

Universal Barriers and Facilitators for International Healthcare Students' Well-being in Higher Education: Protocol for A Systematic Integrative Review

Yao Xie, Kayode P Fadahunsi, Paul Flynn, Joe Gallagher, Walter Cullen, John O'Donoghue

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Universal Barriers and Facilitators for International Healthcare Students' Well-being in Higher Education: Protocol for A Systematic Integrative Review

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Abstract

Background: International healthcare students encounter unique hurdles as they pursue education in foreign countries. These challenges, stemming from cultural, language, and educational disparities, significantly impact their well-being. Understanding the barriers and facilitators experienced by international healthcare students is crucial for ensuring their successful integration into academic and professional spheres.

Objective: This systematic integrative review aims to comprehend the factors influencing the well-being of international healthcare students in higher education institutions worldwide. By analysing existing literature, the review seeks to uncover the common challenges faced by international healthcare students and identify the elements that contribute to their well-being. Additionally, it aims to shed light on effective strategies and interventions for supporting the well-being of this population.

Methods: The protocol is guided by the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) checklist. The main information sources include PubMed, Scopus, Web of Science, and Ebscohost supplemented with citation tracking using Google Scholar. Study selection will be done independently by two reviewers based on predetermined eligibility criteria. Qualitative data from included studies will be analysed using thematic synthesis. If there is sufficient quantitative data, meta-analysis will be conducted for specific outcome measures. Qualitative and quantitative findings will be compared and contrasted to identify areas of convergence, divergence, or complementarity.

Results: The initial literature search yielded 7927 papers from the selected databases.

Conclusions: This systematic review aims to contribute to a deeper understanding of the factors influencing the well-being of international healthcare students. The findings will inform the development of targeted interventions and support initiatives in higher education institutions globally, with the ultimate goal of enhancing the well-being and academic success of international healthcare students.

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Original Manuscript

Title

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Trial Registration

CRD42024372785; https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=3727850

Keywords

Integrative review protocol, international higher education, international students, educational migrants, universal barriers to access, higher education, experiences, challenges, barriers, facilitators, enablers, well-being, integrative review, mixed-methods synthesis, meta-analysis, future international healthcare professionals

Introduction

International healthcare students face unique compound stressors as they navigate the demands of healthcare education while adjusting to a new cultural environment. Research indicates that healthcare students, for example, medical students, report significantly higher rates of depression, anxiety, and burnout compared to the general population [1]. As international students, these challenges are further compounded by the stress of addressing emerging challenges in the transition phase to culturally new environments [2,3]. Reports show international students have significantly lower satisfaction with their student experiences, poorer global life satisfaction, less social support,

and higher rates of mental health issues, various addictions, and less likely to seek help [4,5], in conjunction with persistent language barriers, cultural disparities, different healthcare systems, lack of a sense of belonging, and potential discrimination [6,7,8,9]. Thus, they are often allocated the identity of minority or vulnerable groups [9,10].

Moreover, poor well-being among international healthcare students can have profound consequences for patient care in professional settings. The adverse effects of these factors on their well-being may increase the likelihood of burnout or mental health issues, which in turn can heighten the risk of medical errors [11]. Possibly due to insufficient resilience, weak coping mechanisms during early career development, or insufficient support, which can persist over time, leading to suboptimal patient care and professional dissatisfaction in later stages of their careers [12]. Prioritising the well-being of international healthcare students is not only crucial for their personal welfare but also for maintaining the quality and safety of healthcare services for patients [13].

Evidence suggests that some interventions have shown promise in reducing symptoms of depression, anxiety, and burnout among students, such as mindfulness-based programmes or peer support programmes [14,15]. These interventions not only enhance their well-being during their academic journey but also equip them with resilience-building tools that benefit their future careers. Understanding current effective interventions is essential to identify gaps for the optimisation of more effective interventions, to be tailored to meet the needs for international healthcare students. To achieve this, it is essential to investigate universal barriers and facilitators to international healthcare students' well-being.

Understanding the well-being of international healthcare students will provide valuable insights into supporting them to develop sustainable resilience in their academic journey, future career, and ever-changing social environments. By investigating their barriers and facilitators to well-being, stakeholders will be able to identify areas for improvement within the educational and healthcare systems and develop culturally sensitive, inclusive interventions to address their unmet needs. Continued research in this field can provide insights for crafting tailored interventions and implementing systemic changes to bolster the well-being of upcoming healthcare professionals. Additionally, it will contribute to mitigating the enduring impacts of the COVID-19 pandemic and cope with future crises and uncertainties [16].

Objective

This systematic integrative review's aim is to provide a comprehensive understanding of the factors influencing international healthcare students' wellbeing in higher education. Specifically, the objective is to:

Identify the barriers and facilitators that contribute to the well-being of international healthcare students in higher education.

Review Question

What are the universal barriers and facilitators to international healthcare students' well-being in

higher education?

Study design

To investigate the factors affecting the well-being of international healthcare students, a systematic integrative review methodology is adopted. Systematic integrative review allows for the incorporation of diverse methodologies, including experimental and non-experimental studies [17]. It offers flexibility and a comprehensive approach to exploring complex phenomena from diverse sources [18, 19]. Systematic integrative review, also known as a mixed studies review, is suitable for identifying barriers and enablers [20] and supporting evidence-based practice [17]. In this study, the systematic integrative review methodology aligns with the objective of this research, and to handle the diverse methodological types of articles effectively during screening, analysis, and synthesis. The overall design consulted the guidelines outlined in "A Step-by-Step Guide to Conducting an Integrative Review" [19].

Protocol and Registration

The protocol is registered with PROSPERO (registration number CRD42024372785). During the preparation phase of the protocol, guidance was sought from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) checklist [21,22] (Multimedia Appendix 1).

Search Strategy

The search strings for this integrative review were developed in consultation with an experienced university librarian to enhance rigour and trustworthiness [17, 23]. The search will employ truncation and wildcard techniques to cover spelling variations and address information needs. A search log will be maintained for documentation purposes.

Step 1: Boolean operators will be used to combine the selected terms and formulate search strings based on the research question using the Population, Exposure and Outcome (PEO) framework as presented in table 1. In this study, both barriers and facilitators are considered as exposure. There are therefore connected

Step 2: A search quality appraisal checklist (see table 2) will be utilised to assess the quality of search strings [19, 22] and validation will be sought from a Librarian.

Step 3: Search strings will be adjusted based on the specific characteristics of each database. This approach ensures that the search strategy aligns with the nuances and indexing systems of individual databases.

Step 4: Iterative running and testing, after finalising the search strings.

Handsearching will be conducted under specific circumstances for grey literature, including identifying high quality reports and other grey literature that are not formally published and may not be indexed in proposed electronic databases, Google Scholar will be utilised for this purpose.

Step 5: Upon completing the full-text review, a comprehensive list of relevant literature to support the implementation of the pearl growing (snowballing or citation searching) method will be compiled. This curated list will form the basis for further exploration and identification of additional pertinent studies, ensuring a thorough and extensive examination of the topic at hand. This step will be facilitated by using the "cited by" option on Google Scholar streamlines the search process.

Table 2 Search Quality Appraisal Checklist from Toronto & Remington (2020, p. 34)

Completion		
1	All databases likely to contain the highest number of citations have been searched.	Yes/ Can't Tell/ No
2	The search strategy has been modified by adding terms based on citations highly relevant to the topic.	Yes/ Can't Tell/No
3	New searches return no new, unique, or relevant results.	Yes/ Can't Tell/ No
4	Author searches on the most prolific authors of the topic show no new citations.	Yes/Can't Tell/ No
Quality		
1	The search concepts are clear, not too narrow or too broad.	Yes/ Can't Tell/ No
2	All spelling variants and synonyms have been searched, including abbreviations.	Yes/ Can't Tell/ No
3	Appropriate subject headings, or controlled language terms, have been identified and searched.	Yes/ Can't Tell/ No
4	Search limiters, filters, and Boolean operators have been used correctly.	Yes/ Can't Tell/ No

Search String

Table 1: Search String

S1		S2		S3	
Population		Barriers		Facilitators	
"International medical student*" OR "Overseas medical student*" OR "Foreign medical student*" OR "International health student*" OR "International health sciences student*" OR "International health profession student*" OR "International nursing student*" OR "International dentistry student*" OR "International pharmacy student*" OR "International public health student*" OR "International healthcare education student*" OR "International healthcare training student*" OR "International healthcare profession student*" OR "International med student*" OR "Foreign health student*" OR "Foreign health sciences student*" OR "Foreign health profession student*" OR "Foreign nursing student*" OR "Foreign dentistry student*" OR "Foreign pharmacy student*" OR "Foreign public health student*" OR "Foreign healthcare education student*" OR "Foreign healthcare training student*" OR "Foreign healthcare profession student*" OR "Overseas health student*" OR "Overseas health sciences student*" OR "Overseas health profession student*" OR "Overseas nursing student*" OR	And	"Challenge*" OR "Obstacle*" OR "Dilemma*" OR "Barrier*" OR "Difficult*" OR "Limit*" OR "Hindrance" OR "Hardship" OR "Struggle*" OR "problem*" OR "issue*" OR "Fear" OR "Experience*" OR "Hurdles" OR "Plight" OR "Demotivat*" OR "Demotivators" OR "Adversity"	OR	"Enable*" OR "Support*" OR "Help*" OR "Facilitat*" OR "Assistant*" OR "Advice" OR "Opportunit*" OR "enablers" OR "support" OR "facilitators" OR "strategies" OR "interventions" OR "Motivators" OR "Motivat*"	And

"Overseas dentistry student*" OR "Overseas pharmacy student*" OR "Overseas public health student*" OR "Overseas healthcare education student*" OR "Overseas healthcare training student*" OR "Overseas healthcare profession student"					
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S1 AND (S2 OR S3) AND S4

Information Sources

Web of Science and Scopus are widely recognised databases spanning diverse scientific disciplines, frequently utilised for literature searches [24, 25]. PubMed primarily focuses on biomedical and life sciences literature, making it an invaluable resource for researchers, clinicians, and anyone interested in health-related topics [26]. Moreover, EBSCOhost functions as an academic search engine, providing an interface to access numerous databases [27]. These four platforms have therefore been chosen as the primary information sources for this systematic integrative review :

- Pubmed: houses a vast collection of over 37 million citations for biomedical literature drawn from sources such as MEDLINE, life science journals, and online books [26];
- Web of Science: extensive international multidisciplinary database which provides citation impact data;
- Scopus: A multidisciplinary extensive database of scientific research includes EMBASE index terms and citation [20];
- EBSCOhost: An information service which provides various services, especially online access to over 150 databases and thousands of journals [27]. The databases searched through EBSCOhost in this review include Academic Search Complete; AgeLine; British Education Index; Business Source Complete; CINAHL Complete; eBook Collection (EBSCOhost); ERIC; European Views of the Americas: 1493 to 1750; GreenFILE; Historical Abstracts; Hospitality & Tourism Complete; Library, Information Science & Technology Abstracts; Psychology and Behavioral Sciences Collection; Regional Business News; SocINDEX with Full Text; Teacher Reference Center; UK & Ireland Reference Centre; MLA Directory of Periodicals; MLA International Bibliography; RILM Abstracts of Music Literature; APA PsycArticles; APA PsycInfo; APA PsycBooks; APA PsycExtra; EconLit.

Eligibility Criteria

To minimise the bias and render this systematic integrative review transparent , predetermined inclusion and exclusion criteria [19] will be applied.

	Inclusion Criteria	Exclusion Criteria
--	--------------------	--------------------

Type of Literature	<ul style="list-style-type: none"> • Qualitative studies such as interviews, focus groups, ethnographic studies, or qualitative surveys. • Quantitative studies employing surveys, questionnaires, or other quantitative methods. • Mixed-methods studies combining qualitative and quantitative approaches. • Reviews (systematic reviews, meta-analyses, scoping reviews, narrative reviews). • To supplement the review, a limited number of relevant and high-quality grey literature sources such as websites of the WHO and UN; scientific or government reports; books and book chapters; thesis and conference papers. 	<ul style="list-style-type: none"> • Case reports • Editorials • Opinion pieces • Abstracts only
Exposure	<ul style="list-style-type: none"> • Universal barriers and facilitators to international healthcare students' in post secondary institutions globally. 	<ul style="list-style-type: none"> • Specific barriers and facilitators to domestic healthcare students.
Population Characteristics	<ul style="list-style-type: none"> • International healthcare students move to another country for study, residence, and/or work in a cross-cultural context. • These students come from diverse nationalities and cultural backgrounds. • They are formally enrolled as full-time students in higher education institutions within the host countries. • They undertake undergraduate and/or postgraduate healthcare programmes, for example, master and PhD students. 	<ul style="list-style-type: none"> • International healthcare students studying part-time or through distance learning programmes. • Students enrolled in pre-healthcare or preparatory programmes. • Non-healthcare students, even if they are international students studying abroad.
Outcome	<ul style="list-style-type: none"> • The context that relates to international healthcare students' well-being. 	<ul style="list-style-type: none"> • Contexts unrelated to international healthcare students' well-being.
Context	In this study, higher education institutions refer to third level education. The context for this review includes higher education institutions worldwide where international healthcare students pursue their studies at a third level education. This includes universities, colleges, medical schools, nursing schools, pharmacy schools, public health schools, and other relevant third level educational institutions offering programmes in healthcare-related fields.	
Publication Language	Only English publications will be included.	Non-English articles
Time Period	There will be no time restriction.	
Geography	There will be no restriction by country.	

Key characteristics defining the inclusion criteria include:

Geographic Diversity: Studies from various countries and regions will be included to capture a global perspective on the experiences of international healthcare students.

Academic Structure: Institutions with different academic structures, such as semester-based or quarter-based systems, will be considered.

Cultural Context: The review will encompass international healthcare students from diverse cultural backgrounds, recognising the factors impact on their experiences in higher education.

Healthcare System/Third Level Education Infrastructure: Studies conducted within different healthcare/education systems, including those with varying levels of resources and infrastructure, will be included to understand how system characteristics impact the well-being of international healthcare students.

Study Selection

All the studies from different databases will be uploaded into Covidence™ which will be used to remove the duplicates and for study selection. The procedures below will be used for selecting relevant papers [20]. Any uncertainty arising or ambiguous conflicts during the process will be resolved by means of communication between reviewers, in the case of mutual consensus cannot be reached, a third reviewer will be consulted.

Procedure 1: Title and abstract screening

Two reviewers (YX and JOD) will screen the article titles resulting from the finalised search strings. Duplicated and irrelevant/unclear titles will be excluded from further consideration. Two Reviewers (YX and JOD) will evaluate the relevance of the titles and abstracts of the remaining articles. Articles that do not meet the inclusion criteria will be excluded.

Procedure 2: Full text screening

Two Reviewers (YX and JOD) will conduct a full-text screening of the selected studies from title and abstract screening based on the eligibility criteria already discussed.

Data Extraction

This review will use a pre-piloted Microsoft Excel data extraction sheet based on the research question. Extracted data items will include:

Study characteristics: author(s), type of study, year of publication, aim/purpose, study design, setting, sample size, and methods.

Participant characteristics: demographics, country of origin, healthcare field of study, Host Country(s), Student profile, Second Language(s), Gender, and target second language(s).

Exposure: Barriers and facilitators

Outcomes of interest: well-being indicators including four key dimensions of well-being experienced by international healthcare students: psychological, social, cognitive, and physical, and other relevant findings.

Definitions of the Key Variables

Well-being:

According to the OECD, student well-being refers to the psychological, cognitive, social, and physical functioning and capabilities necessary for living a happy and fulfilling life [28]. This review adopts the OECD's Programme for International Student Assessment (PISA) Indicators of the Well-being framework, examining four key dimensions of well-being experienced by international healthcare students: psychological, social, cognitive, and physical [28].

Barriers:

Refers to obstacles that hinder international healthcare students to achieve desired outcomes or access resources. These obstacles may be structural, systemic, environmental, or personal in nature and can significantly impact the well-being of individuals.

Facilitators:

Are elements that ease the path for international healthcare students to attain their goals or access resources, which can include supportive structures, enabling environments, skills, or behaviours that lead to positive outcomes. For example, interventions, services, programmes, technologies or strategic implementations.

Quality Assessment

The reviewers will collaboratively assess whether the final curated list of literature meets the predetermined inclusion and exclusion criteria. For this purpose, The Mixed Method Appraisal Tool (MMAT) 2018 will be used to examine the quality of studies [29].

Data Synthesis

The data synthesis for this integrative review will involve a mixed-methods approach, integrating qualitative and quantitative findings to provide a comprehensive understanding of the matter of international healthcare students' well-being.

1. Qualitative data synthesis:

Thematic synthesis: Qualitative data from included studies will be analysed using thematic synthesis, which involves coding and categorising data to identify common themes, patterns, and relationships. This process will involve three main stages: coding of primary data, development of descriptive themes, and generation of analytical themes [30].

2. Quantitative data synthesis:

Meta-Analysis: If there is sufficient quantitative data, meta-analysis will be conducted for specific outcome measures, this could include examining frequency or effect sizes associated with factors such as mental health indicators, academic performance, satisfaction levels, or utilisation of support services. This involves pooling data across studies using appropriate statistical models.

For barriers and facilitators, may involve assessing the frequency of reported barriers and facilitators within the included studies.

3. Integration of qualitative and quantitative findings:

Triangulation: Qualitative and quantitative findings will be compared and contrasted to identify areas of convergence, divergence, or complementarity. Triangulation of findings will enhance the robustness and validity of the synthesised results.

Narrative synthesis: Qualitative and quantitative findings will be synthesised narratively to provide a cohesive and comprehensive overview of the experiences, challenges, and facilitators encountered by international healthcare students in higher education.

The synthesis process will be iterative, involving regular discussion among the review team to refine interpretations and ensure coherence between qualitative and quantitative data. The synthesised findings will be presented thematically, supported by illustrative quotes, tables, and figures to

enhance clarity and transparency.

Results

By utilising the search strategies and databases mentioned previously, an initial total of 7927 articles were identified (Multimedia Appendix 2).

The review will present data in a narrative format, supported by visualisations such as tables and graphs. The narrative synthesis will align with the study's objectives and research questions. The flow of information through the review phases will be depicted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram [31]

Conclusions and Discussion

This systematic review aims to contribute to a deeper understanding of the factors influencing the well-being of international healthcare students. The findings will inform the development of targeted interventions and support initiatives in higher education institutions globally, with the goal of enhancing the well-being and academic success of international healthcare students.

These anticipated key findings will be drawn from the analysis and synthesis of data extracted from primary studies and reviews included in the review, the anticipated key findings are:

Barriers encountered by international healthcare students: This outcome focuses on identifying specific obstacles, difficulties, and limitations experienced by international healthcare students in pursuing their education in healthcare-related fields outside their home countries.

Facilitators and support for international healthcare students: This outcome aims to highlight factors, resources, and support mechanisms that contribute to the well-being of international healthcare students in higher education. For example, How third level institutions strategically deploy student well-being programmes, will provide new insights, especially in those studies, where the outcomes of those programmes have been provided.

The review will contribute to a deeper understanding of the challenges and support needs of international healthcare students. Additionally, it will shed light on the importance of cultivating a culturally competent healthcare workforce, ultimately improving patient outcomes and the quality of healthcare delivery. It will inform the development of culturally sensitive interventions and support systems tailored to their specific needs. This will add knowledge to understanding the well-being of similar vulnerable populations who will have to navigate uncertain and dynamic environments. A new framework will be developed to assist international researchers, third-level institutions, and relevant stakeholders in navigating more effectively in the area of well-being. Such a framework may be integrated into curriculum development or service support to ensure that material is deployed in a manner that supports overall students' well-being.

Limitations

Although a systematic integrative review is a powerful approach, it does have inherent methodological shortcomings that can be challenging to overcome. Combining diverse data sources can lead to complexity and potential bias, affecting the accuracy of the results [18]. Scholars widely acknowledge this issue [19, 20]. To address this limitation, this systematic integrative review will

employ a critical appraisal tool and collaborate with multiple reviewers to ensure a balanced assessment. However, even the critical appraisal tools have their limitations, and there is no universally accepted tool among researchers [20]. Additionally, the search criteria restricts the inclusion of studies to those published in English, potentially leading to the exclusion of relevant studies conducted in other languages.

Some studies may lack a comprehensive profile of the study population, including details such as enrollment status (full-time or part-time), nationality distribution, primary languages spoken, and specific programmes enrolled in by participants.

Conflicts of Interest

No conflicts of interest have been declared by the authors.

Funding

This research has not received specific grants from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical Considerations

Ethical clearance is not deemed necessary for this integrative review, as it solely involves the synthesis of existing literature.

Acknowledgments

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Data Availability

All data generated during this study are included in this paper via Multimedia Appendix 2.

Multimedia Appendix 1

Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) checklist

Multimedia Appendix 2

Initial Search Results

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Abbreviations

PISA: Programme for International Student Assessment

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PRISMA-P: Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols

PROSPERO: International Prospective Register of Systematic Reviews

Supplementary Files

Multimedia Appendixes

Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) checklist.

URL: <http://asset.jmir.pub/assets/c656d571bf692f24bdb5b476314c2664.docx>

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