklist tools for qualitative research and cross-sectional studies from the Joanna Briggs Institute (JBI).[19] The evaluation for qualitative research was consistent with ten questions and four categories: yes, no, unclear, and not applicable. Score 0 for "No" and 1 for "Yes", with a total quality score ranging 0–10. The checklist tool for cross-sectional studies consists of eight questions with four categories of answers: yes, no, unclear, and not applicable". Score 0 for "No" and 1 for "Yes", with a total quality score ranging from 0–8 (Supplementary Item 2).

Data Extraction and Analysis

Data extraction was displayed using the tabulation method in Microsoft Excel (Microsoft Corp., New York, USA). The item extracted included author and year of publication, country, study design, population, sample size, gender, instrument, and outcome.

Results

Description of Study Selection

The findings of study obtained 147 articles from the four databases used. After removing duplicates from the collected articles, the collected titles screening, 31 articles remained. Then, selection based on inclusion criteria, there were 20 articles remaining. Therefore, after screening based on inclusion, 12 articles were included in this study (Figure 1). Then, the articles were analyzed using the JBI Critical Appraisal Tool assessment (Table 1).

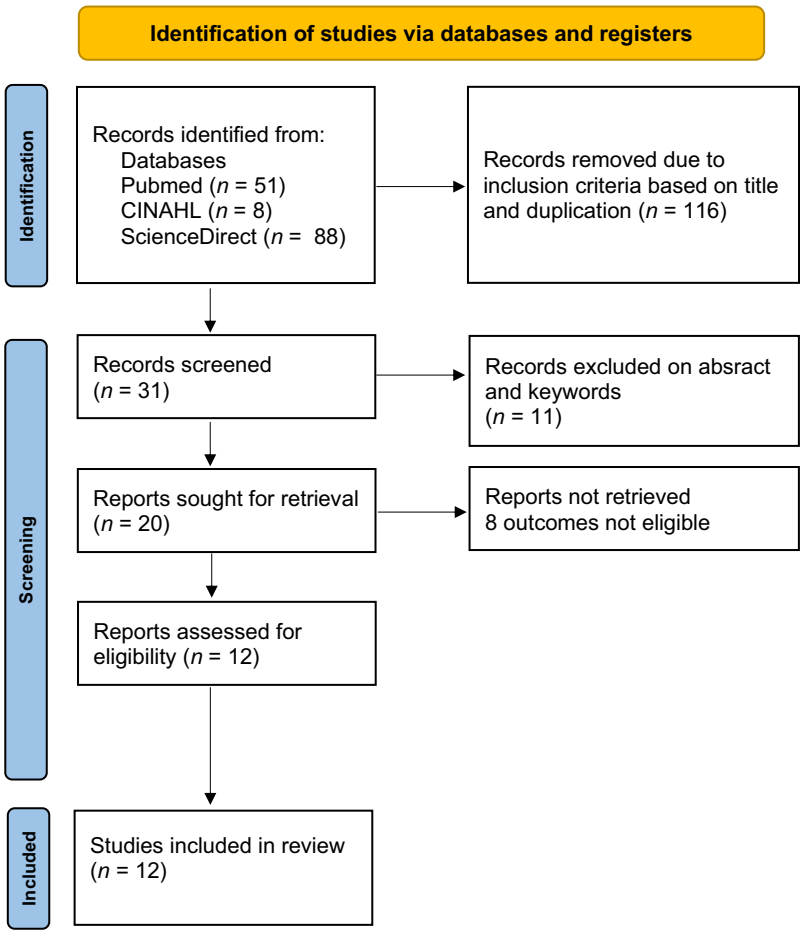

Figure 1 PRISMA Flow diagram.

Table 1 Critical Appraisal Tool

Study	Study Design	JBI Critical Appraisal Tool
Astorp et al (2020)[14]	Cross-sectional study	7/8 (87.5%)
Patel et al (2020)[20]	Qualitative study	7/10 (70%)
Seah et al (2021)[13]	Qualitative study	9/10 (90%)
Karki et al (2021)[21]	Cross-sectional study	7/8 (87.5%)
Mühlbauer et al (2021)[22]	Cross-sectional study	6/8 (75%)
Alomar et al (2021)[23]	Cross-sectional study	6/8 (75%)
Tempski et al (2021)[7]	Cross-sectional study	6/8 (75%)
Domaradzki, J and Walkowiak, D (2021)[24]	Cross-sectional study	5/8 (62.5%)
Lazarus et al (2021)[25]	Cross-sectional study	6/8 (75%)
Martin-Delgado et al (2021)[26]	Qualitative study	9/10 (90%)
Domaradzki, J (2022)[27]	Qualitative study	9/10 (90%)
Tran et al (2022)[28]	Cross-sectional study	7/8 (87.5%)

Characteristics of Study

Included studies obtained a Cross-sectional study (8 studies) and a Qualitative study (4 studies). This study's total sample of participants was 24.992 COVID-19 volunteer health students. The majority of the studies were nursing students (n= 2), medical students (n= 6), and students from various other health majors (n= 6), consisting of 24.759 samples in a cross-sectional study and 233 participants in a qualitative study. The gender characteristics involved in this study were 8.567 males, 16.293 females, and 132 were not explained. The studies included were conducted in Nepal (n= 1), Germany (n= 1), Vietnam (n= 1), Kingdom of Saudi Arabia (KSA) (n= 1), Denmark (n= 1), Brazil (n= 1), Poland (n= 2), Indonesia (n= 1), Singapore (n= 1), United Kingdom (n= 1), and Spain (n= 1) (See Table 2).

Overall, the 12 studies analyzed were grouped into demographic include gender, country region, study design, instrument, and majors, and two findings included: a) Motivational factors for health students as COVID-19 volunteers; and b) Factors hindering health students from becoming COVID-19 volunteers (See Table 3).

Motivational Factors

Value

We found 11 studies with 93.06% of the total sample in this study, and health students reported motivation to volunteer for COVID-19, namely the value component. The involvement of value and motivation influences the decision of student volunteers, including moral, altruistic, intrinsic, and patriotic aspects. The main reason was the desire to help handle the COVID-19 pandemic.[12,13,22,29] The willingness to contribute is caused by the crisis conditions.[29] Students must help patients and healthcare staff during the COVID-19 pandemic.[20] Health students said they were willing to take risks and considered their duty to serve themselves and help others.[26]

Values domain are the essential factor influencing motivation to work together in volunteering during the COVID-19 pandemic. Students with high responsibility and altruism are more easily involved in handling efforts during COVID-19.[6]

Understanding

We found that most medical students consider volunteering a way to gain clinical understanding and experience, especially during lockdowns and social restrictions.[20] We found nine studies, after which they were collected, and it was found that 47.76% or 11,937 health students became COVID-19 volunteers motivated to seek experience and

Table 2 Characteristic of Studies Reporting Motivation and Barrier of COVID-19 Volunteering Among Health Students (n = 12)

Study	Country	Study design	Population	Sample (N)	Gender		Instrument	Duration of Study	Outcome	
					Male (N)	Female (N)			Motivation Factors	Barrier Factors
Astorp et al (2020)[14]	Denmark	Cross-sectional study	Medical students	486	151	332	Online questionnaire	One week	Value, understanding, enhancement, incentive, career, and demographics	Fear and Lack of training and knowledge
Patel et al (2020)[20]	UK	Qualitative study	Medical students	132	NA	NA	Online questionnaire	Two week	Value, understanding, incentive, social, and demographics	PPE shortage, Fear, unpreparedness, and role uncertainty
Seah et al (2021)[13]	Singapore	Qualitative study	Nursing students	30	8	22	Semi-structured interview guide via online	Twelve week	Value, understanding, incentive, social, and protective	Fear, unpreparedness, role uncertainty, Lack of training and knowledge, Lack of support, and Lack of interest
Karki et al (2021)[21]	Nepal	Cross-sectional study	Medical and nursing students	261	109	152	Online questionnaire	Three week	Value, understanding, enhancement, career, and demographics	PPE shortage, Lack of training and knowledge, and Lack of support
Mühlbauer et al (2021)[22]	Germany	Cross-sectional study	Medical students	244	176	68	Online questionnaire	Five week	Value, understanding, enhancement, incentive, and career	Fear
Alomar et al (2021)[23]	Kingdom of Saudi Arabia (KSA)	Cross-sectional study	Health students	6.016	2.510	3.506	Online questionnaire	Nine day	Value, incentive, and demographics	PPE shortage, fear, Lack of training and knowledge and Lack of interest

(*Continued*)

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Table 2 (Continued).

Study	Country	Study design	Population	Sample (N)	Gender		Instrument	Duration of Study	Outcome	
					Male (N)	Female (N)			Motivation Factors	Barrier Factors
Tempski et al (2021)[7]	Brazil	Cross-sectional study	Medical students	10.433	3.166	7.267	Online questionnaire	Two day	Value, understanding, enhancement, career, and demographics	Fear and Lack of training and knowledge
Domaradzki & Walkowiak (2021)[24]	Poland	Cross-sectional study	Health students	417	116	301	Online questionnaire	Eight week	Value, understanding, enhancement, and career	Fear
Lazarus et al (2021)[25]	Indonesia	Cross-sectional study	Medical students	4.870	1.471	3.399	Online questionnaire	Sixteen week	Value, Incentive, Government, and demographics	PPE shortage, Fear, unpreparedness, and role uncertainty
Martin-Delgado et al (2021)[26]	Spain	Qualitative study	Nursing students	50	15	35	Online questionnaire	Twelve week	Value, understanding, career, and demographics	PPE shortage, Fear, unpreparedness, and role uncertainty
Domaradzki (2022)[27]	Poland	Qualitative study	Medical students	21	5	16	QPI via online	Twelve week	Value, understanding, enhancement, and social	Fear, unpreparedness, role uncertainty, and Lack of training and knowledge
Tran et al (2022)[28]	Vietnam	Cross-sectional study	Health students	2.032	840	1.192	Online questionnaire	Four week	Career, social, protective, demographics, and government	PPE shortage, fear, and Lack of training and knowledge

Notes: Medicine, traditional medicine, pharmacy, medical engineering, preventive medicine, nursing, dentistry, public health, obstetrics, and medical, (health students).
Abbreviation: QPI, Qualitative Pretest Interview.

Table 3 Motivational Factors and Barriers of COVID-19 Volunteering Among Health Students by Demographic Variable in Selected Studies

Subgroup	Number of Studies (N)	Sample Size (N)	Percentage (%)
Overall studies	12	24.992	100
Gender			
Male	11	8.567	34.27
Female	11	16.293	65.19
NA	1	132	0.52
Country Region			
European	6	1.350	5.40
America	1	10.433	41.74
Asian	5	13.209	52.85
Study design			
Cross-sectional study	8	24.759	99.06
Qualitative study	4	233	0.93
Instrument			
Online questionnaire	10	24.941	99.79
Semi-structured interview guide via online	1	30	0.12
QPI via online	1	21	0.08
Majors			
Nursing	2	80	0.32
Medical	6	16.186	64.76
Other health students	4	8.726	34.91
Motivation Factors			
Value	11	23.260	93.06
Understanding	9	11.937	47.76
Enhancement	6	11.862	47.46
Incentive	6	11.778	47.12
Government	2	6.902	27.61
Social	3	2.215	8.86
Career	7	11.861	47.45
Demographics	7	24.280	97.15
Barrier Factors			
PPE shortage	6	13.361	53.46
Fear	11	24.701	98.83
Unpreparedness and role uncertainty	5	5.103	20.41
Lack of interest	2	6.046	24.18
Lack of support	2	291	1.16
Lack of training and knowledge	7	19.279	77.14
Protective	2	2.062	8.25

Abbreviation: QPI, Qualitative Pretest Interview.

understanding. Most health students in the study took volunteering for COVID-19 as an opportunity to learn and develop new knowledge, skills and competencies and apply their knowledge.[6,12,13,20,24,26] Volunteering helps students understand new concepts, knowledge and understanding of care.[22]

Enhancement

We found six studies that revealed health students' motivation to volunteer for COVID-29, namely increasing self-esteem, there were 47.46% of the total sample involved in this study. Recognition had a significant effect on the motivation of health students to become volunteers.[29] Students think their hard work needs to be recognized by others, this indicates that their presence wants to be recognized by society.[21] Being part of something important, including

volunteers handling COVID-19, can help students gain self-confidence, feel better about themselves, make decisions, increase critical thinking, and increase knowledge.[22,26]

Incentive

We found six studies with a total sample of 47.12%, and students stated that intensive work was one of the motivational factors for students in volunteering for COVID-19. Compensation could be in the form of recognition of academic credit, achievement, receiving scholarships, and providing material compensation.[29] However, remuneration did not affect medical students' decision to volunteer for COVID-19. Incentives or compensation are not the most significant factor but are crucial to motivation.[12] This factor was included in the lowest percentage in any of the six studies involved.

Government

There is a positive correlation between government, stakeholders and universities' invitations to increase health students' motivation to volunteer for COVID-19.[27] In two articles, there were 27.61% of the sample who involved, and study findings reveal that students become COVID-19 volunteers if needed by the government and recommended by universities.

Social

We found three studies with 8.86% of the total sample. The social domain was one of the factors that motivated student volunteers for COVID-19. This motivation arose because a lockdown was implemented during the COVID-19 pandemic, so students wanted to do activities to avoid boredom.[12,21,24] Motivation to volunteer can strengthen social relationships with peers and beneficiaries and improve clinical and social skills.

Career

Health students make the volunteer experience a means of learning to become professional medical personnel and build student professional identity.[6,20] The career domain is highly motivating because it helps volunteers to find workplaces they expect in the future, allows them to choose various careers and increases success in their chosen profession. We found seven articles that included career factors as a motivation to participate in COVID-19 volunteering, with 47.45% of the sample involved in this study.

Demographic

The seven articles discussed the relationship between demographics and the motivation of COVID-19 volunteers. Gender is considered to be one of the predictors of volunteering. Most of the COVID-19 volunteer respondents in the literature findings were women (65.19%) and men (34.27%) and did not mention gender (0.52%). Female students are considered more concerned about pandemic conditions.[13] Most volunteer respondents came from final-year students because the opportunity to become a volunteer for final-year students was higher, and students already had knowledge readiness.[22]

Barrier Factors

The findings of 12 studies reveal seven domains of barriers or factors that raise doubts about joining COVID-19 volunteers among health students, namely: (1) PPE shortage: Six studies show that the availability of PPE was an essential factor for students entering COVID-19 volunteers. Some participants are willing to volunteer if adequate PPE is provided; (2) Lack of training and knowledge: Seven studies found that training affects students' willingness to become volunteers. Students who have attended training on COVID-19 are more likely to volunteer than those who have never experienced training or received exposure to COVID-19 material.[27] (3) Unpreparedness and role uncertainty: Five studies revealed that students did not take part or quit volunteering for COVID-19 due to unpreparedness and role confusion. Participants stated that the lack of information about transmission and handling during the early phase of the COVID-19 pandemic caused uncertainty; (4) Fear: We analyzed 11 studies and show that the majority of fear is the most significant influence on the decision of medical students to become volunteers. Perceptions of COVID-19 also influence health student willingness.[28] Lack of information about the transmission and handling of COVID-19 is anxiety and fear; (5) Lack of interest: Two studies show student interest and passion for volunteering. Students who are experienced as volunteers tend to be more interested in volunteering than those who have never been.[23] (6) Lack of support: Two studies found that family support positively influenced student willingness.

They would volunteer during a pandemic if their family supported them.[27] Support from family and peers influences students' decisions to become volunteers for COVID-19 [14]. Students consult with their parents and friends before volunteering.[26] (7) Protective: Two studies show that protecting family safety is the main reason and determinant of decisions not to volunteer for COVID-19. However, in several studies, the fear of transmitting COVID-19 to loved ones did not stop motivation among medical and nursing students to become COVID-19 volunteers.

Discussion

Principal Finding

The COVID-19 pandemic has led to an increased demand for healthcare workers worldwide. Meanwhile, health students have an essential role in helping the shortage of health workers respond to health problems during the COVID-19 pandemic. The lack of medical staff makes students feel obliged and morally responsible for helping others.[6,23] Thus, this phenomenon causes volunteer actions to emerge and develop.

The participation of health students in the COVID-19 pandemic is recommended by experts and implemented in several countries.[28] Students have valuable clinical knowledge and skills that can be used appropriately to assist healthcare workers. Health students can be involved in helping health workers deal with health problems in society during the COVID-19 pandemic. Students can be positioned in various fields of health services, such as interviewing patients, caring for outpatients via telemedicine, assisting with administration, calling patients with lab results, or providing child care for health workers.[6]

Volunteering is voluntary based on motivation to move directed at positive stimuli.[6] Motivational factors include moving, leading, and maintaining or supporting behaviour.[25]

Based on the results study, from the 12 articles that we analyzed, most studies showed that the motivation and willingness of health students to participate in volunteering for COVID-19 was relatively high, with factors including domain value, understanding, enhancement, career, incentive, government, social, and demographics. This motivation is explained by Clary & Snyder, namely increasing values such as altruism, learning and experience opportunities, personal growth and development, career-related clinical skills and experiences, and strengthening social relationships.[30]

Our findings in the current study are supported by previous studies, in which reasons for volunteering included a sense of duty, social commitment, interest in medicine, and improving skills.[31] For example, in a survey in Nigeria, 66.4% said they were obliged to volunteer, and 56.2% were willing to volunteer if asked by the government.[32] A sense of duty and willingness motivate the desire to volunteer during the COVID-19 pandemic.[6] In a Sri Lanka study, 93.9% of 856 medical students reported that they were obliged to assist the country in responding to the COVID-19 problem.[33]

However, there are still many health students who are not willing to become COVID-19 volunteers. The findings of our study there are factors inhibiting students from choosing not to volunteer, including fear, lack of training and knowledge, PPE shortage, unpreparedness and role uncertainty, lack of interest, lack of support, and protection. Previous studies revealed that medical students' main barriers to volunteering during the COVID-19 Pandemic included fear, lack of skills, protocols, knowledge and information, transportation, and living with family.[28] Another study revealed that fear of health and lack of medication were negative factors that influenced students not to volunteer.[23]

Overall, COVID-19 volunteering can increase motivational factors that create positive feedback in increasing willingness and preparedness. The main benefits of volunteering during the COVID-19 pandemic are helping the community and the health system and strengthening essential values, such as altruism, service in times of crisis, solidarity in forming professional identity and psychological development.[24,34,35]

Strength and Limitations

This study has limitations. The search for articles is limited to two databases and two search engines, making it possible that there is still literature that needs to be included from other databases and causes the literature to be incomplete. In addition, two researchers carried out the study's quality assessment, so the quality assessment results could be biased.

However, despite the limitations, some advantages of this study must also be recognized. First, the scarcity of this study collects literature on health students as volunteers for COVID-19 worldwide. This is the first systematic scoping

review on motivational factors and barriers to health students as volunteers for COVID-19. This research examines the motivational factors and barriers of COVID-19 volunteer students from various health faculties in various countries, including European, American, and Asian. However, the findings of this study represent three country regions that could be used as information for universities and the government as a basis for making strategic policies for handling the pandemic.

Conclusion

Based on the results of this systematic scoping review, there are 12 articles describing the motivational factors and barriers to volunteering for COVID-19 among health students. Our study has identified eight motivational factors: values, understanding, enhancement, career, incentive, government, social, and demographics. In addition, we have identified seven barriers: fear, lack of training and knowledge, PPE shortage, unpreparedness and role uncertainty, and lack of interest, support, and protection.

The implications of our study findings indicate that the potential of health students to mitigate the COVID-19 pandemic needs to be optimized. For health education, student participation in pandemic volunteerism allows students to strengthen essential values, such as altruism, community service in times of crisis, and solidarity with the profession. In addition, the government and universities can collaborate in making a policy and pandemic control system by involving health students. However, further preparation is essential to ensure that students can volunteer effectively, such as integrating volunteer training programs into the curriculum, so that these efforts are expected to mitigate future public health emergencies. This study can also become the basis for further research to examine the effectiveness of volunteer programs in responding to the COVID-19 pandemic among health students.

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Disclosure

The authors declare no conflicts of interest in this work.

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