



Ahmad Keykha^{1,*}, Mojtaba Nadi¹

¹Ph.D Student, Department of Educational Management and Planning, Faculty of Psychology and Educational Sciences, Tehran University, Tehran, Iran

*Tehran University
Jalale Ale-Ahmad High Way,
Nasr Bridge
Tehran, 1445983861
Iran

Tel: +98 9129583889

Email:
ahmadkeykha@ut.ac.ir

Analyzing the Impact of International Students' Feelings of Loneliness on Their Academic Performance in Medical Universities

Background: This study aimed to analyze the impact of international students' feelings of loneliness on academic performance in Medical Universities.

Method: The present qualitative research has been done using the meta-synthesis method. Therefore, the specialized research keywords were searched in scientific databases during the academic years in 2000-2021. Finally, out of 60 reviewed studies, 35 studies reached the final analysis.

Results: The most important psychological and physical components of loneliness affecting the academic performance of international students were the components of psychosis, communication isolation, physical weakness, and socio-cultural maladaptation. The most important negative consequences of feeling lonely on the academic performance of international students were the components of academic failure (academic stress and low academic performance). The most important solutions at the individual level to alleviate the feeling of loneliness of international students in medical universities to improve academic performance were categorized as: improving mental health, development of communication, physical improvement, academic achievement, and socio-cultural compromise. The most important strategies at the university level to alleviate the feeling of loneliness of international students to improve their academic performance were identified as the university policies, capacity building, and empowerment of international students.

Conclusion: Considering the importance of having truck with the feeling of loneliness by international medical students to improve academic performance and create mental and physical health among them, the identified components should be considered by the managers of Iran's higher education system.

Keywords: Loneliness, Social Isolation, International Educational Exchange, Academic Performance, Academic Success

تحلیل تأثیر احساس تنهایی دانشجویان بین المللی بر عملکرد تحصیلی در دانشگاه های علوم پزشکی

زمینه و هدف: این مطالعه با هدف تحلیل تأثیر احساس تنهایی دانشجویان بین المللی بر عملکرد تحصیلی در دانشگاه های پزشکی انجام شده است.

روش: پژوهش کیفی حاضر با استفاده از روش متاسنتز انجام شده است. بنابراین، کلیدواژه های تخصصی پژوهش در پایگاه های معتبر علمی در بازه زمانی ۲۰۰۰-۲۰۲۱ جستجو شدند. در نهایت از میان ۶۰ پژوهش به دست آمده، ۳۵ پژوهش به تحلیل نهایی راه یافت.

یافته ها: مهمترین مؤلفه های روانی و جسمانی تنهایی که بر عملکرد تحصیلی دانشجویان بین المللی در دانشگاه های علوم پزشکی تأثیر می گذارد شامل مؤلفه های روان پریشی، انزوای ارتباطی، ضعف جسمانی، ناسازگاری فرهنگی اجتماعی می شوند. مهمترین پیامدهای منفی احساس تنهایی بر عملکرد تحصیلی دانشجویان بین المللی، دربرگیرنده مؤلفه های افت تحصیلی (استرس تحصیلی، عملکرد تحصیلی پایین) می شود. مهمترین راه حل ها در سطح فردی برای کاهش احساس تنهایی دانشجویان بین المللی جهت بهبود عملکرد تحصیلی شامل بهبود سلامت روان، توسعه ارتباطات، بهبود جسمانی، پیشرفت تحصیلی و سازش فرهنگی - اجتماعی می باشد. مهمترین راهبردها در سطح دانشگاه ها برای کاهش احساس تنهایی دانشجویان بین المللی جهت بهبود عملکرد تحصیلی مشتمل بر سیاست های دانشگاه، ظرفیت سازی و توانمندسازی دانشجویان بین المللی می باشد.

نتیجه گیری: با توجه به اهمیت داشتن پرداختن به احساس تنهایی دانشجویان بین المللی پزشکی برای بهبود عملکرد تحصیلی و ایجاد سلامت روانی و جسمی در بین آنها، مؤلفه های شناسایی شده باید مورد توجه مدیران نظام آموزش عالی ایران قرار گیرد. **واژه های کلیدی:** احساس تنهایی، انزوای اجتماعی، تبادل آموزشی بین المللی، عملکرد تحصیلی، موفقیت تحصیلی

تحلیل تأثیر شعور الطلاب الدوليين بالوحدة على أدائهم الأكاديمي في الجامعات الطبية

الخلفية: هدفت هذه الدراسة إلى تحليل تأثير شعور الطلاب الدوليين بالوحدة على الأداء الأكاديمي في الجامعات الطبية.

الطريقة: تم إجراء البحث النوعي الحالي باستخدام طريقة التركيب التولي. لذلك تم البحث عن كلمات البحث المتخصصة في قواعد البيانات العلمية خلال السنوات الدراسية ۲۰۰۰-۲۰۲۱. أخيراً، من أصل ۶۰ دراسة تمت مراجعتها، وصلت ۳۵ دراسة إلى التحليل النهائي.

النتائج: كانت أهم المكونات النفسية والجسدية للوحدة التي تؤثر على الأداء الأكاديمي للطلاب الدوليين هي مكونات الذهان، وعزلة التواصل، والضعف الجسدي، وسوء التكيف الاجتماعي والثقافي. كانت أهم النتائج السلبية للشعور بالوحدة على الأداء الأكاديمي للطلاب الدوليين هي مكونات الفشل الأكاديمي (الإجهاد الأكاديمي والأداء الأكاديمي المنخفض). تم تصنيف أهم الحلول على المستوى الفردي للتخفيف من الشعور بالوحدة لدى الطلاب الدوليين في جامعات الطب لتحسين الأداء الأكاديمي على النحو التالي: تحسين الصحة العقلية، وتطوير التواصل، والتحصين البدني، والتحصين الأكاديمي، والتسوية الاجتماعية والثقافية. تم تحديد أهم الاستراتيجيات على المستوى الجامعي للتخفيف من الشعور بالوحدة لدى الطلاب الدوليين لتحسين أدائهم الأكاديمي على أنها سياسات الجامعة وبناء القدرات وتمكين الطلاب الدوليين.

الخلاصة: بالنظر إلى أهمية وجود شعور بالوحدة من قبل طلاب الطب الدوليين لتحسين الأداء الأكاديمي وخلق الصحة العقلية والبدنية بينهم، ينبغي النظر في المكونات المحددة من قبل مديري نظام التعليم العالي في إيران.

الكلمات المفتاحية: الوحدة، العزلة الاجتماعية، التبادل التعليمي الدولي، الأداء الأكاديمي، النجاح الأكاديمي

میڈیکل یونیورسٹیوں میں ان کی تعلیمی کارکردگی پر بین الاقوامی طلباء کے تنہائی کے احساسات کے اثرات کا تجزیہ

پس منظر: اس مطالعہ کا مقصد میڈیکل یونیورسٹیوں میں تعلیمی کارکردگی پر بین الاقوامی طلباء کے تنہائی کے احساسات کے اثرات کا تجزیہ کرنا تھا۔

طریقہ: موجودہ معیاری تحقیق مینا سنتھیسز کے طریقہ کار کو استعمال کرتے ہوئے کی گئی ہے۔ لہذا، ۲۰۰۰-۲۰۲۱ کے تعلیمی سالوں کے دوران سائنسی ڈیٹا بیس میں خصوصی تحقیقی مطلوبہ الفاظ کی تلاش کی گئی۔ آخر میں، ۶۰ جائزہ شدہ مطالعات میں سے، ۳۵ مطالعات حتمی تجزیہ تک پہنچ گئیں۔

نتائج: تنہائی کے سب سے اہم نفسیاتی اور جسمانی اجزاء جو بین الاقوامی طلباء کی تعلیمی کارکردگی کو متاثر کرتے ہیں وہ تھیں سائیکوسس، کمیونیکیشن تنہائی، جسمانی کمزوری، اور سماجی و ثقافتی خرابی کے اجزاء۔ بین الاقوامی طلباء کی تعلیمی کارکردگی پر تنہا محسوس کرنے کے سب سے اہم منفی نتائج تعلیمی ناکامی (تعلیمی تناؤ اور کم تعلیمی کارکردگی) کے اجزاء تھے۔ بین الاقوامی طلبہ کی تعلیمی کارکردگی کو بہتر بنانے کے لیے ان کی تنہائی کے احساس کو دور کرنے کے لیے یونیورسٹی کی سطح پر سب سے اہم حکمت عملیوں کی شناخت یونیورسٹی کی پالیسیوں، صلاحیتوں کی تعمیر اور بین الاقوامی طلبہ کو باختیار بنانے کے طور پر کی گئی۔

نتیجہ: بین الاقوامی طبی طلباء کی تعلیمی کارکردگی کو بہتر بنانے اور ان میں ذہنی اور جسمانی صحت پیدا کرنے کے لیے تنہائی کے احساس کے ساتھ ٹرک رکھنے کی اہمیت کو مدنظر رکھتے ہوئے، ایران کے اعلیٰ تعلیمی نظام کے منتظمین کو شناخت شدہ اجزاء پر غور کرنا چاہیے۔

مطلوبہ الفاظ: تنہائی، سماجی تنہائی، بین الاقوامی تعلیمی تبادلہ، تعلیمی کارکردگی، تعلیمی کامیابی

INTRODUCTION

Currently, more than 2.5 million students are studying abroad, all over the universe. The number of international students is projected to reach up to seven million by 2020 (1). Studying in another country for students not only can be a great opportunity for personal growth, but also can cause many different physical, psychological, and social problems for them (2). One of the most important problems is the loneliness of international students which can lead to adverse scientific and non-scientific consequences (3). The concept of loneliness in this research is similar to that stated in Perlman and Peplau's theory of Cognitive differences in 1981. In this theory, unlike many other approaches that consider loneliness as just a lack of important relationships, the theory of Cognitive differences focuses on the role of social expectations and describes loneliness as the result of differences between the desired social relationships and what actually exists for the individual (4). Accordingly, Perlman and Peplau (5), in the conceptualization of loneliness, have considered it as an unpleasant experience that occurs when an individual's network of social relations suffers from deficiency and disorder in various ways, quantitatively or qualitatively. There are three important features in this definition: First, loneliness is a predominantly unpleasant experience that focuses on negative emotions such as sadness, restlessness, or dissatisfaction. Second, the term deficiency is related to the Cognitive differences model and emphasizes that the individual, in the feeling of loneliness, considers his existing relationships less than desirable. Third, this definition reflects the important point that the number of relationships is not uniquely important, but their quality is also of importance. It means that a person can feel mentally lonely if they perceive the lack of quality in their relationships, despite having an extensive network of social relationships (6).

Thus, loneliness is a complex, multiple, and multidimensional phenomenon, which is the product of a combination of environmental and psychological factors. This is due to the increasing of the global flow of international students, making them face a completely new structure and atmosphere, while being far from family and friends, and feeling lonely. In addition, there are negative psychological and social consequences for themselves. In Iran's higher education, the number of international students and the infrastructure of international medical universities are increasing in line with global trends. According to the land-use planning document, Iran should have three international medical universities by 2025 (7). One of the most important achievements of such goals and aspirations is to create favorable conditions for attracting elite international students and maximizing the use of their knowledge capacity. However, one of the most important challenges in attracting international students, which has intensified with the growing trend of student flow, is the feeling of loneliness among them. This issue has not been carefully considered in the world literature, although in recent years this issue has been the focus of researchers. However, in domestic studies, no study has been done on the feeling of loneliness of international medical students on their

academic performance. Accordingly, the innovation of this research is conducting a meta-synthesis study and analyzing the content of international studies to provide a more comprehensive and universal understanding of the loneliness of international medical students and its impact on academic performance also, to provide solutions for this issue.

METHODS

The present qualitative research has been composed using the meta-synthesis method. The meta-synthesis method is a systematic combination and interpretation of the findings of studies in a specific field to create a deeper understanding of the phenomenon. This process includes four steps: (1) Designing questions, (2) applying search strategy, (3) extraction of key concepts, and (4) combination of key concepts (category formation) (8-10). Based on this methodological framework, by exploring the study records of the subject, in the first stage, using various parameters such as the target population, what and how of the questions are made. In this study, Four questions have been explored: What are the most important psychological and physical components of loneliness affecting the academic performance of international students in medical universities?; What are the most important negative consequences of feeling lonely on the academic performance of international students in medical universities?; What are the most important solutions at the individual level to alleviate the feeling of loneliness of international students in medical universities to improve their academic performance?; What are the most important strategies at the university level to alleviate the feeling of loneliness of international students in medical universities to improve their academic performance?.

In the second stage, a systematic review search strategy was utilized. Accordingly, the following specialized keywords were searched: the loneliness and international students (and Academic Performance), the loneliness of international medical Students (and Academic Performance), depression of international students (and Academic Performance), and depression of international medical students (and Academic Performance). The reputable scientific databases, as sources of this search were: Science Direct, Springer, Wiley Online Library, PubMed, ERIC, Sage Journals, and Emerald, and the dating spectrum in 2000-2021 (in all months of the year).

The result of this research was a total of 60 sources of articles and dissertations, and finally, 35 international articles and dissertations were selected according to PRISMA. The Criteria for choosing these articles were the method of research (quantitative, qualitative, and mixed), the indexing databases, the focus of the study (problems or challenges regarding the loneliness of international students), and access to the full text of the articles. Exclusion criteria were the title, abstract and main text of the article related to the field of research.

The third step was extracting key concepts. After reading the text of the articles, the most important key concepts, or in other words, the concepts that had a special meaning were extracted separately from each article. In the fourth stage, the extracted key concepts were classified into secondary subcategories based on their common points and differences. Then the secondary subcategories were categorized based on

their differences and common points in the form of primary subcategories. For the reliability of the findings, the method by Peer debriefing were used. These articles include reference numbers (5, 11-44).

RESULTS

In response to the first question of the research (What are the most important psychological and physical components of loneliness affecting the academic performance of international students in medical universities?), after

extracting the key concepts of each article, the mentioned concepts were classified into primary and secondary subcategories. Table 1 explains this classification in detail. In answer to the second question (What are the most important negative consequences of feeling lonely on the academic performance of international students in medical universities?), like the answer to the previous question, the findings of this section are, also, presented in Table 2, after being categorized in the form of primary and secondary subcategories.

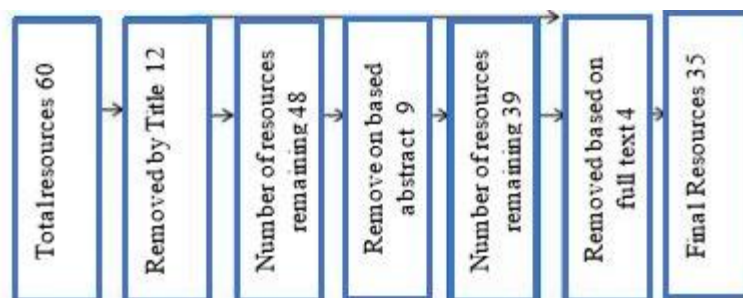


Figure 1. Article selection process

Table 1. Most important psychological and physical components of loneliness affecting the academic performance of international students in medical universities (2000-2021)

Main Component	Primary Subcategory	Key Subcategory	Key Concepts
Feeling lonely among international students and academic performance	Psychosis	Psychological Paradoxes	Feeling of loss / Fear of talking to strangers / Cognitive confusion / Feeling of helplessness / Feeling of inferiority / Feelings of frustration / Feeling of meaninglessness and absurdity / Feeling of failure / Feeling of restlessness / Job concerns / Nostalgia / Aggressive behavior / Feeling of self-blame / Feeling of shame / Feeling of pessimism / Feeling of distrust/ Pessimistic thoughts / Feeling of confusion/ Feeling hesitant to return to your home country or continue your studies in the host country/ Feeling judged by others / Feeling tired/ Becoming insignificant about the things around / Emotional problems / Having a temporary emotional feeling in the host country / Feeling of hopelessness / Feeling sad / Feeling inferior / Feeling angry / Feeling losing / feeling guilty / Decline of self-esteem/ Negative feelings for the host country/ Feeling of separation / Feeling of dissatisfaction / Pressure from financial problems and shortages / Having contradicting feelings / Feeling of fear / Feeling of being rejected/ Embarrassment/ Fear of not meeting expectations / Anxiety about weakness in English (or the language of the destination country)/ Increased psychological pressure to return to home country
		Mental Illnesses	Neurosis / Personality Disorders / Psychological Distress / Depression / Social Alienation / Increased Suicidal Thoughts
		Communication Isolation	Inability to Establish Scientific Communication
	Inability to Establish Unscientific Communication		Lack of communication with roommates / inability to communicate new / reluctance to communicate / time difference and difficulty in communicating with family / inability to communicate with people in the community / lack of intimate relationships with others / homelessness and disconnection
	Physical Weakness	Harmful High-risk Behaviors	Drug use / Alcohol consumption / High-risk sexual behaviors
		Physical Diseases	Inactivity and physical illness / Increase in-home illnesses / Disorders and changes in the pattern of sleep / Difference in nutrition and digestive problems / Decrease of appetite and weight/ Negative effects of climate and allergy / Low physical energy

Table 1. Continued.

Main Component	Primary Subcategory	Key Subcategory	Key Concepts
	Socio-cultural Maladaptation	Social Maladaptation	Inability to adapt to the environment / Social stigma to the nationality of international students / Sense of non-belonging to society / Existence of discrimination in the host country / Value conflict / Social deviation / Incompatibility with the norms of the host country / Losing personal identity / Lack of social support / Lack of interest in the music and television programs of the host country / Unfamiliarity with the customs of the host country/ Lack of familiarity with the social lifestyle in the host country
		Cultural Maladaptation	Cultural shock / Abandonment of religious beliefs / Cultural loneliness / Cultural prejudices / Cultural conflict / Unfamiliarity with the culture of the host country / Cultural stress / Cultural separation/ Religious incompatibility

Table 2. The most important negative consequences of feeling lonely on the academic performance of international students in medical universities

Main Component	Primary Subcategory	Key Subcategory	Key Concepts
Feeling lonely among international students and academic performance	Academic Failure	Academic Stress	High scientific expectations of those around / Unfamiliarity with the university educational environment / Academic stress / Exam anxiety / Stress due to high academic competition
		Low Academic Performance	Low satisfaction with academic life/ Increase of the pressure of work and study / Conflict between work, life, and study / Decreased academic motivation / Decreased academic performance / Feeling of not belonging to university / Aversion to the university of the host country / Low scientific productivity / Being the first generation of students (first experience of being a student) / Loss of interest in doing scientific activities

In response to the third question (What are the most important solutions at the individual level to alleviate the feeling of loneliness of international students in medical universities to improve their academic performance?) like the answer to the previous question, the findings of this section are, also, presented in Table 3, after being categorized in the form of primary and secondary sub-categories

In response to the fourth question (What are the most important strategies at the university level to alleviate the feeling of loneliness of international students in medical universities to improve their academic performance?) the key concepts of each article were enumerated and then categorized based on differences and similarities. Table 4 presents the findings of this section in detail.

DISCUSSION

The aim of this study was to analysis international students' feelings of loneliness on their academic performance in medical universities. The first section dealt with the most important psychological and physical components of loneliness that affected the academic performance of international students in medical universities. Based on the findings, the first component was psychosis. The findings of this component are consistent with the sample studies (12-14; 37). The second component was having isolated communications. Being separated from family and friends, international students of medical studies find themselves in a thoroughly unfamiliar environment, and due to differences

in languages, it is difficult for them to communicate with others. The findings of this component are in line with the results of some surveyed studies (5; 20; 44). The third component was physical weakness. Facing new and unfamiliar conditions has a notable effect on the physical health of international students. Factors such as new climate, new nutrition, risky behaviors, etc. can be a threat to the physical health of international students of medical studies. The findings of this component are in line with the results of some sample research (14; 25; 31). The fourth component was socio-cultural maladaptation. Cultural and social alienation is another important component of international students' feeling of loneliness. Some of the international students become lonely and isolated when confronted with a new culture and social condition. The results of this component are in harmony with the findings of some of the sample studies (16; 21; 36). The second section dealt with the most important negative impacts of the feeling of loneliness on the academic performance of international students in medical universities. The findings of this component are consistent with the results of some of the sample research (17; 34).

The third section of this paper took care of the most important solutions, at the individual level, to alleviate the feeling of loneliness of international students in medical universities in order to improve their academic performance. The first component was the improvement of mental health. Improving the mental health requires two levels of mental and practical

Table 3. The most important solutions at the individual level to alleviate the feeling of loneliness of international students in medical universities to improve academic performance (2000-2021)

Main Component	Primary Sub-category	Secondary Sub-category	Key Concepts
Feeling of Lonely by International Students	Improving Mental Health	Mental Actions	Strengthening positive self-image / Increasing the spirit of resilience / Positive thinking / Self-understanding / Emotional compatibility / Self-criticism / Focusing on discharging negative emotions / Accepting change / Fostering hope for the future / Preserving calmness and composure / Increasing self-confidence / Increasing self-respect / Fostering a sense of self-success / Strengthening Empathy / Extroversion / Engaging the thought in various activities
		Practical Actions	Coping with circumstances / Realistic expectations of self/ Sharing feelings with family and friends / Sharing personal problems with other international students / Separation from the previous life / Self-encouragement to do actions / Brave encounter with problems / Managing emotions / Controlling stress / Developing a spirit of personal independence in doing actions / Having a sense of humor / Getting used to the new lifestyle
	Communication Development	Development of Scientific Communication	Increasing interaction with other international students / Increasing interaction with native students / Active presence in associations and groups of peers / Developing relationships with faculty members
		Development of Non-scientific Communication	Developing electronic communication with home country / Developing public relations skills / Changing patterns of social communication / Developing personal communication / Developing communications in social media / Developing social skills / Having a positive mindset of communicating with others / Finding new friends / Developing relationships with neighbors
	Physical Improvement	Physical Health	Healthy eating / Raising awareness about sexual health / Doing relaxing activities such as yoga/ Performing physical activity and exercise for physical health / Joining sports clubs
		Physical Relaxation	Watching movies/ reading books/ Going for walks/ Balancing work, life, and education/ Doing voluntary activities/ Listening to music/ More sightseeing and shopping
	Academic Achievement	Managing Academic Tensions	More Familiarity with the society of the host country / Adaptation to the new educational system / Preparing a list of academic goals / Recognizing strong and weak points, with a focus on string points / Sharing academic problems with faculty members of the host university / Sending more time with students on campus
		Improvement of Academic Performance	Personal improvement/ Improving and developing English language skills / Continuous engagement in scientific activities / Improving academic self-efficacy / Improving the quality of academic life / Increasing educational motivation / More classroom participation / Self-learning / Joining groups and work teams / Learning new things
	Socio-cultural compromise	Social compromise	Creating a sense of collective social identity / Admission of international students in social environments / Recognizing the customs of the host country / Changing society's view and attitude towards international students / Familiarity with the administrative system and laws of the host country / Reconstruction of identity/ Managing social conflicts
		Cultural compromise	Creating a multicultural learning environment / Accepting new cultural values / Creating a spirit of transition to a new culture / Strengthening religious beliefs / Increasing religious activities / Conducting intercultural activities

Table 4. What are the most important strategies at the university level to alleviate the feeling of loneliness of international students in medical universities to improve academic performance?) (2000-2021)

Main Component	Primary Sub-category	Secondary Sub-category	Key Concepts
Feeling of Lonely by International Students	University Policies	University Management	Facilitating the administrative processes of students / Regular visits to the accommodation of students / Developing the relationship between university administrators and students / Developing the relationship between university staff and students / Encouraging academic activities of students/ Development of counseling services / Development of career services/ Development of financial aid and loans to students
		Management Institutionalization	Establishing voluntary teams to help students / Creating student clubs / Creating international student associations

Table 4. Continued.

Main Component	Primary Sub-category	Secondary Sub-category	Key Concepts
Feeling of Lonely by International Students	University Policies	Development of Educational Atmosphere	Creating a platform for the expression of students' opinions / Freedom of expression in classroom / Applying different teaching methods for students / Collaborative learning for students
	Capacity Building	Physical Facilities	Development of university infrastructure / Development of psychological counseling centers / Organization and increase of facilities for students / Establishing of offices for students / Development of recreational and sports facilities of the university
		Digital Facilities	Developing digital technologies for students' accommodation /Creating recreational software for students
	Empowering International Students	Development of scientific ability	Empowering students / English language teaching programs / Teaching the techniques of coping with stress / Development of international students' research skills/ Providing social skills workshops / Providing mental health training / Development of internships for students
		Development of mental capacity	Improving the level of welfare/ Continuous monitoring of the mental health status of students / Holding regular counseling sessions / Developing academic counseling services / Continuous support for students / Motivating international students / Creating special insurance coverage for students / Providing social support / Recognizing and resolving students' social incompatibilities / Creating strong links between native and international students

actions. The findings of this component are in line with the results of some of the sample studies (23; 29; 40). The second component was the development of communication. According to this paper, the scope of interactions at both scientific and non-scientific levels should be expanded. The findings of this component are in consistency with the results of some of the research samples (11; 27; 35). The next component was physical recovery. It includes improving bodily health through nutrition modification, joining various sport clubs, and doing regular physical exercises along with mind control exercises, such as yoga, doing various activities, and so on. The findings of this component are in line with the results of some studies (39; 41; 43). The fourth component was academic achievement. The findings of this component are in line with the results of some of the sample studies (30; 2; 38). The last component was socio-cultural compromise. The findings of this component are in harmony with the results of the some of the sample studies (24; 33; 42).

The Fourth section had the most important academic solutions to relieve the loneliness of international students of medical studies. The first component was academic policies. This component is divided into three categories. The first category is related to university management activities. The second category is management institutionalization. The third category is the development of the educational environment. The findings of this component are in agreement with the results of sample studies (17; 19; 22). The second component was building capacity in both hard and digital facilities. Welfare amenities, sports facilities, libraries, laboratories, classroom smart technologies, and accommodation for international students should be better developed. The third component was the empowerment of international students. The findings of this component are in compliance with the results of some of the research sample (26; 28).

Due to the increase of the number of international students, the

problems of international students are also going to rise. These problems can drastically reduce the academic performance of international students and have many negative psychological and physical consequences for them, which has attracted the attention of many researchers. In this research, the researchers have endeavored to illustrate a more general and comprehensive picture of the issue by synthesizing the previous studies. Based on this research, identifying the components of loneliness that affect the academic performance of international medical students, individual and academic solutions were provided for them. However, this study was limited to the resources published in English and Persian languages. Another limitation is the lack of resources called *Gray Literature*, due to their unavailability. Nonetheless, international dissertations related to the subject that were available, are included in the process of analysis to fill the gap of *Gray Literature* as much as possible. Another limitation was the full text of some studies being unavailable. Therefore, the present researchers may encourage subsequent researchers to explore international students' feelings of loneliness through a local investigation, using mixed research methods in a specific geography (one of the Iranian universities of medical sciences, for instance). The present researchers also suggest that, through quantifying the obtained components and designing a questionnaire, a comparative inquiry should be conducted in the field of several universities of medical sciences in Iran.

Ethical considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

Financial support: None

Conflict of Interest: It is declared none.

REFERENCES

1. Altbach PG, Reisberg L, Rumbley LE. Trends in global higher education: Tracking an academic revolution. Brill; 2019.
2. Tochkov K, Levine L, Sanaka A. Variation in the prediction of cross-cultural adjustment by Asian-Indian students in the United States. *Coll. Stud. J.* 2010; 44(3):677-90.
3. Richardson M, Abraham C, Bond R. Psychological correlates of university students' academic performance: a systematic review and meta-analysis. *Psychol Bull.* 2012; 138(2):353.
4. De Jong Gierveld J, Tesch-Römer C. Loneliness in old age in Eastern and Western European societies: theoretical perspectives. *Eur J Ageing.* 2012;9(4):285-95.
5. Wawera A.S, McCamley A. Loneliness among international students in the UK. *J. Furth. High. Educ.* 2020; 44(9): 1262-74.
6. Gierveld JD, Tilburg TV. A 6-item scale for overall, emotional, and social loneliness: Confirmatory tests on survey data. *Res Aging.* 2006;28(5):582-98.
7. Rezaei H, Yousefi A, Larijani B, Rezaei N, Adibi P. Road map of Iran's internationalization of medical sciences education: Experience of Isfahan University of Medical Sciences. *Iranian Journal of Medical Education.* 2017; 17:125-33. Persian.
8. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Meth.* 2008;8(1):1-0.
9. Hazell L, Lawrence H, Friedrich-Nel H. Simulation based learning to facilitate clinical readiness in diagnostic radiography. A meta-synthesis. *Radiography.* 2020;26(4):e238-45.
10. Lachal J, Revah-Levy A, Orri M, Moro MR. Meta synthesis: an original method to synthesize qualitative literature in psychiatry. *Front Psychiatr.* 2017;8:269.
11. Smith TB, Shwalb DA. Preliminary examination of international students' adjustment and loneliness related to electronic communications. *Psychol Rep.* 2007;100(1):167-70.
12. Rice KG, Choi CC, Zhang Y, Morero YI, Anderson D. Self-critical perfectionism, acculturative stress, and depression among international students. *Counsel Psychol.* 2012;40(4):575-600.
13. Tiwari R, Singh BG, Hasan B. Acculturative stress and coping strategies of foreign students: A systematic review. *Indian Journal of Health and Wellbeing (IJHW).* 2017;8(7):683-7.
14. Sapranaviciute L, Padaiga Z, Pauzienie N. The stress coping strategies and depressive symptoms in international students. *Procedia Soc Behav Sci.* 2013;84:827-31.
15. Saravanan C, Alias A, Mohamad M. The effects of brief individual cognitive behavioural therapy for depression and homesickness among international students in Malaysia. *J Affect Disord.* 2017; 220:108-16.
16. Sawir E, Marginson S, Deumert A, Nyland C, Ramia G. Loneliness and international students: An Australian study. *J Stud Int Educ.* 2008;12(2):148-80.
17. Misirlis N, Zwaan M, Sotiriou A, Weber D. International Students' Loneliness, Depression and Stress Levels in Covid-19 Crisis: The Role of Social Media and the Host University. *Journal of Contemporary Education Theory & Research (JCETR).* 2020;4(2):20-5.
18. Faleel SF, Tam CL, Lee TH, Har WM, Foo YC. Stress, perceived social support, coping capability and depression: A study of local and foreign students in the Malaysian context. *International Journal of Psychological and Behavioral Sciences.* 2012;6(1):1-7.
19. Sümer S, Poyrazli S, Grahame K. Predictors of depression and anxiety among international students. *J Counsel Dev.* 2008;86(4):429-37.
20. Nguyen MH, Le TT, Meirmanov S. Depression, acculturative stress, and social connectedness among international university students in Japan: a statistical investigation. *Sustainability.* 2019;11(3):878.
21. Akhtar M, Herwig BK, Faize FA. Depression and anxiety among international medical students in Germany: the predictive role of coping styles. *JPMA.* 2019;69(230).
22. Hongmei CU. Study on the Psychological Depression of International Students in China: Taking X University in Ningxia as an Example. *Can Soc Sci.* 2019;15(8):45-50.
23. Cahyadi MD. Loneliness and Psychological Well Being on International Students of the Darmasiswa Program at Universitas Negeri Yogyakarta. *Psychological Research and Intervention.* 2019;2(2):43-54.
24. Lin Y, Kingminghae W. Social support and loneliness of Chinese international students in Thailand. *Journal of Population and Social Studies (JPSS).* 2014;22(2):141-57.
25. Desa A, Yusooif F, Ba'yah Abd Kadir N. Acculturative stress among international postgraduate students at UKM. *Procedia Soc Behav Sci.* 2012;59:364-9.
26. Zhang Y. An examination of acculturative stress, perceived social support and depression among Chinese international students [PhD thesis]. 2012.
27. Vogel Da. International students' strategies for preventing loneliness and homesickness (doctoral dissertation).
28. Bordini RA, Münscher JC, Baumgartner KA, Hagos S, Hornig J, Gampe S, et al. Strangers in a Strange Land: Designing a Mobile Application to Combat Loneliness and Isolation among Foreign University Students. *J. technol. behav. sci.* 2021;6(1):81-7.
29. Chai PP, Krägeloh CU, Shepherd D, Billington R. Stress and quality of life in international and domestic university students: Cultural differences in the use of religious coping. *Ment Health Relig Cult.* 2012;15(3):265-77.
30. Jin L. Don't worry, I am fine: a qualitative analysis of family communication and depression in Chinese international students in the US. (Doctoral dissertation).
31. İlhan T. Loneliness among University Students: Predictive Power of Sex Roles and Attachment Styles on Loneliness. *Educational sciences: theory and practice.* 2012;12(4):2387-96.
32. Bek H. Understanding the Effect of Loneliness on Academic Participation and Success among International University Students. *J Educ Pract.* 2017;8(14):46-50.
33. Fritz MV, Chin D, DeMarinis V. Stressors, anxiety, acculturation and adjustment among international and North American students. *Int J Intercult Relat.* 2008;32(3):244-59.
34. Martin K. International vs. non-international students, regarding attachment, social support, and loneliness [PhD thesis]. 2018.
35. Fang HN. The Impact of Social Support on the Relation between Stress from Daily Life Issues and Depression among East Asian International Students in the United States. [PhD thesis]. The Pennsylvania State University; 2013.
36. Hunley HA. Students' functioning while studying abroad: The impact of psychological distress and loneliness. *Int J Intercult Relat.* 2010;34(4):386-92.
37. Cetinkaya-Yildiz E, Cakir SG, Kondakci Y. Psychological distress among international students in Turkey. *Int J Intercult Relat.* 2011;35(5):534-9.
38. Gebregergis WT. Major Causes of Acculturative Stress and Their Relations with Sociodemographic Factors and Depression among International Students. *Open J Soc Sci.* 2018;6(10):68-87.
39. Omodona K. Depression among international students [PhD thesis]. Central Ostrobothnia: University of Applied Sciences; 2012.
40. Lee JS, Koeske GF, Sales E. Social support buffering of acculturative stress: A study of mental health symptoms among Korean international students. *Int J Intercult*

- Relat. 2004;28(5):399-414.
41. Pijpers J. Loneliness among students in higher education: influencing factors. A quantitative cross-sectional survey research. Student Health Service, UvA. 2017.
42. Poyrazli S, Kavanaugh PR, Baker A, Al-Timimi N. Social support and demographic correlates of acculturative stress in international students. *J Coll Counsel.* 2004;7(1):73-82.
43. Saravanan C, Mohamad M, Alias A. Coping strategies used by international students who recovered from homesickness and depression in Malaysia. *Int J Intercult Relat.* 2019;68:77-87.
44. Ennis L. Lived Loneliness Among International Students: An Existential-Phenomenological Analysis [PhD thesis]. The Chicago School of Professional Psychology.