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Psychological Intervention Studies on The Adaptation of International Students: A Systematic Review

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ABSTRACT

Although there are empirical studies on the adaptation of fresh students in the country towards new life and conditions when they start university degrees and psychological processes following immigration, little is known about the adaptation problems of international students going abroad for university education. Similarly, scientific studies on psychological interventions on the adaptation of this group to new conditions and their effects on students' wellbeing are also a matter of curiosity. Accordingly, the current study aimed to review the literature systematically to examine the current status of psychological intervention programs for the psychological adjustment of these international students. 9 articles were involved. The involvement criteria of the study were containing an intervention, addressing adaptation, and the presence of international students in the sample. When the studies that meet certain criteria of this study are evaluated, firstly, it is seen that a) these studies include international students generally in the first year of education, b) they are studied using a control group to see the intervention effect, c) most of the participants are women, and d) the interventions focus on providing information (e.g., foreign culture, traditions, intercultural experience, social resources, university resources and procedures), encouraging to establish relationships, providing training on various subjects (e.g., assertiveness), and developing some skills (e.g., coping, resilience, and communication) for an average of 5 sessions. Moreover, factors such as social adjustment, psychological adjustment, student experiences, interactivity, and academic achievement have been studied in common. As a result, it was considered that many of the psychological interventions implemented were effective and functional and that their dissemination and development could be beneficial.

Keywords:

International students, adaptation, psychological intervention studies, systematic review

1. Introduction

The transition to university life brings many new situations. New people, new habits, a different environment, and sometimes a different country are involved. In today's world, where education is globalized, it is seen that the population of higher education students who want to continue their education abroad is increasing. The number of students involved in student mobility was 3,900,000 in 2011 and reached 5,000,000 in 2016 (UNESCO, 2018). Despite the Covid-19 pandemic restrictions, between 2020 and 2021 the number of mobile students increased from 6.38 million to 6.39 million (International Students, n.d.).

Although studying abroad after living in the culture where one was born and raised with one's mother tongue for a certain period offers many different advantages, such as getting to know a new culture and gaining valuable experience and knowledge, it can also bring many challenges. Some of these challenges include encountering exclusion and discrimination, different social-cultural norms, different eating and drinking

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habits, and climate differences (Smith & Khawaja, 2011). The fact that this period coincides with the last stage of adolescence is another challenge. Examples of difficulties related to adolescence include discovering one's own identity, adapting to community values, reaching social maturity, and adopting national and universal values (Özkan & Yılmaz, 2010). These difficulties coincide with the time of university education. Difficulties experienced in the adaptation period can negatively impact students' psychological well-being, physical health, relationships, and academic achievement (Forbes-Mewett & Sawyer, 2016; Wan et al., 1992). They may also face academic stressors such as language differences and differences in education systems, sociocultural stressors such as homesickness, loneliness, and developing a new social network with locals, and stressors related to daily practices such as finance, transportation, and accommodation (McLachlan & Justice, 2009; Poyrazlı & Grahame, 2007; Townsend & Poh, 2008; Zhang & Goodson, 2011). As a result of these difficulties, higher dropout rates than host students are reported for international students (as cited in Westwood & Barker, 1990). Considering the investment in education abroad, high dropout rates may have negative financial, social, and psychological outcomes for students, their families, and the country of origin (Zwingman et al., 1983). In order to conceptualize these difficulties and this process in the context of psychological problems, the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders (DSM-5) includes the concept of "*acculturation difficulty*" under the heading of other problems with the social environment. While this concept is used to express the difficulty in adaptation to a new culture, this difficulty may have an impact on the person's prognosis or treatment (APA, 2013). Moreover, during the formulation, experts are also invited to reflect on acculturation; they are asked to note to what extent and how people adopt the host culture and their own culture of origin (APA, 2013). On the other hand, under the heading of culture-related diagnostic issues of general personality disorder, there is a warning not to confuse personality disorders with problems related to acculturation (APA, 2013). As a practical example, the symptoms of a young person who has adopted an assimilation strategy may be misdiagnosed as oppositional defiant disorder (APA, 2013; Paniagua, 2018). Similarly, the definition of this concept in the International Statistical Classification of Diseases and Related Health Problems (ICD-10) of the World Health Organization is: "*Acculturation difficulty: Migration, social transplantation (adjustment to a new culture), social exclusion and rejection, target or perceived discrimination, and persecution.*" (WHO, 2010)."

The concept of adaptation, which can often come up on the agenda when studying in foreign lands, is generally seen as efforts to reorganize the lives of immigrants in accordance with the expectations of the country (Berry, 2006); it can be defined in two types as sociocultural and psychological adaptation. Sociocultural adaptation points to learning skills to cope with problems in daily life by acquiring social skills, learning the culture, and adopting some aspects of it (Ataca and Berry, 2002; Berry et al., 2011), while psychological adaptation is seen as a set of psychological outcomes resulting from the changes experienced, such as perception of identity, self-esteem, psychological well-being, and contentment with the situation (Berry et al., 2011). There is some empirical correlation between the two. The difference is that psychological adaptation is variable, with psychological problems increasing after contact and decreasing over time, while sociocultural adaptation improves linearly over time. The variables that predict sociocultural adaptation are the degree of contact, cultural knowledge, and intergroup attitudes, while the variables that predict psychological adaptation are personality characteristics, life events, and social support (Berry et al., 2011). The variables predicting both of them are minimization of cultural distance and adoption of an integration strategy (Berry et al., 2011; Ward, 1996). Some statistical data show that 45% of foreign students from China in the United States reported symptoms of depression and 29% reported symptoms of anxiety (Han et al., 2013). In one study conducted in Australia in which approximately 1000 international students participated, 6.7% of the participants stated that they had self-harming behaviors such as taking drugs, and 40% stated that they experienced significant distress (Russell et al., 2010). In regard to the relationship between socio-cultural adaptation and psychological adaptation, in one study it was found that identification with the local culture, which is a determinant of socio-cultural adaptation, is associated with a decrease in depression, which is an indicator of psychological adaptation (Sumer, 2009). Another study found that having ties with the local society is a facilitating factor for psychological adaptation (Kashima and Loh, 2006). Therefore, it can be said that there is a positive correlation between the two types of adaptation. On the other hand, there is not only correlation but also a mediation effect between the 2 types of adaptation. For instance, in a study, the effects of integration, marginalization, and social support on psychological adaptation mediated by sociocultural adaptation (Ng et al., 2013).

Therefore, serious psychological and physiological consequences related to adaptation may arise in the process of studying abroad; sociocultural and psychological adaptation becomes very important in that regard.

Besides the studies in the literature on the adjustment of foreign students, some universities have independent orientation programs that take place on the first day or week of university to help students cope with adaptation difficulties. The content of these programs in Türkiye or abroad includes information about the university, courses, access to the university's social facilities, and club introductions (e.g., the University of Auckland orientation program in New Zealand or the Dokuz Eylül University orientation program in Türkiye) (Oryantasyon Dokuz Eylül University, 2024; University of Auckland, 2024). On the other hand, some universities may have student counseling centers for students who need help (e.g., Dokuz Eylül University Medico Social Services Unit). These centers offer services such as training, seminars, group work, or individual counseling. Some universities encourage peer counseling by pairing local students with international students. It is also thought that people will adapt through active participation in sports and socialization through sports clubs; for this reason, sports projects are carried out for migrants (Braun & Nobis, 2017). In addition to these, in Türkiye, adaptation days are organized using the "Adaptation to Secondary Education Program Adaptation Guide" prepared by the United Nations Children's Fund (UNICEF) and adapted by the Ministry of National Education. The guide includes introductory activities, school introduction and welcome activities, activities to provide social skills that facilitate adaptation, activities to support academic and professional development, activities to create a protective and supportive education program, icebreakers/warm-up activities, and parent activities (UNICEF, 2016). However, these programs are not available in all universities and have been criticized for not including all the elements students need to adapt (Gu, 2011; Sakurai et al., 2010). These programs often prepare students for academic challenges and coursework and often do not address psychological needs such as competence, autonomy, relatedness, and bonding with local students and are short-term (Law & Liu, 2021; Sakurai et al., 2010; Smith & Khawaja, 2014).

Another point is that students have more difficulties in adapting and need intervention to adapt. In the literature, it is seen that some demographic variables provide information about students who experience more difficulties. For instance, trait anxiety, extraversion (Ying & Han, 2006), and attachment style (Wang & Mallinckrodt, 2006) may impact psychological and sociocultural adaptation (Brisset et al., 2010). Another clue is which culture the student comes from. Some cultures emphasize assertiveness or individualism; students from local cultures who have different characteristics from characteristics of the host culture have difficulty making friends and may feel lonely (Mori, 2000; Smith & Khawaja, 2011). For example, Asian students may experience more difficulties in adaptation than non-Asian students (Abe et al., 1998). In summary, it was considered that when developing an adaptation intervention for international students, the features of students should be considered, and which intervention is more functional for whom.

The variables used as indicators of the concept of adaptation vary across studies. While some studies directly measure "adaptation," others consider the use of campus services or academic performance as indicators of adaptation (Law & Liu, 2021; Sakurai et al., 2010; Tavakoli et al., 2009; Quintrell & Westwood, 1994; Westwood & Barker, 1990). In this context, it is not clear what adaptation will be measured by, what exactly is included in this concept, and what the variables related to adaptation are. This situation may result in the inability to study the same elements with repetitive studies, to ensure conceptual commonality, and to conduct meta-analyses. In addition, it is not clear which elements an intervention should include. The importance of identifying the needs and problems related to adaptation through repeated studies is that it enables the creation of intervention programs that will create change in parallel with the needs. In this study, it is thought that by specifying which outcome variables were used in intervention studies, how often they were used, with which measurement tools they were measured, which ones were used together, and whether the results were positive or not, it can guide future studies in order to fulfill the gaps in the literature. This way, more comprehensive and effective methods can be used. On the other hand, discussing for which individuals these interventions were effective and summarizing the existing data will also serve this purpose. This information can pave the way for the use of appropriate methods for specific individuals.

Despite all this conceptual confusion, adaptation difficulties, and the enlarging number of foreign students, the number of psychological interventions related to adaptation is quite limited (Smith & Khawaja, 2014; Xie

& Wong, 2020). In the context of the literature, it is thought that intervention in this regard will be beneficial in preventing the negative consequences in various psychological, physiological, academic, social, and criminal areas caused by failure to adapt, bringing in more functional individuals who can contribute to science, economy, and society, and reducing school dropout rates (Haverila et al., 2020). For instance, it is hoped that the psychological and somatic symptoms seen in this process will decrease, academic achievement will increase, social relations will be improved by increasing positive contact with local people, loyalty to the country and the university will increase, and crime rates caused by inability to adapt will decrease (e.g., Bağcı & Canpolat, 2019; Hovey & Magana, 2002). It is also thought that results such as acquiring communication skills and social resources, conceptual knowledge acquisition of intercultural experience (Abe et al., 1998), gaining knowledge about university procedure and resources, increasing social and psychological adaptation (Smith & Khawaja, 2014), increasing academic achievement (Westwood & Barker, 1990), meeting basic psychological needs (Law & Liu, 2021), improving psychological health (Kanekar et al., 2009), increasing social support and resilience, increasing self-efficacy and coping skills (Shergill, 1997), and developing social bonds can be achieved through interventions (Sakurai et al., 2010). It has been reported that adaptation can positively affect one's career goals by increasing one's commitment to the university, gaining new skills, and developing one's abilities (Bülbül & Acar-Güvendir, 2014; Karahan et al., 2005). On the other side, it is known that international students generally do not want to receive counseling (Tavakoli et al., 2009). In this situation, alternative interventions such as adaptation programs, which are cost-effective, easily accessible, and preventive, gain importance. Moreover, since these programs are also prevention studies, they aim to intervene before potential problems become complicated and more difficult to solve. In this respect, studies in the literature on psychological interventions for the adaptation of foreign students were gathered and analyzed.

For this context, the central research question in the current study is, "What are the intervention studies on the adaptation of international students?" Along with this question, the points that need to be developed are also examined. For this reason, this review aims to inform people about the difficulties experienced by foreign students and the need for interventions for adaptation and existing interventions and to raise awareness by focusing on this issue. Considering the limited number of studies that include intervention in the literature, it is aimed at providing a basic resource for future studies and practices in this field. In the relevant literature, there is no review study on this subject in Turkish, while in English, it is possible to encounter mostly non-intervention studies (e.g., Bal & Perzigian, 2013; Brunsting et al., 2018; McKenna et al., 2017). The importance of examining interventions for the adaptation of international students is that it provides an opportunity to further develop existing interventions, identify gaps, plan interventions that cover these gaps, and work to reduce adaptation difficulties and the negative consequences of these difficulties. In this way, for example, it is thought that dropout rates can be reduced, academic success can be improved, and economic, human, and social loss can be prevented.

2. Methodology

In this study we systematically reviewed psychological intervention studies for international students.

2.1. Article Selection Procedure

PubMed, Scopus, Scholar Google, Sage Journals, and ScienceDirect databases were scanned. The key terms searched in English and Turkish during the literature review are psychological intervention studies, international students, and psychological intervention studies for international students. Since the amount of studies on this subject in the literature is generally quite limited, the bibliographies of the most cited studies were also utilized during the search. For the same reason, the publication dates of the studies were not limited. The inclusion criteria used for studies were that they should be conducted in Turkish or English, be performed with international students, contain an intervention, and focus on adaptation-based intervention. The exclusion criteria were being written in a language other than English or Turkish, not containing any intervention, not addressing adaptation, not having international students in the sample, and not being able to access the full text.

As a basis of the literature review, a total of 118 studies were reached, including 94 from 5 databases (PubMed: 14 results, Scopus: 11 results, Sage Journals: 16 results, Science Direct: 13 results, and Scholar Google: 40

results) and 24 from bibliographies, and the studies were eliminated according to certain criteria. The exclusion criteria included being a review article (n=1), having a sample of people other than international students (n=3), being a book chapter (n=1), not being able to access the full text (n=2), not containing an intervention (n=33), and not addressing the issue of adaptation (n=14). Accordingly, 9 articles were involved in the review as a result of the scanning process. Figure 1 shows the flow chart prepared according to PRISMA criteria (Preferred Reporting Items for Systematic Reviews and Meta-Analyses; Moher et al. 2015).

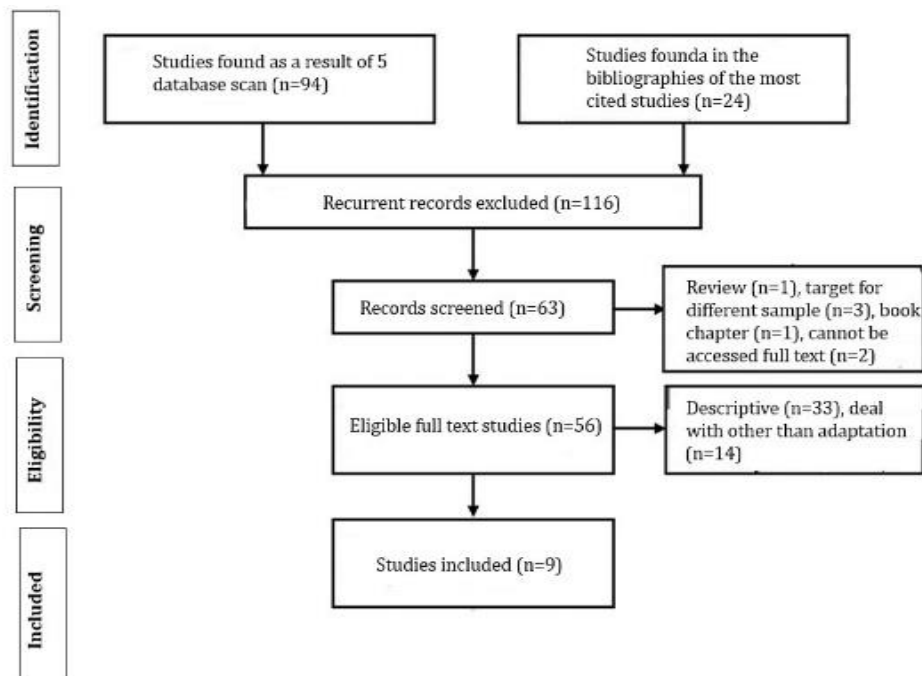


Figure 1. PRISMA Flow Chart

2.2. Ethical

Because this study is basically a scope review, there is no need for approval of an ethical committee. Nevertheless, both authors assert that this research strictly followed relevant research guidelines and ethics in this category.

3. Findings

3.1. General Characteristics of the Studies

As can be observed in Figure 1, the studies contained in the review are studies that include interventions related to adaptation. All results of the studies are summarized in Table 1. It can be observed that the number of respondents of the studies varied between 16 and 118. Considering the gender classification, it is found that female participants outnumbered male participants in the studies. When the studies conducted are analyzed in general, it is observed that the topics examined are psychological needs (competence, autonomy, and relatedness), social ties, cultural orientation, adaptation to campus life, social adaptation, psychological adaptation, social support, resilience, dropout rates, acculturation, intercultural communication, student experiences, academic success, assertiveness, familiarity with foreign culture, traditions, and languages, interactivity, familiarity with the university and society, coping, socio-cultural competence, intercultural and interpersonal competence, self-efficacy, and mental health. It can be seen that these variables are generally related to adaptation. Measurements and analyzes in the studies are the test-retest method and self-report scales. Most studies used a control group (n=8), but one did not have a control group (Smith and Khawaja, 2014). There are different interventions in the studies such as the intervention of psychological need satisfaction based on self-determination theory, a transcultural intervention program on psychological adaptation, cultural orientation and social bonds (e.g. giving information, establishing relationships during and after the planned bus trip), an web-based intervention based on improving resilience, social support and acculturation, matching host students with international students (in 3 studies), group assertiveness training

and private expressive writing, STAR program of an Experiential and Cognitive Behavioral nature (including strengths, transitions, adaptation and resilience components) and sociocultural competence for success program.

3.2. Findings of the Studies

Westwood and Barker (1990) researched the influence of a peer matching study on foreign students' academic success, dropout levels, and social adjustment. International students and host students were paired and included in the program, and a group that did not participate in the program was formed, and a comparison was made. The program lasted 8 months. Students were trained in communication skills, conceptual knowledge of university resources, and intercultural experience and community resources and procedures and were required to communicate with peer partners at least twice a month. According to the findings, students who engaged in the program had better levels of achievement and fewer dropout rates than those who did not participate. Because of the findings, it was hypothesized that the respondents may have acquired the unwritten codes of the host culture through their peers and therefore may have shown high performance (Westwood & Barker, 1990).

Quintrell and Westwood (1994) carried out a study to examine the impact of a peer matching program between host students and international students on students' experiences (e.g., likelihood of positive identification of the initial year, language fluency, and usage of campus facilities). Host students were given a 1-day training on intercultural communication and campus services information and were requested to communicate with their peer partners two times a month for 1 year. A randomized control group design was used. According to the findings, it was reported that structured communication was beneficial to international students' experiences; program participants chose more positive words to describe the first year, used campus services more, and gained language fluency compared to non-participants. However, no distinction was found across the groups regarding academic performance (Quintrell & Westwood, 1994).

Shergill (1997) studied the validity of the Sociocultural Competence for Success Program with a cross-cultural population of students (indigenous and foreign students) using a pretest-posttest design. The 18-hour over 3 weeks program was delivered in group format (experimental and control group). It contained coaching, modeling, role-playing, constructive feedback, and role rehearsal. It was aimed at the acquisition of self-efficacy by gaining sociocultural competence. According to the findings, the experimental group had higher sociocultural competence skill scores and verbal interaction competence level and less situational avoidance tendency compared to the control group; however, the program had no significant effect on general self-efficacy and social self-efficacy (Shergill, 1997).

One other paper by Abe et al. (1998) explored the impacts of a peer program on the adjustment of foreign students. They were matched with host students. Students' use of campus resources and collage adaptation scores were examined. The study lasted one semester. The tasks of the international students were to interact with foreign culture, customs, and languages and to get to know the university and the society. Also, a short lecture was given to the host students. According to the findings, program facilitators had statistically higher social adjustment levels than non-respondents. On the other side, it has been reported that Asian-origin students have more challenges adapting to campus life than those from non-Asian countries (Abe et al., 1998).

Kanekar et al. (2009) applied a trial pilot-tested web-based intervention to improve hardiness, social support, and acculturation between international university undergraduates of Asian Indian background over 2 months. In the study a pre-test/post-test randomized trial was employed. The comparison group underwent a protocol based on general well-being that was an equivalent protocol to the experimental group. According to the findings, a significant improvement was observed in the mental health variable; however, no significant difference was found across the groups (Kanekar et al., 2009).

Tavakoli et al. (2009) carried out a study investigating the impacts of private expressive writing on health, acculturation stress, and affect in foreign students (with the exception of students who have English as a first language) and group assertiveness training. They used a waiting list control group, a private expressive writing group, a group that underwent group assertiveness training, and a combination of these. They used a pretest-posttest measure. According to the results, expressive writing was rated less well by participants and

caused greater fear and homesickness, yet greater positive affect was observed; group assertiveness training was evaluated positively by the students and caused lower negative affect; the mixed intervention had no influence. As a result of these findings, it was concluded that group assertiveness training increased international students' emotional adjustment, yet individual expressive writing had complex impacts and needs more investigation (Tavakoli et al., 2009).

In another study with foreign students, Sakurai et al. (2010) investigated the impacts of a cross-cultural intervention program on cultural orientation, social ties, and psychological adaptation in Australia. Interventions were included, providing information and building relationships with local students during and after a planned bus trip. Measurements were taken 1 month and 4 months after the program. According to the results, participants in the program developed a larger number of friends than non-participants, and these friends were mainly local people. On the other hand, respondents sustained their interest in host culture, while non-participants' interest diminished. However, participation in the program was reported to have no effect on psychological adjustment (Sakurai et al., 2010).

Smith and Khawaja (2014) applied the STAR program (the letters stand for strengths, transitions, adaptation, and resilience) with 4 weekly 2-hour sessions to international students. It had an experiential and cognitive behavioral nature and group format. The aim was to develop coping that would serve to improve psychological adaptation. The sessions addressed, respectively, relocating to Australia, having friends, feeling good, and staying proactive. The study had a within-group design with pre-post-test and follow-up measurements. Coping self-efficacy, psychological distress, psychological adaptation, and social self-efficacy were assessed. According to the findings, the coping self-efficacy and psychological adaptation scores of the respondents increased, and it was discovered that this gain continued during the follow-up measurement. The growth in social self-efficacy was not significant, and the program had no effect on psychological distress (Smith & Khawaja, 2014).

In a study in which basic psychological need (competence, autonomy, and relatedness) satisfaction treatment established on self-determination theory was used to grow need-satisfying experiences and facilitate the adjustment of Chinese international students to college, Law and Liu (2021) organized 15-20 minute-long sessions one a week for the period of 5 weeks. They administered questionnaires on satisfying basic needs and adjustment to university to the participants in the control and intervention groups as a pre-posttest and follow-up measurement. According to the findings, it was stated that the need satisfaction scores of the participants in the intervention group were significantly greater than those in the control group and that the university adjustment levels of this group increased. It was observed that the effect of the intervention continues after 5 weeks. In addition, it was reported that an increase in psychological need satisfaction predicted a higher degree of student adjustment to university (Law & Liu, 2021).

Table 1 below summarizes general features of the studies.

Table 1. *General Features of the Studies*

Studies	Participants	Intervention	Sample	Method	Outcome variables
Law and Liu, 2021	International students in their first year of university	5 weeks, one session per week, 15-20 minute sessions, Psychological need satisfaction intervention based on self-determination theory	n=60 (10 M, 50 W) Mean age: 18.2	Test-retest measurement, self-report scale, randomized controlled trial, waiting list control group	Psychological need satisfaction (competence, autonomy and relatedness) and adjustment to university (positive effects)
Sakurai et al., 2010	Foreign students in their first year of university	A cross-cultural intervention program on social ties, cultural orientation and psychological adjustment Providing information and building relationships during and after the planned bus trip	n=98 (47 M, 51 W) Mean age: 23.6	Independent groups, longitudinal design	Cultural orientation, social ties (positive effects) and psychological adaptation (no effect)
Kanekar et al., 2009	University students of Indian origin	Over 2-month internet-based intervention to improve social support, resilience and acculturation	n=39 (34 M, 5 W) Mean age: 24.6	Pretest-posttest randomized design	Mental health (generally improved but no group difference)
Quintrell and Westwood, 1994	International students	Pairing international students with host students, one day of intercultural communication and campus services information training for host students, communicating 2 times a month for a year	n=82, gender and mean age not specified	Structured communication, randomized control group design	Student experiences (likelihood to describe the year positively, use of campus services and language fluency) (positive effects), academic success (no effect)
Tavakoli et al., 2009	International students by excluding international students whose first language is English	Group assertiveness training and private expressive writing	n=118, gender not specified Mean age: 25	Waiting list control group, pretest-posttest design	Group assertiveness training: Negative affect (lowered), emotional adjustment (improved) Expressive writing: Positive affect (increased), homesickness and fear (increased), Combined intervention: no effect
Abe et al., 1998	International students	One semester international peer program (interacting with foreign culture, customs and languages, familiarization with the university and society, short training for host students)	n=60 (31 M, 29 W) Mean age: 23	Pairing international students with host students	Social adjustment (positive effects), adaptation to campus life (more difficulties for students from Asian countries)
Smith and Khawaja, 2014	International students	STAR program with Experiential and Cognitive Behavioral nature (strengths, transitions, adaptation, resilience), 4 weekly 2 hour sessions	n=16 (8 M, 8 W) Mean age: 25.2	Within-group design, pretest-posttest and follow-up measurement	Coping self efficacy (increased), acculturation (psychological adaptation) (improved), social self efficacy (no effect), psychological distress (no effect)
Shergill, 1997	Intercultural sample (local and international students)	18 hours and 3 week sessions, group format, Sociocultural Competence for Success program (coaching, modeling, role playing, role rehearsal and constructive feedback methods)	n=36 (9 M, 27 W) Mean age: 29.6	Between-group pretest-posttest design	Sociocultural competence, intercultural and interpersonal competence (positive effects), general self-efficacy and social self-efficacy (no effect)
Westwood and Barker, 1990	Foreign students	8 month peer pairing program, training students in communication skills, conceptual knowledge of intercultural experience, community resources, university resources and procedures, communicating at least 2 times a month	n=48, gender and mean age not specified	Pairing international students with host students	Academic success, dropout rates, aspects of social adjustment (positive effects)

Note. M: Man, W: Women

4. Discussion and Conclusion

In the present study, a literature review was carried out, and 9 studies that included interventions for the adaptation of international students and met the screening criteria were evaluated. In this review, issues such as what kind of interventions have been made regarding the integration of international students, which variables have been studied on this issue, and which aspects of the phenomenon can be studied in interventions related to this issue are discussed. Accordingly, it has been observed that the issue of integration has been approached in terms of many different components and related variables and has been studied with different interventions and different methods. In the studies, the main outcome variables include psychological need satisfaction (e.g., competence, autonomy, and relatedness); adjustment to university; social ties; cultural orientation; psychological adaptation; mental health; student experiences (e.g., likelihood of positive identification of the year, use of campus services, and language fluency); academic achievement; positive affect; homesickness and fear; emotional adjustment; social adjustment; adjustment to campus life; coping; acculturation; socio-cultural competence; intercultural and interpersonal competence; self-efficacy; dropout rates; and dimensions of social adjustment. It can be said that group and individual formats are generally used in these studies. It was seen that the method of matching foreign students and their peers was used quite frequently, especially at the local level; the sample was generally composed of foreign undergraduates in their junior year at the university; the interventions lasted an average of 5 weeks; most of the participants were female; and most of them had a control group. The methods used generally included providing information (e.g., foreign culture, traditions, intercultural experience, social resources, university resources, and procedures), providing training on various topics (e.g., assertiveness), encouraging establishing relationships, and developing certain skills (such as coping, resilience, and communication). Almost all of the interventions were reported to be functional in at least one aspect.

A detailed look at the most prominent and common features of the programs shows that the method of pairing international students with their local peers is frequently used. This method was used in 4 out of 9 studies. In terms of its effects, the peer pairing method seems to have benefits such as making friends, increasing interest in local culture, increasing positive experiences, increasing use of university facilities, gaining language fluency, increasing social adjustment, and lowering dropout rates. In one study, this was interpreted as a benefit due to learning the non-written codes of the host culture via peers. In terms of academic achievement, there is no consistency between the findings of the studies; in one study, it was reported that the success rates of the individuals were greater than the control group as a result of peer pairing, while in another study, there was no difference in terms of academic performance (Quintrell & Westwood, 1994; Westwood & Barker, 1990). The finding that there was no increase in academic achievement was explained by the fact that the students were very young, had no previous university experience, were trying to get used to the university experience at the same time, and were experiencing the personal developments brought about by the psychosocial development period (Quintrell & Westwood, 1994). It was also reported that this method had no effect on psychological adjustment (Abe et al., 1998; Quintrell & Westwood, 1994; Sakurai et al., 2010; Westwood & Barker, 1990). Therefore, it is thought that this method is a useful method in general and should continue to be used in future studies.

As for the reasons for the failure of intervention programs, the lack of change in a program in terms of psychological adjustment has been attributed to the fact that it is composed of people who are already adjusted (Sakurai et al., 2010). Similarly, a similar explanation for a similar result was given in 2 other studies that people were already in good mental health, resilience, and social support (Kanekar et al., 2009) and distress level (Smith & Khawaja, 2014) at baseline. In addition to this explanation, it was stated that the level of distress differed between the post-test and follow-up, which could be explained by the knowledge that the students were in the exam period. Therefore, it was thought that attention should be paid to the timing of the measurements taken from the students. Also, it would be meaningful and functional to conduct studies with people in need in terms of these variables. On the other hand, it should be noted that some changes are seen immediately after the program and some changes are seen in the follow-up study. For this reason, it would be useful to add follow-up measurements in the studies. In another study, the fact that there was no change in self-efficacy was explained as that the intervention may not have contributed to self-efficacy (Shergill, 1997). In addition, one of the comments made was that the measurement tool used may have been incomplete in

assessing self-efficacy in the context of sociocultural adaptation (Shergill, 1997). Therefore, the degree to which the intervention is useful for the identified variable and whether the measurement tool used is appropriate for the sample and the context is also one of the issues to be considered. Finally, in one study, two different conditions (expressive writing and assertiveness training) were applied to two different groups, and a combination of the two conditions was applied to another group (Tavakoli et al., 2009). No effect was observed in the group in which the combination was applied, and this was interpreted as the negative effects of writing overriding the positive effects of assertiveness training (Tavakoli et al., 2009). Accordingly, in studies where more than one method is used, attention should be drawn to the relationship between the methods, and factors such as the order in which the methods are given and the interaction of their contents with each other should be taken into consideration.

When the outcome variables addressed in the studies were examined, it was observed that 6 studies used the concept of adjustment as an outcome variable (Abe et al., 1998; Law & Liu, 2021; Sakurai et al., 2010; Smith & Khawaja, 2014; Tavakoli et al., 2009; Westwood & Barker, 1990). However, different dimensions of adjustment have been focused on, such as social adjustment (in 2 studies) (Abe et al., 1998; Westwood & Barker, 1990), adjustment to university, psychological adjustment/accluturation (in 3 studies) (Law & Liu, 2021; Sakurai et al., 2010; Smith & Khawaja, 2014), emotional adjustment, and adjustment to campus life (Abe et al., 1998; Tavakoli et al., 2009). In one of these studies, two dimensions of adjustment, social adjustment and adjustment to campus life, were examined simultaneously (Abe et al., 1998). In two studies, academic achievement was considered as an outcome variable (Quintrell & Westwood, 1994; Westwood & Barker, 1990). In addition to studies that directly measure adjustment, it was thought that addressing different dimensions of academic achievement and adjustment may be meaningful in terms of the functioning levels of individuals. It can be thought that when people adapt, they participate in life academically and socially. It is also known that international students have many adaptation concerns; for example, academic concerns about adapting to a new language and education system and concerns about understanding and adapting to unfamiliar social norms (Church, 1982). In addition to these concerns, in one study, international students' social adjustment and institutional attachment scale scores were found to be significantly lower than local students (Baker & Siryk, 1989). Therefore, it is considered that it would be critical to use a wide range of variables as outcome variables in studies on adjustment. In this case, it is not clear which variables should be addressed in future studies and if some of the variables that have already been studied are forgotten, whether an aspect of adjustment will be incomplete or not, that is, what its scope should be. In addition, the fact that the variables are so different can make it difficult to study the same topic. By ensuring the commonality of terms used, clearer results can be obtained through repeated studies.

It is noteworthy that only two studies have used the group format in the field of adaptation, where sociocultural competence and thus establishing relationships are considered so important and are included in numerous studies (Shergill, 1997; Tavakoli et al., 2009). Naturally, there are not enough studies to compare group and individual studies. However, according to these studies, it was reported that group assertiveness training increased emotional adjustment, and in the other study, a sociocultural competence program given in a group format increased sociocultural competence skill scores and verbal interaction competence level and decreased situational avoidance tendency; however, it did not have a significant effect on general self-efficacy and social self-efficacy (Shergill, 1997; Tavakoli et al., 2009).

Another noteworthy point in the studies is which country the students come from and what kind of country they come to. The general situation of the country, for example, whether it is individualistic or collectivistic, and whether the two countries have common values and norms, can also make a difference. For instance, it has been found that the Asian students have more challenges in adapting to campus life than non-Asian students, and it is thought that the differences and similarities between the characteristics of the home country and the characteristics of the destination may be distinctive (Abe et al., 1998). In the study, this was interpreted as other students having gained experience from living in the United States before and therefore adapting better to university life. This explanation is similar to the individualism dimension from the domestic culture dimensions (uncertainty avoidance, power distance, individualism, and masculinity) of Hofstede's Cultural Dimensions Theory. Accordingly, individual goals are compared with collective/group goals and interpreted according to whichever is important for the person (Hofstede, 1980). Foreign students can be evaluated in accordance with the national cultural dimensions of the Hofstede, and interventions can be developed in

accordance with these characteristics, and specific personalized interventions can be applied. By comparing the host culture and the local culture of the international student in terms of the dimensions of the Hofstede (e.g., hierarchical, collectivist), it can be determined to what extent the two cultures are similar. In this way, as the difference increases, people with an excessive need for adaptation intervention can be identified.

It is seen that many interventions involve the method of providing education. In addition to international students who are the subject, local students are also given training on acculturation (Abe et al., 1998; Quintrell & Westwood, 1994). This is important in the sense that the process of acculturation and adaptation is not unilateral and is an ongoing process with the people with whom they interact (Berry, 2001). This information may have been taken into consideration in other studies through the method of establishing relationships by pairing with local peers. However, it should not be forgotten that as much as international students experience this process by encountering a new culture, local students similarly encounter different cultures when they encounter international students from many different countries of origin. Therefore, there is an acculturation process on both sides.

It is seen that different measurement tools are used in the studies. The Student Adaptation to College Questionnaire (SACQ), Acculturative Stress Scale for International Students, Kessler Psychological Distress Scale, Inventory of International Student Psychological Adjustment, and Interpersonal Skills Checklist are some of them (Abe et al., 1998; Kanekar et al., 2009; Law and Liu, 2021; Shergill, 1997; Smith and Khawaja, 2014; Tavakoli et al., 2009). Among these, especially the Students' Adjustment to University Questionnaire has been used in more than one study. This may be because it allows measuring different components of adjustment at the same time through its subscales.

5. Recommendations

To sum up, in this study we reviewed psychological intervention studies about adaptation of international students. Although the methods and interventions used in these studies have many benefits, they also have some shortcomings and areas that need improvement. In this regard, we can list some of our suggestions as follows:

- The method of pairing international students with their local peers can be continued to be used in future studies. It was mentioned that this method has lots of benefits (such as making friends, increasing positive experiences, increasing use of university facilities, increasing interest in local culture, gaining language fluency, increasing social adjustment, and lowering dropout rates).
- It was also mentioned that there are different outcome variables related to adjustment (such as adjustment, social adjustment, psychological adjustment/acculturation, emotional adjustment, adjustment to campus life, and academic achievement). We recommend conducting repeated studies with different terms and ensuring common terms in studying this subject.
- To compare as group work and individual work, in future studies, the same program can be given in both group and individual formats and examined comparatively, and it can be seen which one is more effective, especially in terms of socio-cultural adaptation.
- There is a need for more scientific studies that make more comparisons in terms of countries of origin. Thus, it was thought that the needs related to adaptation could be determined through the differences-similarities between the country of origin and host country and that people could be directed to appropriate interventions.
- It is thought that the adaptation process will be healthier when both international students and local students are informed or trained in terms of developing intercultural sensitivity. As a result, it is important to include local students in the process, as it can be beneficial for both sides.
- In future studies, more unique and different measurement tools can be developed to determine which ones measure the indispensable variables in terms of adjustment and which ones can become standardized tools. In terms of methodology, the main needs in the future are that scientific studies should be randomized controlled trials, include a larger and more representative sample, and comprehensively address adaptation needs. In particular, it is thought that interventions that include contact with local people, i.e., social elements, take into account the psychological needs of the person,

such as autonomy, competence, and relatedness; cognitive elements; and awareness of emotions and skills to manage them, i.e., elements related to emotions and behavioral elements, may be more comprehensive and successful (Aljaberi et al., 2021).

- It is observed that the studies reviewed consisted of short-term cross-sectional studies; therefore, long-term or longitudinal studies are needed.

To mention the limitations of this review, firstly, since only English-language articles are involved in this review, the extent of the study can be expanded by including articles in other languages in future studies. In addition, the inclusion of only studies that include intervention and only studies that include variables related to adaptation is another situation that reduces inclusiveness. In future studies, compiling studies on international students with and without interventions and addressing adjustment and other issues may enable a more inclusive study. One of the strengths of this study is to examine which interventions have been made in the field for the adaptation of international students, which methods have been used in these interventions, how many different studies have used which method, and to make inferences in the light of the literature on the reasons. In addition, suggestions were presented to guide future studies, and it was aimed to draw attention to this issue. It is not clear to what extent which variables and methods should be used to intervene in the adjustment of foreign students. However, it is thought that the existence and development of such interventions that enable students to deal with possible challenges in their adaptation processes and increase their social and academic functionality are important in terms of economic, sociocultural, academic, and physical and psychological health for foreign students themselves, their families, their countries of origin, and the country they are in.

6. References

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