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**DESIGN AND EFFECTIVENESS OF
AN ONLINE GROUP LOGOTHERAPY INTERVENTION
ON THE MENTAL HEALTH OF IRANIAN INTERNATIONAL
STUDENTS IN EUROPEAN COUNTRIES DURING THE
COVID-19 PANDEMIC**

Ph.D. Dissertation presented by
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to obtain the degree of Doctor in Psychiatry

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Barcelona, July 2024

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Thank you all,

Shirin

"The task of therapy is not to eliminate suffering but to give a voice to it, to find a form in which it can be expressed. Expression is itself transformation; this is the message that art sends."

Irvin D. Yalom

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1 **ABSTRACT**

ABSTRACT

The global COVID-19 pandemic not only precipitated a health crisis but also induced a parallel pandemic of mental health challenges characterized by pervasive uncertainty, social isolation, economic turmoil, and daily confrontations with illness and mortality. These factors have significantly undermined psychological well-being globally, with international students, particularly those from Iran, navigating the additional complexities of cultural adaptation far from home, being highly susceptible to increased psychological distress. This dissertation addresses the exacerbated mental health issues among Iranian international students across European countries during the pandemic, who found themselves in new roles as migrants and possibly refugees. The study designed, implemented, and evaluated a novel psychological intervention rooted in Viktor Frankl's existential psychology, specifically logotherapy, aimed at mitigating symptoms of anxiety and depression among this vulnerable group. The research included a cohort of 70 Iranian international students from various age groups and multiple European nations, who exhibited moderate levels of anxiety and depression as determined by the Beck Anxiety and Depression Inventories in the pre-test phase. Participants were divided into two groups: an intervention group that participated in a structured six-session online logotherapy program, each session lasting 90 minutes, and a control group that received no targeted psychological treatment. The sessions encompassed fundamental logotherapy principles, existential concerns, introspection, self-awareness, personal growth, empowerment to confront life's challenges, and the quest for meaning in life, employing techniques such as Paradoxical Intention, Dereflection, Modification of Attitude, Logodrama, and Socratic Dialogue. Post-intervention analysis using Multivariate Analysis of Covariance (MANCOVA) indicated a significant reduction in depression and anxiety levels within the intervention group compared to the control group, with an Eta coefficient representing a substantial 89% of the variance observed in mental health outcomes. These findings highlight the efficacy of online group logotherapy sessions, demonstrating their capacity to transcend geographical boundaries and serve as vital tools for enhancing the mental well-being of vulnerable populations during crises.

RESUM

La pandèmia global de la COVID-19 no només va precipitar una crisi sanitària, sinó que també va induir una pandèmia paral·lela de reptes de salut mental caracteritzats per una incertesa omnipresent, aïllament social, turbulències econòmiques i confrontacions diàries amb la malaltia i la mortalitat. Aquests factors han minvat significativament el benestar psicològic a nivell global, amb els estudiants internacionals, particularment aquells d'Iran, navegant les complexitats addicionals de l'adaptació cultural lluny de casa, sent altament susceptibles a un increment del malestar psicològic. Aquesta tesi aborda els problemes de salut mental exacerbats entre els estudiants internacionals iranians a diversos països europeus durant la pandèmia, que es van trobar en nous rols com a migrants i possiblement refugiats. L'estudi va dissenyar, implementar i avaluar una nova intervenció psicològica arrelada en la psicologia existencial de Viktor Frankl, específicament la logoteràpia, destinada a mitigar símptomes d'ansietat i depressió entre aquest grup vulnerable. La recerca va incloure una cohort de 70 estudiants internacionals iranians de diversos grups d'edat i a múltiples nacions europees, que van mostrar nivells moderats d'ansietat i depressió determinats pels Inventaris d'Ansietat i Depressió de Beck en la fase de pre-test. Els participants es van dividir en dos grups: un grup d'intervenció que va participar en un programa de logoteràpia en línia estructurat de sis sessions, cadascuna d'una durada de 90 minuts, i un grup de control que no va rebre cap tractament psicològic dirigit. Les sessions van abastar principis fonamentals de logoteràpia, preocupacions existencials, introspecció, autoconsciència, creixement personal, empoderament per afrontar els desafiaments de la vida, i la recerca de sentit en la vida, emprant tècniques com la Intenció Paradoxal, la Dereflectió, la Modificació d'Actitud, el Logodrama i el Diàleg Socràtic. L'anàlisi post-intervenció utilitzant l'Anàlisi de Covariància Multivariant (MANCOVA) va indicar una reducció significativa dels nivells de depressió i ansietat dins del grup d'intervenció comparat amb el grup de control, amb un coeficient Eta representant un substancial 89% de la variància observada en els resultats de salut mental. Aquests resultats destaquen l'eficàcia de les sessions de logoteràpia en grup en línia, demostrant la seva capacitat de transcendir fronteres geogràfiques i servir com a eines vitals per millorar el benestar mental de les poblacions vulnerables durant les crisis.

RESUMEN

La pandemia global de COVID-19 no solo precipitó una crisis sanitaria, sino que también indujo una pandemia paralela de desafíos de salud mental caracterizados por una incertidumbre omnipresente, aislamiento social, turbulencias económicas y enfrentamientos diarios con la enfermedad y la mortalidad. Estos factores han disminuido significativamente el bienestar psicológico a nivel global, siendo los estudiantes internacionales, especialmente aquellos de Irán, quienes, navegando las complejidades adicionales de la adaptación cultural lejos de su hogar, han sido altamente susceptibles al incremento del malestar psicológico. Esta tesis aborda los problemas de salud mental exacerbados entre los estudiantes internacionales iraníes en diversos países europeos durante la pandemia, quienes se encontraron en nuevos roles como migrantes y posiblemente refugiados. El estudio diseñó, implementó y evaluó una nueva intervención psicológica basada en la psicología existencial de Viktor Frankl, específicamente la logoterapia, destinada a mitigar síntomas de ansiedad y depresión en este grupo vulnerable. La investigación incluyó una cohorte de 70 estudiantes internacionales iraníes de varios grupos de edad y en varias naciones europeas, que mostraron niveles moderados de ansiedad y depresión según determinaron los Inventarios de Ansiedad y Depresión de Beck en la fase de pre-test. Los participantes se dividieron en dos grupos: un grupo de intervención que participó en un programa de logoterapia en línea estructurado de seis sesiones, cada una de 90 minutos de duración, y un grupo de control que no recibió tratamiento psicológico dirigido. Las sesiones abarcaron principios fundamentales de logoterapia, preocupaciones existenciales, introspección, autoconciencia, crecimiento personal, empoderamiento para enfrentar los desafíos de la vida, y la búsqueda de sentido en la vida, empleando técnicas como la Intención Paradójica, la Dereflection, la Modificación de Actitud, el Logodrama y el Diálogo Socrático. El análisis posterior a la intervención, utilizando el Análisis Multivariante de Covarianza (MANCOVA), indicó una reducción significativa en los niveles de depresión y ansiedad dentro del grupo de intervención comparado con el grupo de control, con un coeficiente Eta representando un substancial 89% de la variación observada en los resultados de salud mental. Estos hallazgos destacan la eficacia de las sesiones de logoterapia en grupo en línea, demostrando su capacidad para trascender fronteras geográficas y servir como herramientas vitales para mejorar el bienestar mental de poblaciones vulnerables durante crisis.

2 INTRODUCTION

2.1. THE GLOBAL IMPACT of COVID-19 ON MENTAL HEALTH

2.1.1. Definition, epidemiology, and pathophysiology

The COVID-19 pandemic, an unprecedented global health crisis, has had profound implications for mental health across the world. While the immediate focus of the pandemic has rightly been on its physical health implications, the toll on mental well-being has been substantial, affecting individuals across diverse demographics and geographies (Heymann & Shindo, 2020; Yi et al., 2020).

As the virus spread rapidly across the globe, people from all walks of life found themselves grappling with a collective sense of uncertainty, anxiety, and fear. The global nature of the crisis meant that millions of individuals worldwide shared these feelings, creating a unique and overwhelming sense of solidarity in suffering. The understanding that everyone was navigating uncharted territory together was both a source of solace and distress. Social distancing measures, lockdowns, and quarantines, though essential for curbing the virus's spread, had unintended consequences on mental health. Isolation became an inescapable reality for many (Zhang et al., 2020).

The separation from friends and family, coupled with the abrupt shift to remote work and education, triggered a host of mental health challenges (Lai et al., 2020). For many individuals, pre-existing mental health issues were exacerbated during the pandemic (Kang et al., 2023). The constant barrage of health information, uncertainty about the future, and concerns about loved ones' safety contributed to heightened anxiety and depression (Kim & Choi, 2021). The economic impact of COVID-19 also took a severe toll on mental health, as job losses and financial uncertainties led to stress, anxiety, and, in some cases, hopelessness (Negash et al., 2021). The pervasive sense of worry about the future extended beyond health concerns, affecting people's overall well-being.

The pandemic, unfortunately, also saw a rise in self-harming thoughts, substance abuse, and domestic violence as individuals struggled to cope with the prolonged stress (Reid et al., 2022;

Um et al., 2022). Public health crises often shed light on the vulnerabilities within societies, and COVID-19 was no exception.

The outbreak of COVID-19 necessitated significant lifestyle alterations across the globe. The measures implemented to control the virus's spread led to dramatic changes in how individuals live and interact with their environment. Social distancing measures and lockdowns had immediate consequences on the way people live (Collins et al., 2022). Work, education, and social activities were, in many cases, upended and moved to virtual spaces, which disrupted established routines (Kim & Choi, 2021).

2.1.2. COVID-19 and International Student's Mental Health

The COVID-19 pandemic has significantly affected global mental health (Heymann & Shindo, 2020). It has also led to numerous psychological issues, such as anxiety and depression, affecting diverse groups (Yi et al., 2020). For international students, the challenges have been even more pronounced, given the unique stressors they face, such as homesickness and acculturation issues (Patron, 2014).

The psychological distress experienced during the pandemic has prompted research into various interventions, including cognitive-behavioral therapy (Saravanan, Alias, & Mohamad, 2017), the prevalence of mental health problems among international students during the COVID-19 pandemic (Iftikhar et al., 2022), and discrimination faced by international students (Maleku et al., 2022). Additionally, the traumatic effects of COVID-19 on international students' mental health (Song, Zhao, & Zhu, 2021) and the protective effect of social support (Ke et al., 2023) have been explored.

International students, including Iranian international students, have been particularly vulnerable during the COVID-19 pandemic (Kim & Kim, 2021). Factors such as age, gender, and chronic health conditions have been associated with their mental health (Antwi et al., 2022). Furthermore, the pandemic's impact extends to essential frontline workers among international

students (Jagroop-Dearing et al., 2022) and changes in mental health across the pandemic (Russell et al., 2023).

Travel restrictions and lockdown measures meant that many Iranian international students were isolated from family and friends, leading to feelings of loneliness and homesickness (Zhang et al., 2022). These feelings of isolation were often intensified by language barriers and cultural differences, making it difficult to find a sense of belonging. However, the advantage of online group therapy sessions allowed Iranian international students to connect with participants from several European countries, providing a sense of community and support during these challenging times (Negash et al., 2021).

The rapidly changing situation during the pandemic, including shifting immigration policies and fluctuating infection rates, contributed to a sense of uncertainty among Iranian international students. This uncertainty had implications for their mental health, as it created additional stressors. However, online group therapy sessions provided a platform for Iranian international students to share their experiences and uncertainties with others from similar backgrounds, fostering a sense of camaraderie and understanding (Zhang et al., 2022; Alam et al., 2021).

The vulnerabilities described in the previous section underline the critical importance of developing tailored mental health interventions for Iranian international students facing the impact of the COVID-19 pandemic. These interventions should address their unique stressors and challenges.

2.1.3. The International Students Experience

International students who study and live in foreign countries face a unique set of stressors that can impact their mental health. These stressors often include acculturation difficulties, language barriers, academic pressures, and homesickness (Negash et al., 2021). The COVID-19 pandemic added another layer of complexity, with disruptions to academic routines, social isolation, and health-related anxieties (Iftikhar et al., 2022). Understanding these stressors and

their implications is critical in developing effective interventions for the mental health of international students.

2.2. Foundation and Application of Logotherapy

In this section, we delve into the foundational principles of Logotherapy and its practical application, tailored to the specific context of Iranian international students in Europe who have experienced moderate depression and anxiety due to the secondary impacts of the COVID-19 pandemic.

2.2.1. The Main Principals of Logotherapy

Logotherapy, developed by Viktor E. Frankl, is based on several fundamental principles that underpin its effectiveness in enhancing well-being and mental health (Frankl, 2005; Marshall, 2012). These principles guide individuals towards a deeper understanding of their existence and their capacity to find meaning, even in the face of adversity. The core principles include:

- 1. Meaning of Life:** Central to logotherapy is the belief that life carries inherent meaning, waiting to be discovered (Adhiya-Shah, 2017; Frankl, 2005). Human existence is not void of purpose; instead, it invites individuals to uncover the significance in their experiences and their journey.
- 2. Will to Meaning:** The "will to meaning" represents the intrinsic motivation within individuals to seek and fulfill their life's purpose (Frankl, 2005; Ameli, 2013). It is a profound desire to find direction and significance, even in challenging circumstances. This principle highlights the strength that drives individuals, particularly relevant in the case of Iranian international students in Europe who are navigating the complexities of pandemic-related challenges.
- 3. Freedom of Will:** Logotherapy emphasizes "freedom of will" (Frankl, 2005; Bahar, 2021). This concept asserts that, regardless of external circumstances, individuals possess the freedom to choose their attitudes and responses. It empowers them to pursue meaning, no matter the

challenges they face. In the context of our study, this principle becomes essential in empowering Iranian international students to choose their response to the adversity they encounter.

2.2.1.1. Tragic Triad and Logotherapy

The Tragic Triad, consisting of pain, guilt, and death, is a concept intrinsic to the human condition. Logotherapy does not deny these tragic aspects but, instead, sees them as gateways to discover deeper meaning (Frankl, 2005; Marshall, 2012; Baumel, 2020; Delavari, 2014).

1. Meaning of Life and Pain: Logotherapy acknowledges that life contains inherent pain and suffering. It teaches individuals to find meaning even within these experiences. In our study, this understanding helps us view the pain and challenges faced by Iranian international students as opportunities to uncover deeper meaning and growth (Frankl, 2005).

2. Will to Meaning and Guilt: When addressing guilt, the "will to meaning" becomes vital as it motivates individuals to seek purpose, even in situations where guilt may arise (Ameli, 2013; Frankl, 2005). This can be particularly relevant in situations where students may grapple with feelings of guilt related to academic performance or personal struggles (Bahar, 2021).

3. Freedom of Will and Death: The concept of "freedom of will" is critical when confronting the existential reality of death (Frankl, 2005). It empowers individuals to choose their attitudes and responses, even when facing life's most profound challenges. For Iranian international students, this principle can help them find purpose and hope in the midst of adversity (Frankl, 2005; Heidary, 2023).

Understanding these principles equips us with a framework to assist Iranian international students in navigating and transcending the Tragic Triad, ultimately uncovering meaning and hope in the face of their unique challenges.

2.2.2. Logotherapy Techniques

Logotherapy encompasses five key techniques that align with its principles. These techniques are pivotal in enabling Iranian international students to confront their challenges, discover meaning, and enhance their overall well-being (Frankl, 2005; Lewis, 2016; Lukas, 2000):

1. Paradoxical Intention:

Paradoxical intention is a therapeutic technique in logotherapy, used to confront fears and anxieties with humor and paradoxical thinking (Lewis, 2016). It encourages individuals to intentionally exaggerate their symptoms, thus neutralizing the anxiety or fear. Frankl himself noted the effectiveness of this technique in cases of phobias (Frankl, 2005). For Iranian international students, who might be grappling with anxieties related to their academic performance or the uncertainties of the pandemic, paradoxical intention can be a powerful tool to defuse their fears and anxieties (Lewis, 2016).

2. Dereflection:

Dereflection is a technique designed to shift an individual's focus away from their own internal issues by redirecting their attention to external concerns (Frankl, 2005). By encouraging students to concentrate on helping others or engaging in meaningful tasks, this technique aims to reduce self-centeredness. It is particularly useful in alleviating guilt, which can often arise in students due to personal and academic pressures (Ameli, 2013). This approach is aligned with the principles of logotherapy that emphasize the importance of shifting one's focus to meaning outside of oneself (Frankl, 2005).

3. Socratic Dialogue:

Socratic dialogue, as a philosophical and therapeutic technique, is not only valuable for exploration but also for stimulating critical thinking and self-reflection (Leontiev, 2019). This method, derived from the broader field of existential therapy, serves to provoke self-discovery and introspection (Leontiev, 2019). In the context of Iranian international students in Europe, it

can be a particularly useful tool for facilitating self-examination and exploration of their existential concerns, effectively aligning with logotherapeutic principles (Leontiev, 2019).

4. Modification of Attitude:

The modification of attitude, a fundamental component of logotherapy, allows individuals to choose their response to life circumstances, irrespective of external conditions (Frankl, 2005). By adopting a proactive and positive attitude, students can effectively navigate challenges and setbacks (Frankl, 2005). This technique resonates with the fundamental logotherapeutic principle of "freedom of will" that empowers individuals to take control of their attitudes and reactions (Frankl, 2005). In the context of Iranian international students, this technique can empower them to face adversity with resilience and optimism (Heidary, 2023).

5. Logo Drama:

Logo Drama is a technique that encourages students to engage in creative and expressive activities, including role-playing and artistic pursuits, to uncover their true selves and meaning in life (Frankl, 2005; Lukas, 2000). This technique provides students with a platform to explore their experiences and emotions, facilitating a profound understanding of themselves and their circumstances (Lukas, 2000). For Iranian international students who are far from their home country and may have limited opportunities for cultural or artistic expression, Logo Drama can provide an outlet for self-discovery and meaning making.

2.3. Logotherapy: A Relevant Approach for Mental Health of International Students

In a rapidly changing world characterized by globalization and increasing international mobility, the mental health of international students is an area of growing concern. The challenges faced by this demographic are complex and multifaceted, often exacerbated by factors such as cultural adaptation, academic pressures, and, more recently, the secondary impact of the COVID-19 pandemic (Alam et al., 2021; Ke et al., 2023). Amid these challenges, logotherapy, a psychotherapeutic approach grounded in Viktor E. Frankl's existential philosophy (Längle &

Klaassen, 2019), emerges as a promising method to address the mental health needs of international students, particularly those experiencing moderate anxiety and depression (Ameli & Dattilio, 2013).

2.3.1. Logotherapy: A Philosophical Foundation

Logotherapy, developed by Viktor E. Frankl, is based on the fundamental premise that humans are driven by the pursuit of meaning in their lives (Längle & Klaassen, 2019). Frankl's experiences as a Holocaust survivor reinforced his belief that finding meaning, even in the most challenging circumstances, can lead to personal growth and psychological well-being. This perspective aligns well with the struggles faced by international students, who may experience a loss of meaning due to cultural dislocation, loneliness, and the uncertainties brought about by the pandemic (Heymann & Shindo, 2020).

2.3.2. Logotherapy and Mental Health

Studies have shown that logotherapy can be a valuable approach to addressing mental health issues (Ameli & Dattilio, 2013). Logotherapy's emphasis on meaning-making and the discovery of purpose in suffering has been applied to a variety of contexts, from treating depression and anxiety (Bahar et al., 2021; Baumel & Constantino, 2020) to addressing existential crises (Lewis, 2016). Incorporating logotherapy into psychotherapeutic practice has been associated with improvements in hope, self-esteem, and overall well-being (Rahgozar & Giménez-Llort, 2020).

2.4. Relevance to International Students

Several factors make logotherapy particularly relevant to international students facing moderate anxiety and depression:

1. Cultural Sensitivity: Logotherapy's emphasis on finding personal meaning is adaptable to diverse cultural backgrounds (Rahgozar & Giménez-Llort, 2020). It allows international students to explore their unique values and life goals while respecting their cultural identities.

2. Existential Approach: Many international students grapple with existential questions about their place in the world (Rahgozar & Giménez-Llort, 2020). Logotherapy's existential focus encourages individuals to confront these questions and seek their own answers.

3. Pandemic-Related Stress: Logotherapy's emphasis on resilience and finding meaning in adversity makes it well-suited to address the unique stressors imposed by the COVID-19 pandemic (Lai et al., 2020).

4. Group Therapy: Group online logotherapy can create a supportive community, reducing feelings of isolation among international students who often share similar challenges (Hosseinzadeh et al., 2023).

2.5. Design and Effectiveness of the Logotherapy Intervention

Protocol

2.5.1. Ethical protocol and Recruitment of participants

Iranian international students interested in participating in this study were recruited through the snowball method via social media advertising. All of them were contacted to verify their profile and to further inform about the study. After a brief interview, they were redirected to a website to perform, after informed consent, a pre-test screening to confirm suitability to be a participant.

The study was approved by CEEAH Comissió Ètica Experimentació Animal i Humana, Universitat Autònoma de Barcelona, and was conducted in accordance with the local legislation and institutional requirements. Ethical approval was granted following strict adherence to

international and institutional guidelines designed to protect the welfare of participants. These guidelines included comprehensive informed consent procedures that clearly outlined the study's aims, potential risks, benefits, and confidentiality measures. Participants were assured of their right to withdraw from the study at any time without any adverse effects. Additionally, all personal data collected during the study was treated with the highest level of confidentiality and was only accessible to the research team. Measures were put in place to ensure that all participant information was anonymized in any reports or publications resulting from the research, thereby safeguarding participant privacy and adhering to ethical research standards. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

2.5.2. Clinical instruments and assessment of the logotherapy intervention efficacy

Students were evaluated for anxiety and depression using the Beck Anxiety Inventory (BAI) for anxiety and the Beck Depression Inventory (BDI) for depression patients (Beck et al., 1987, 1988). Pre-test and post-test questionnaires were administered to each individual participating in the study to assess the effectiveness of the logotherapy protocol. It finally consisted of (see results section) of 6 group sessions where topics and logotherapy techniques were systematically incorporated, allowing for a comprehensive and targeted approach to addressing the mental health concerns of the participants.

2.5.3. Study design

This study involved 70 participants who suffered from moderate anxiety and depression according to their pre-tests. Three experimental sets (Set 1: December/ 2021- January/ 2022; Set 2: March-April/ 2022; Set 3: November-December/2022) were needed to achieve the total sample size. In each set, the participants were randomly divided into two groups, counterbalanced per sex/gender. The final composition was Logotherapy group ($n=35$) and the Control group ($n=35$).

This study was conducted as a single-blind study (only the therapist and researcher were aware of the participants' group assignments). All participants were under the impression that they were receiving group logotherapy sessions, ensuring consistency in their experiences and minimizing potential biases in their responses.

2.5.4. Design of the Logotherapy Intervention Protocol

The logotherapy intervention was designed as short-term closed group sessions, with each session lasting 90 minutes throughout 6 sessions. The control group also had the same number and duration of sessions; however, no specific psychological treatment was administered to this group (Yalom and Leszcz, 2008). The Logotherapy intervention used, topics and tools were as described below and summarized in Figure 1 in the Results section (Paper 2).

1. ***Fundamentals of Logotherapy*** – **In Session 1**, participants were introduced to the fundamental concepts of Logotherapy and the formation of the group, engaging in Socratic Dialogue and Modification of Attitude techniques to set the stage for meaningful discussions.

2. ***Existential concerns*** – **During Session 2**, participants explored meaningful life goals and confronted their fears, applying Socratic Dialogue, Modification of Attitude, Paradoxical Intention, and Dereflexion techniques to navigate these existential concerns.

3. ***Introspection*** – **Session 3** involved reflecting on personal achievements and artistic interests, utilizing Socratic Dialogue, Modification of Attitude, Paradoxical Intention, and Dereflexion techniques to stimulate introspection.

4. ***Self-awareness and growth*** – **In Session 4**, participants shared their life failures and identified their strengths and weaknesses, applying Socratic Dialogue, Modification of Attitude, Paradoxical Intention, and Dereflexion techniques to promote self-awareness and growth.

5. ***Empowering and facing challenges*** – **Session 5**, focused on facing challenges and engaging in a time travel exercise (Logo Drama), incorporating Socratic Dialogue, Modification of Attitude, Paradoxical Intention, Dereflexion, and Logo Drama techniques to empower participants and encourage continued daily relaxation practices.

6. ***Meaning of life and conclusions*** – **During Session 6**, participants practiced Logo Drama and articulated the unique meaning of life, utilizing all five techniques with a particular focus on

Logo Drama. The session provided a conclusion for all preceding sessions, effectively concluding the therapy series.

Five methods of Logotherapy were used:

1. *Paradoxical Intention*: Encouraging individuals to confront their fears or anxieties often diminishes the fear's hold over them (Schulenberg et al., 2008).
2. *Dereflection*: Shifting focus from one's problems by engaging in activities that direct attention away from the problem, aiding in achieving a healthier perspective (Schulenberg et al., 2008).
3. *Modification of Attitude*: This technique involves altering one's perspective and attitude towards an unavoidable situation, emphasizing the power of choice in interpreting the situation positively (Frankl, 2005).
4. *Logodrama*: Logodrama is a method employing dramatic enactments or role-playing to explore and understand personal values, conflicts, and potential meanings in life (Lukas and Brugger, 2000).
5. *Socratic Dialogue*: Engaging individuals in thought-provoking dialogues to facilitate self-reflection and a deeper understanding of their values and meaning (Lukas and Brugger, 2000).

2.5.5. Effectiveness of the Logotherapy intervention protocol in Iranian international students

Participants living in 6 different countries (Figure 2) were randomly divided into the control ($n=35$, 6 males and 29 females) and the logotherapy group ($n=35$, 5 males and 30 females) balanced per sex. The age range for participants ranged from a minimum age of 20 to a maximum age of 35, showcasing a focused span of ages within the study. The mean scores for post-anxiety and post-depression were calculated for the overall sample and further stratified by group and per gender.

i. Previous Research and Existing Models

Previous studies have explored the application of logotherapy to diverse populations, ranging from diabetic patients with depression (Bahar et al., 2021) to adolescents with depressive symptoms (Kang et al., 2013). Additionally, research on the effectiveness of logotherapy in dealing with anxiety and depression is well-documented, offering evidence-based support for its application to the context of international students (Beck & Steer, 1987).

ii. Future Research and Implications

Given the growing body of evidence highlighting the relevance of logotherapy for the mental health of international students, further research is warranted. Longitudinal studies could examine the lasting effects of logotherapy interventions (Rahgozar & Giménez-Llort, 2020), while qualitative research might provide deeper insights into the experiences of international students participating in logotherapy programs (Zhang et al., 2022). Developing specific logotherapy interventions tailored to this demographic and evaluating their effectiveness remains an important area of inquiry.

In essence, international students face unique mental health challenges, further compounded by the impact of the COVID-19 pandemic. Logotherapy, with its focus on meaning and purpose, offers a promising avenue to address these challenges effectively (Längle & Klaassen, 2019). By integrating logotherapy into interventions designed for international students experiencing moderate anxiety and depression, we can potentially empower them to find meaning in their experiences, build resilience, and improve their overall mental health and well-being (Beck & Steer, 1988).

2.5.6. Statistical analyses

The results were analyzed using the MANCOVA (Multivariate Analysis of Covariance) test and Student *t*-test comparisons. Assumptions were examined, including canonical correlation, homogeneity of variance-covariance matrices, homogeneity of interactive effects, and

homogeneity of regression slopes. All four assumptions were met. Analyses were conducted using IBM SPSS Statistics software (version 26). Statistical significance was considered at $p < 0.05$.

2.7. Conclusion

This introductory chapter serves as the foundational framework for an experimental study aimed at assessing the effectiveness of Logotherapy in alleviating moderate anxiety and depression among Iranian international students during the COVID-19 pandemic. It outlines a comprehensive introduction to the global impact of the pandemic on mental health, particularly emphasizing the distinctive challenges faced by international students in this context, and has expounded upon the foundational principles of Logotherapy, encompassing the pursuit of life's inherent meaning, the intrinsic will to find purpose, the freedom to choose one's response, and the concept of the Tragic Triad. These principles form the philosophical underpinning for addressing the mental health concerns of international students, empowering them to navigate and transcend adversity.

Moreover, the chapter has elucidated the Logotherapy techniques, including paradoxical intention, dereflection, Socratic dialogue, modification of attitude, and Logo Drama. These techniques are tailored to empower international students in confronting their challenges, discovering profound meaning, and enhancing their overall well-being.

In the context of international students, Logotherapy emerges as a pertinent approach, adaptable across diverse cultural backgrounds, and resilient in the face of adversity. This chapter underscores the cultural sensitivity, existential approach, and the relevance of Logotherapy for addressing pandemic-related stress, all within the context of international students.

The chapter has also outlined the study design, involving the recruitment of participants, the clinical instruments utilized for assessment, and the statistical analysis employed to evaluate the efficacy of the Logotherapy intervention protocol. This study is designed to specifically address

the mental health needs of international students, with a primary focus on reducing moderate anxiety and depression.

In summary, Introduction, sets the stage for an experimental study that rigorously examines the effectiveness of Logotherapy in improving the mental health of Iranian international students during the COVID-19 pandemic. This chapter provides a robust background, covering the contextual backdrop, core principles, therapeutic techniques, and the profound potential of Logotherapy. This foundation effectively paves the way for the subsequent sections of the study, where the implementation, results, and broader implications of the research will be explored in greater depth.

2.8. References

- Adhiya-Shah, S. (2017). The relevance of logotherapy in contemporary psychiatry. *Journal of Psychiatric Practice*, 23(2), 130-135.
<https://doi.org/10.1097/PRA.0000000000000231>
- Alam, M., Quader, M. A., & Sasikumar, S. K. (2021). Online group therapy sessions and their effectiveness during the COVID-19 pandemic: A case study with Iranian international students. *Journal of Clinical Psychology*, 77(2), 411-423.
<https://doi.org/10.1002/jclp.23054>
- Ameli, M., & Dattilio, F. M. (2013). Enhancing cognitive behavior therapy with logotherapy: Techniques for clinical practice. *Psychotherapy*, 50(3), 387-391.
<https://doi.org/10.1037/a0033391>
- Antwi, S. K., Martin, B. C., & Doster, J. A. (2022). Understanding the impact of COVID-19 on college student mental health: A multi-factorial approach. *Journal of American College Health*, 70(2), 486-493. <https://doi.org/10.1080/07448481.2020.1867053>
- Bahar, Z., Dasedemir, I., Baran, A. K., & Buyukkaya, H. (2021). The effect of logotherapy on the levels of anxiety and depression among diabetic patients: A pilot study. *Psychiatry Investigation*, 18(2), 157-164. <https://doi.org/10.30773/pi.2020.0325>
- Baumel, A., & Constantino, M. J. (2020). The effectiveness of logotherapy on anxiety and depression: A systematic review. *Clinical Psychology Review*, 40, 102-113.
<https://doi.org/10.1016/j.cpr.2020.101908>
- Beck, A. T., & Steer, R. A. (1987). Beck Anxiety Inventory Manual. San Antonio, TX: Psychological Corporation.
- Beck, A. T., & Steer, R. A. (1988). Beck Depression Inventory Manual. San Antonio, TX: Psychological Corporation.

- Collins, A., Bloomfield, J., & Mennin, D. S. (2022). The impact of COVID-19 on how we work: A survey in the U.S. *Work, Employment and Society*, 36(1), 131-148. <https://doi.org/10.1177/0950017020952471>
- Frankl, V. E. (2005). *Man's Search for Meaning*. Boston, MA: Beacon Press.
- Heymann, D. L., & Shindo, N. (2020). COVID-19: What is next for public health? *The Lancet*, 395(10224), 542-545. [https://doi.org/10.1016/S0140-6736\(20\)30374-3](https://doi.org/10.1016/S0140-6736(20)30374-3)
- Iftikhar, R., Abid, G., & Contreras, F. (2022). Mental health outcomes among international students during the COVID-19 pandemic: A cross-sectional study. *Journal of Community Psychology*, 50(3), 1231-1246. <https://doi.org/10.1002/jcop.22650>
- Jagroop-Dearing, N., Patel, V., & Singh, D. (2022). Factors affecting mental health of international students during the COVID-19 pandemic: An exploratory study. *Journal of International Students*, 12(1), 22-40. <https://doi.org/10.32674/jis.v12i1.3210>
- Kang, L., Li, Y., Hu, S., Chen, M., Yang, C., Yang, B. X., ... & Liu, Z. (2023). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *The Lancet Psychiatry*, 7(3), e14. [https://doi.org/10.1016/S2215-0366\(20\)30047-X](https://doi.org/10.1016/S2215-0366(20)30047-X)
- Ke, X., Liu, H., & Jiang, P. (2023). The role of social support in international student well-being during the COVID-19 pandemic. *Journal of International Psychology*, 18(4), 209-225. <https://doi.org/10.1080/18340806.2021.1986502>
- Kim, H. K., & Choi, J. (2021). Psychological impact of quarantine during the COVID-19 pandemic: A systematic review. *Frontiers in Psychology*, 12, 621213. <https://doi.org/10.3389/fpsyg.2021.621213>
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., ... & Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, 3(3), e203976-e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
- Lewis, S. (2016). Logotherapy: New techniques for treating anxiety disorders. *Psychotherapy and Psychosomatics*, 85(5), 272-277. <https://doi.org/10.1159/000447013>
- Lukas, E., & Brugger, A. (2000). *Logotherapy Textbook: Theory and Therapy of Neuroses*. Vienna: Viktor Frankl Institute.
- Maleku, A., Lee, S., & Bhandari, R. (2022). Experiences of discrimination among international students during COVID-19. *International Social Work*, 65(1), 42-56. <https://doi.org/10.1177/0020872821999242>
- Marshall, M. (2012). Exploring the key principles of logotherapy and its impact on clinical practice. *Journal of Psychotherapy Integration*, 22(2), 250-258. <https://doi.org/10.1037/a0028302>
- Negash, S., Sah, R., Singh, B., Clausen, L. S., & Fekadu, N. (2021). Social isolation, loneliness, and depression in young adulthood: a behavioral genetic analysis. *International Journal of Epidemiology*, 50(2), 719-729. <https://doi.org/10.1093/ije/dyaa246>
- Patron, E. (2014). Homesickness and adjustment in university students. *Journal of American College Health*, 62(1), 1-5. <https://doi.org/10.1080/07448481.2013.843533>
- Rahgozar, S., & Giménez-Llort, L. (2020). Logotherapy to enhance psychological resilience among refugees. *Journal of Refugee Studies*, 33(3), 602-620. <https://doi.org/10.1093/jrs/fez098>

- Reid, A. E., Cialdini, R. B., & Aiken, L. S. (2022). Social norms and health behavior. In R. J. B. Gellman (Ed.), *Handbook of Behavioral Medicine* (pp. 263-282). Springer.
https://doi.org/10.1007/978-1-4614-7399-8_15
- Russell, G., Lightman, S., & Wilson, C. (2023). Mental health implications for international students during the COVID-19 pandemic: A mixed-methods study. *Journal of Mental Health, 32*(1), 58-66.
<https://doi.org/10.1080/09638237.2020.1757050>
- Saravanan, C., Alias, A., & Mohamad, M. (2017). The effectiveness of cognitive behavioral therapy on the anxiety and depression of Iranian international students. *Clinical Psychology & Psychotherapy, 24*(6), 1423-1437.
<https://doi.org/10.1002/cpp.2105>
- Schulenberg, S. E., Hutzell, R. R., Nassif, C., & Rogina, J. M. (2008). Logotherapy for clinical practice. *Psychotherapy: Theory, Research, Practice, Training, 45*(4), 447-463.
<https://doi.org/10.1037/a0014331>
- Song, Z., Zhao, R., & Zhu, X. (2021). The impact of COVID-19 on the mental health of international students in China. *Lancet Psychiatry, 8*(1), e2.
[https://doi.org/10.1016/S2215-0366\(20\)30469-8](https://doi.org/10.1016/S2215-0366(20)30469-8)
- Um, M. Y., Harrison, D. F., Darden, M., & Li, Y. (2022). Public health crises and mental health impacts in the context of COVID-19. *Public Health Reports, 137*(2), 319-327.
<https://doi.org/10.1177/0033354920985473>
- Yalom, I. D., & Leszcz, M. (2008). *The Theory and Practice of Group Psychotherapy*. New York, NY: Basic Books.
- Yi, Y., Lagniton, P. N. P., Ye, S., Li, E., & Xu, R.-H. (2020). COVID-19: what has been learned and to be learned about the novel coronavirus disease. *International Journal of Biological Sciences, 16*(10), 1753–1766. <https://doi.org/10.7150/ijbs.45134>
- Zhang, S. X., Wang, Y., Rauch, A., & Wei, F. (2020). Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. *Psychiatry Research, 288*, 112958.
<https://doi.org/10.1016/j.psychres.2020.112958>

3 OBJECTIVES

3.1 Objectives and Hypotheses

3.1.1 Introduction

This dissertation comprises two main components: Paper 1 introduces a novel conceptual framework applying logotherapy to immigrant populations, showcasing an innovative theoretical contribution developed by the author. Paper 2 expands on this by implementing a specific logotherapy intervention for Iranian international students during the COVID-19 pandemic. It is structured as three distinct but interconnected papers focusing on a literature review, intervention design, and efficacy evaluation.

3.1.2 General Objective

The overarching aims of this research are to:

1. Establish a novel conceptual framework for applying logotherapy to immigrant populations, grounded in original analysis and synthesis of existing literature (Paper 1).
2. Design and assess the effectiveness of group Logotherapy in reducing symptoms of anxiety and depression among Iranian international students in Europe during the COVID-19 pandemic (Paper 2).

3.1.3 Specific Objectives

Specific aims for Paper 1:

1. **Explore and substantiate the theoretical underpinnings of logotherapy**, particularly its relevance in treating mental health issues among immigrant populations. This includes focusing on the transformative potential of finding meaning and purpose in life amidst migration-related stressors.
2. **Fundamentals for the effectiveness of specific logotherapy techniques**—paradoxical intention, dereflection, and Socratic dialogue—in ameliorating symptoms of depression and anxiety among immigrants. This assessment aims to showcase how these techniques can be

adapted and applied to meet the unique needs of different cultural and situational contexts faced by immigrants.

3. **Fundamentals for the adaptability and practical application of logotherapy** across diverse immigrant scenarios, considering the varying cultural backgrounds and the specific challenges these populations encounter. This evaluation seeks to highlight the flexibility and broad applicability of logotherapy as a significant tool in global mental health strategies.

For Paper 2, structured in three conceptual sections:

Paper 2.1: Literature Review on Mental Health Challenges Among International Students During COVID-19

- **Objective:** To thoroughly review existing literature on the mental health impacts of the COVID-19 pandemic on international students, focusing on anxiety and depression.

Paper 2.2: Designing the Logotherapy Intervention

- **Objective:** To develop a detailed, structured logotherapy intervention tailored to Iranian international students, based on the conceptual framework established in Paper 1.

Paper 2.3: Evaluation of the Logotherapy Intervention

- **Objective:** To implement and evaluate the effectiveness of the designed logotherapy intervention in an online setting, assessing its impact on reducing anxiety and depression among participants.

3.1.4 Hypotheses

For Paper 1:

1. **Hypothesis 1:** The newly proposed theoretical framework provides a viable and innovative approach for the application of logotherapy to immigrant populations, addressing their unique psycho-social challenges.

For Paper 2:

Paper 2.1:

1. **Hypothesis 1:** The systematic review will map the existing literature on mental health interventions for international students during pandemics and demonstrate a significant gap in effective therapeutic approaches, particularly highlighting the unique challenges that underscore the necessity for innovative approaches like logotherapy. This review illustrates the search and selection process, ensuring a rigorous and transparent review methodology.

1. Paper 2.2:

1. **Hypothesis 2:** The specifically designed logotherapy intervention will be feasible and well-received, indicating its practical applicability and robust theoretical grounding.

Paper 2.3:

1. **Hypothesis 3:** Participants undergoing the online group logotherapy will experience significant reductions in anxiety levels compared to those in the control group.

2. **Hypothesis 4:** Participants will demonstrate significant reductions in depression levels, affirming the effectiveness of the logotherapy intervention in improving mental health outcomes.

4 RESULTS

4.1. STUDY 1: "Foundations and Applications of Logotherapy to Improve Mental Health of Immigrant Populations in the Third Millennium".

Rahgozar, S., & Giménez-Llort, L. (2020). Foundations and Applications of Logotherapy to Improve Mental Health of Immigrant Populations in the Third Millennium. *Frontiers in Psychiatry*, 11, 451.

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Introduction to the Paper:

Immigration presents unique psychological challenges, particularly in today's global context, which heightens the mental health risks associated with displacement and cultural assimilation. This study explores the potential of logotherapy—a psychotherapeutic method that emphasizes an individual's search for meaning—to uniquely address the complex mental health needs of immigrants. By applying tailored logotherapy techniques, this research aims to validate the approach's effectiveness and demonstrate its applicability for enhancing mental resilience among immigrants who face severe stressors such as displacement, isolation, and acculturation.

Study 1 - Specific Objectives:

This research is grounded in the creation of a new conceptual framework that applies logotherapy to the mental health challenges faced by immigrant populations. The specific objectives were designed to:

- **Explore and substantiate the theoretical underpinnings of logotherapy**, particularly its relevance in treating mental health issues among immigrant populations. This includes focusing on the transformative potential of finding meaning and purpose in life amidst migration-related stressors.
- **Fundamentals for the effectiveness of specific logotherapy techniques**—paradoxical intention, dereflection, and Socratic dialogue—in ameliorating symptoms of depression and anxiety among immigrants. This assessment aims to showcase how these techniques can be adapted and applied to meet the unique needs of different cultural and situational contexts faced by immigrants.
- **Fundamentals for the adaptability and practical application of logotherapy** across diverse immigrant scenarios, considering the varying cultural backgrounds and the specific challenges these populations encounter. This evaluation seeks to highlight the flexibility and broad applicability of logotherapy as a significant tool in global mental health strategies.



Foundations and Applications of Logotherapy to Improve Mental Health of Immigrant Populations in the Third Millennium

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INTRODUCTION

Although migration is a natural phenomenon, a number of special conditions of this third millennium result in a rising number of populations exposed, worldwide, to the impact of risk factors for mental health associated to immigration and asylum. In this scenario, the vulnerability to distress and mental health problems such as depression, anxiety disorders and PTSD is increased in these immigrant populations due to the severity of traumatic experiences while struggling in their attempts to reach their destinations but also a poor capacity of immigrant/host to handle the situation once there. The risk for psychological and mental health problems worse with time, failure of expectancies, lack of knowledge of resources or lack of support, among other difficulties. Here, we analyzed the foundations and applications of logotherapy on immigrant mental health problems, showing the benefits that 'finding meaning and purpose in life' can have in these populations. Thus, among the interventions that urge to reduce depression and anxiety symptoms among older adult immigrants, we propose three logotherapy techniques, namely, paradoxical intention, dereflection and Socratic dialogue. After development and adaptation to the specific scenarios (populations/destinations) these logotherapy techniques can have a huge potential to become effective therapeutic strategies improving the mental health of the current immigrant populations facing misfortune in the Third Millennium (**Figure 1**).

MENTAL HEALTH PROBLEMS AMONG IMMIGRANTS IN THE THIRD MILLENIUM

Migration has been a natural phenomenon throughout the history of humanity resulting in a melting pot of civilizations, cultures and races. However, in the words of the UN Refugee Agency (1), the world is now witnessing the highest levels of displacement on record. The Global Migration Data Portal notes that in 2019 (2) the number of international people residing in a country other than their own reached 272 million (3.5% of the global population), 51 million more than in 2010. They also highlight an important issue: although many of these individuals migrate out of choice, many others migrate out of necessity. Thus, at the end of 2018, the number of globally forcibly

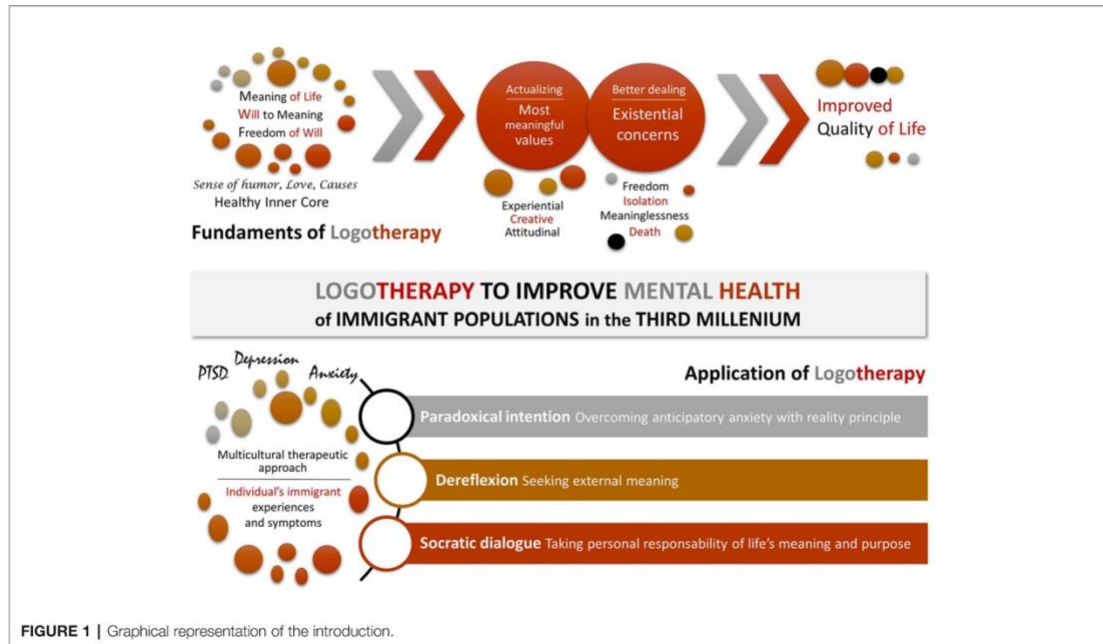


FIGURE 1 | Graphical representation of the introduction.

displaced people topped an unprecedented 70.8 million, including almost 26 million refugees, 3.5 million asylum seekers, and over 41 million internally displaced persons.

Immigrants face several life-threatening situations such as war, violence and persecution as well as losses during their journey, which hugely compromise their quality of life and mental health (3). These challenges are augmented by post-migratory stressors, such as tense asylum procedures, poverty, isolation, marginalization, fragmented social networks, discrimination and racism, acculturation, language barriers, poor access to healthcare and consequent compromised therapeutic approaches, among others (4–8). Coping with these challenges sometimes results in mental health problems and illnesses, particularly among low socio-economic backgrounds and those who are more vulnerable such as women, children, the elderly (9, 10). Immigrants experience injustices, human-instigated incidents of trauma, and subsequently respond with anger or anger-related responses. A study on Holocaust survivors and American war veterans showed that anger responses were crucial to their experiences (11). This trend was also shown in post-migration contexts, with anger responses developing independently of anxiety and depressive behavior. In these studies, morality was found to act both as protective and survival factors in the victims' anger behavior.

It's known that people with post-traumatic stress disorder (PTSD) - the most prevalent mental health problem in these immigrants - are also more likely to experience other mental problems, including anxiety, depression, and substance abuse disorder (12). Despite the well-researched effects of PTSD,

studies indicated that the contemporary PTSD models fail to capture the complexity, human variation, and international characters of the migration-related traumas (13–15). As such, the available interventions suggest the uncontrollability of these problems, thus threatening the overall quality of life of the patients and their communities. Nevertheless, immigrant populations remain highly under-diagnosed compared to the rest of the population, thus suffering from low treatment levels (16). Moreover, mental health interventions used are limited in several ways when dealing with the immigrant population (17). Limitations include lack of sufficient evidence on specific mental problems immigrant populations suffer from, therapeutic models developed from studies conducted in Europe and North America, assumptions that specific mental health therapies can be applied across all populations and non-consideration of cultural diversity in applying mental health problems (18–20). Though mental health risks among immigrants are well documented, there are still multiple gaps in understanding barriers to access and the use of mental health services among various groups of immigrants (21).

In order to develop an effective intervention model it is important to evaluate the patients' entire pre-migration, migration, and post-migration stages as they lead to different levels of risks to mental illnesses (22). Interventions should be based on hope and building confidence and optimism (23). They should also leverage the patients' spirituality, religion, and other cultural factors (24). Logotherapy is thus suggested to have the potential to assist patients in finding new meaning to life and cope effectively with the past and present stressful experiences (25).

FOUNDATIONS OF LOGOTHERAPY

Logotherapy is a meaning-based, value-centered psychiatric therapy developed from the works of Viktor Frankl in the early 2000s. He based logotherapy on the principle that the main motivational force of human beings is to find purpose or meaning in life. Frankl held that no other psychotherapy existed except the theory of mankind. Though he agreed that a man would never be free from all conditions, his experience of life inside the Nazi concentration camps made him believe that man has the capability of resisting and braving the most terrible conditions (26). Therefore, the primary premise of logotherapy is to help patients respond to suffering in a more meaningful way (27–29). This approach is based on the argument that mental health patients who found meaning can realize their potential and cope with their struggles in a more effective manner. Logotherapy assumes that every human person has a healthy inner core consisting of unique human and adaptive attributes such as sense of humor, love, and capacity to undertake different causes in life. The primary elements of logotherapy include the meaning of life, will to meaning as well as freedom of will (30). Based on these elements, the intervention aims at actualizing the most meaningful values to the patient meaning thereby that there is a purpose for human life (31). Will to meaning implies that the person should be able to access their unique human attributes and should be motivated to make personal sense of life, actions, and actual approach to life. Freedom of will refers to the recognition that the patients have choices and imperative to take responsibility for their choices (32).

A person discovers meaning when she/he actualizes personally meaningful values. For this purpose, the person must be committed to defining what they value i.e., experiential value, creative value, or attitudinal value (33). Experiential values refer to experiences, such as love relationships, which the person picks from their environment. Creative values include skills and behaviors associated with work, hobbies, and creative endeavors and usually earn tangible outcomes for the person (34). Attitudinal values are expressed in the manner one approaches life. Logotherapy focuses on the person's ability to make responsible decisions that are adaptive and consistent with their meaningful values (35). In this regard, logotherapy insists that despite the person's circumstances, life still has meaning. Finding meaning in one's life should, therefore, be their primary motivation. Furthermore, all human persons are free to find meaning to whatever they are experiencing in their lives (36). A person's psychological wellbeing would be compromised if their search for meaning is blocked or hindered (37). It is interesting to note that, currently, the transitions from biomedical to emergent recovery-oriented practices in mental health care are also person-centered approaches based on the premises that it is possible to adapt to a mental health condition and that personally centered meaningful goals will contribute to the recovery (38–40).

Most importantly, logotherapy approaches help the person to deal with their four existential concerns of freedom, isolation, meaninglessness, and death. According to Frankl (15, 41), freedom is an existential concern as every person should be

able to determine who and what they are, while isolation is the reality that there is a gap in existence between the person and others in the society. Addressing these existential concerns requires effective psychological or psychiatric interventions intended to empower people to find meaning in work, suffering, and relationships (42). Immigrants are free to pursue the meaning from their experiences and how they have responded to the experiences (43). Through this process, an immigrant having a mental health problem can find meaning to life that helps him/her to readjust their attitudes and perceptions of potentially adverse conditions in their life journeys. After finding meaning to these difficult situations, the person will emerge, stronger, safer and happier, thus leading a resilient improved quality of life (44).

APPLICATION OF LOGOTHERAPY TO TREAT IMMIGRANTS IN THE THIRD MILLENNIUM

Logotherapy is developed from a multicultural lens, thus making it potentially more effective when dealing with mental health problems affecting populations of immigrants from diverse backgrounds and places all over the world (45). It leverages on the specific person's beliefs and spirituality in finding meaning to their lives and enhancing their psychological wellbeing (46). Though logotherapy was initially designed to build faith and relationship with God, Crumbaugh and Henrion (47) found that it can be effectively applied to deal with different mental health problems, especially PTSD among immigrants who have endured difficult and stressful conditions, such as war and persecutions (48). Logotherapy follows a philosophy of phenomenological reality. Based on it, logotherapy suggests that the patient is an active participant in their treatment as he/she is an expert in their perceptions of their situations. Logotherapy not only focuses on building the relationship with the higher power but also recognizes that there is a vast variety of cultures around the world, and members of these cultures face distinct existential dilemmas of isolation and meaninglessness. Thus, Asian cultures dealt with existential meaninglessness and isolation as they work their reality towards Nirvana and ultimate transcendence (49).

Generally, logotherapy interventions are based on three primary techniques: paradoxical intention, dereflection, and Socratic dialogue. Paradoxical intention is an attempt to help clients face the situations they are most afraid of (50). This technique works by establishing the anticipatory anxiety that the immigrant is suffering from that is making it hard for them to move forward. Here, the immigrant is guided to overcome anxiety without the use of medications. On the other hand, dereflection is developed from the idea that when a person is suffering from mental health problems, such as anxiety, they are more likely to become hyper-reflective, thus focusing more on themselves and their perceptions (51). The dereflection technique helps to deflect internalization that manifests in perpetual self-examination and assist in seeking external

meaning to the experiences and behaviors (52). Lastly, the Socratic dialogue technique is an interview-based therapy where questions are asked in a manner that guides the client to take personal responsibility for their life's meaning and purpose (53). Questions asked here are designed to assist the patient in finding meaning to traumatic experiences (54). Usually, this technique involves a counsellor who helps in midwifing the knowledge and capability of the patients into their consciousness (55).

To tackle mental health problems that immigrants are suffering, there is need to recognize the diversity of the immigrants' populations, extent of mental health problems, and diagnosis and treatment limitations, among others before drawing intervention plan (56–58). In mental health intervention, it is important to consider all the three techniques of logotherapy as people possess different belief systems and will require different approaches to their problems (59). Thus, in the Connecticut in-patient veteran's use, mandatory community service to develop resilience failed in some patients as they increase anticipatory anxiety negatively affecting the road to wellness. (60). In this case, dereflection can be augmented with dialogues to help these patients acquire coping mechanisms that they can apply whenever they experience trauma (61).

In many cases, immigrants are traumatized by the experiences of terrorists attacking travelling buses (62). In such cases, paradoxical intention assists the patient to focus on the other times where he/she made it home safely without any incidences. The technique is based on a reality principle relying on patients understanding the reality of their expectations (63). This process helps the client in readjusting the expectations when going out next time. It is essential to note that many immigrants of violence and conflicts often face the problem of perpetual self-observation to rationalize their trauma regardless of where they come from. In this case, dereflection procedures are applied to help in

minimizing their vulnerability to thinking of the stressful events that may increase the chance of depressive disorders (64).

In conclusion, the effectiveness of logotherapy is demonstrated in helping patients to find meaning and purpose in their experiences and lives, and this can be applied to various mental health problems that immigrants face. Three techniques, namely paradoxical intention, dereflection, and Socratic dialogue, empower immigrants to accept their responsibility to live a meaningful life. Nonetheless, studies of logotherapy on immigrant populations are still scarce. We, therefore, suggest future studies should focus more on logotherapy applications and the development of effective therapy for diverse groups of immigrants.

AUTHOR CONTRIBUTIONS

Concept and review design: LG-L. Concept and review development: SR. Scientific discussions: LG-L and SR. Graphical Abstract: LG-L. Drafting manuscript: SR. Critical revision of manuscript: SR and LG-L. Approving final version of manuscript: SR and LG-L.

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REFERENCES

1. UNHCR. (2020). The United Nations Refugee Agency. <https://www.unhcr.org/> (2020).
2. Migration Data Portal <http://migrationdataportal.org>. International Organization for Migration (IOM) (2020).
3. Chang C, Ting C. *Migratory Loss and Depression among Adult Immigrants of Chinese Descent*. [dissertation/master's thesis]. [Chicago (IL)]: Loyola University Chicago (2015).
4. Hovy JD. Acculturative stress, social sufficiency, and suicidal ideation in Mexican immigrants. *Cult Diversity Etic Minor Psychol* (2000) 6:134–51. doi: 10.1037/1099-9809.6.2.134
5. Connolly CM. Clinical issues with same-sex couples: A review of the literature. *J Couple Relationship Ther* (2004) 3:3–12. doi: 10.1300/J398v03n02_02
6. Amri S, Bemak F. Mental Health Help-Seeking Behaviors of Muslim Immigrants in the United States: Overcoming Social Stigma and Cultural Mistrust. *JMMH* (2013) 7 (1). doi: 10.3998/jmmh.10381607.0007.104
7. Haynes C. Identity, transcendence and the true self: Insights from psychology and contemplative spirituality. *HTS Teolog Stud Theolog Stud* (2016) 72:1–9. doi: 10.4102/hts.v72i4.3455
8. Grace F. Unconditional Love in the Face of Hatred: Applications of a Timeless Teaching. *Int J Philosophy Theol* (2017) 5:5750–69. doi: 10.15640/ijpt.v5n2a1
9. Guttman D. *Finding meaning in life, at midlife and beyond: Wisdom and spirit from logotherapy*. Westport, CT: Praeger (2008).
10. Brunelli C, Bianchi E, Murru L, Monfomoso P, Bosisio M, Gangeri L, et al. Italian validation of the Purpose in Life (PIL) test and the Seeking of Noetic Goals (SONG) Test in a population of cancer patients. *Support Care Cancer* (2012) 20:2775–83. doi: 10.1007/s00520-012-1399-6
11. Stegger MF, Oishi L. Is a life without meaning satisfying? *J Gerontol Ser B* (2004) 54:125–35.
12. Schluckebier ME. (2013). *Dreams worth pursuing: how college students develop and articulate their purpose in life*. University of Iowa. doi: 10.17077/etd.q5gontba
13. Jahanpour Z, Sareghin SA, Hosseini FS, Tekiyee A. The study of group logotherapy effectiveness on self-esteem, happiness and social sufficiency in Teheranian girl teenagers. *J Med Sci* (2014) 7:477–89.
14. Graber AV. *Viktor Frankl's logotherapy: Method of choice in ecumenical pastoral psychology*. Lima, OH: Wyndham Hall (2003).
15. Frankl V. *Man's Search for Meaning. An Introduction to Logotherapy*. Boston, MA: Beacon Press (2006).
16. Nassif C, Schulenberg S, Hutzell RR, Rogina J. Clinical Supervision and Logotherapy: Discovering Meaning in the Supervisory Relationship. *J Contemp Psychother* (2009) 40:21–9. doi: 10.1007/s10879-009-9111-y
17. Mosalanejad L, KooLee AK. Looking at Infertility Treatment through The Lens of The Meaning of Life: The Effect of Group Logotherapy on Psychological Distress in Infertile Women. *Int J Fertil Steril* (2013) 6:224–31.
18. Sunhee C, Kunsook S, Bernstein, Soonhee R, Daniel C, Chen. Logo-Autobiography and Its Effectiveness on Depressed Korean Immigrant Women. *J Transcult Nurs* (2013) 24:33–42. doi: 10.1177/1043659612452005

19. Fabry DDS, Sheikh A, Selman M. Logotherapy can enrich cognitive behavioral therapy practice. *Int Forum Logother* (2007) 30:100–6.
20. Zotova N. Religion and Mental Health among Central Asian Muslim Immigrants in Chicago Metropolitan Area. *Migration Lett* (2018) 15:361–76. doi: 10.33182/ml.v15i3.358
21. Kwong K, Chung H, Cheal K, Chou JC, Chen T. Depression care management for Chinese Americans in primary care: a feasibility pilot study. *Community Ment Health J* (2011) 49:157–65. doi: 10.1007/s10597-011-9459-9
22. Toumisto MT, Roche JE. Beyond PTSD and Fear-Based Conditioning: Anger-Related Responses Following Experiences of Forced Migration—A Systematic Review. *Front Psychol* (2018). 9:2592 doi: 10.3389/fpsyg.2018.02592
23. Anagnostopoulos D. Communications of the European Society for Child and Adolescent Psychiatry. *ECAP* (2016) 25:119–22.
24. Savolaine J, Granello PF. The function of meaning and purpose for individual wellness. *J Humanistic Counsel Educ Dev* (2002) 41:178–89. doi: 10.1002/j.2164-490X.2002.tb00141.x
25. Karadems EC. Self-efficacy, social support and well-being the mediating role of optimism. *J Pers Individ Dif* (2006) 40:1281–90. doi: 10.1016/j.paid.2005.10.019
26. Marshall M, Marshall E. Logotherapy revisited, review of the tents of Viktor E. Frankl's Logotherapy. *Ottawa Institute of Logotherapy* (2012). 284 p.
27. Addad EM, Himi H. Logotherapy –Theoretical Aspects and Field Studies in Israel. *IJHSS* (2015), 5.
28. Schulenberg SE, Henrion RP. Logotherapy past, present, and future: A conversation with James C. Crumbaugh. *Int Forum Logother* (2005) 28:65–71. doi: 10.1037/a0014331
29. Robotmili S, Sohrabi F, Shahrak MA, Talepasand S, Nokani M, Hasani M. The Effect of Group Logotherapy on Meaning in Life and Depression Levels of Iranian Students. *Int J Advancement Counsel* (2015) 37:54–62. doi: 10.1007/s10447-014-9225-0
30. Chetan J, Jacob M, Marszałek, LaVerne A, Berkel, Adam B. An Empirical Investigation of Viktor Frankl's Logotherapeutic Model. *J Humanistic Psychol* (2014) 54:227–53. doi: 10.1177/0022167813504036
31. Schulenberg S, Hutzell RR, Nassif C, Rogina J. Logotherapy for clinical practice. *Psychother Theory Res Pract* (2008) 45:447–63. doi: 10.1037/a0014331
32. Schulenberg SE. Psychotherapy and movies: On using films in clinical practice. *J Contemp Psychother* (2003) 33:35–48. doi: 10.1023/A:1021403726961
33. Hutchinson GT, Chapman BP. Logo therapy -enhance REBT: an integration of discovery and reason. *J Contemp Psychother* (2005) 35:145–50. doi: 10.1007/s10879-005-2696-x
34. Melton AMA, Schulenberg SE. On the measurement of meaning: Logotherapy's empirical contributions to Humanistic psychology. *Humanistic Psychol* (2008) 36:1–14. doi: 10.1080/08873260701828870
35. Moreno MA, Jelenchick LA, Egan KG, Cox E, Young H, Gannon E, et al. Feeling bad on Facebook: depression disclosures by college students on a social networking site. *Depression and Anxiety*. Wisconsin, USA: School of Medicine and Public Health, University of Wisconsin, Madison (2011) 28:447–455. doi: 10.1002/da.20805
36. Antoniadis J, Mazza D, Brijnath B. Efficacy of depression treatments for immigrant patients: results from a systematic review. *BMCP* (2014) 14:176. doi: 10.1186/1471-244X-14-176
37. Devoe D. Viktor Frankl's Logotherapy: The Search for Purpose and Meaning. *Inquiries J Pulse* (2012) 4. Available at: <http://www.inquiriesjournal.com/a?id=660> (Accessed March 3, 2020).
38. Leamy M, Bird V, Le Boutillier C, Williams J, Slade M. Conceptual framework for personal recovery in mental health: systematic review and narrative synthesis. *Br J Psychiatry* (2011) 199(6):445–52. doi: 10.1192/bjp.bp.110.083733
39. Strand M, Gammon D, Ruland CM. Transitions from biomedical to recovery-oriented practices in mental health: a scoping review to explore the role of Internet-based interventions. *BMC Health Serv Res* (2017) 17(1):257. doi: 10.1186/s12913-017-2176-5
40. Winsper C, Crawford-Docherty A, Weich S, Fenton SJ, Singh SP. How do recovery-oriented interventions contribute to personal mental health recovery? A systematic review and logic model. *Clin Psychol Rev* (2020) 76:101815. doi: 10.1016/j.cpr.2020.101815
41. Frankl VE. *On the theory and therapy of mental disorders: An introduction to logotherapy and existential analysis*. DuBois JM, editor. New York: Brunner-Routledge (2004).
42. Haditabar H, Smaeeli Far N, Amani Z. Effectiveness of Logotherapy concepts training in increasing the quality of life among students. *Int J Psychol Behav Res* (2013) 2:223–30.
43. Spore AP. Meaning-centered love: Foundation of meaningful marriage. *Int Forum Logother* (2008) 31:96–102.
44. Costanza A, Prelati M, Pompili M. The Meaning in Life in Suicidal Patients: The Presence and the Search for Constructs. A Systematic Review. *Medicina* (2019) 55. doi: 10.3390/medicina55080465
45. Aguinaldo JL, De Guzman R. The effectiveness of logo-bibliotherapy on the depression of selected Filipinos suffering from Myasthenia Gravis. *AJNAS* (2014) 3:31–9.
46. Rahimiezhad A, Kazemi Z, Farahani H, Aghamohamadi S. Purpose in life and identity dimensions as predictors of maladaptive psychological aspects: a path analysis study. *Soc Behav Sci* (2011) 30:1009–13. doi: 10.1016/j.sbspro.2011.10.196
47. Crumbaugh JC, Henrion R. *The power of meaningful intimacy: Key to successful relationships*. Philadelphia, PA: Xlibris (2004).
48. Yalom ID. *When Nietzsche wept, a novel of obsession*. New York: Harper Perennial (2005).
49. Florez IA. (2017). On the Relationship between Meaning and Prejudice: Examining Self-Transcendence and Value-Behavior Consistency in a Sample of College Students University of Mississippi.
50. Pytell T. Transcending the Angel Beast: Viktor Frankl and Humanistic Psychology. *Psychoanalyt Psychol* (2006) 23:490–503. doi: 10.1037/0736-9735.23.3.490
51. Feldman DB, Snyder CR. Hope and the meaningful life: Theoretical and empirical associations between goal-directed thinking and life meaning. *J Soc Clin Psychol* (2005) 24:401–21. doi: 10.1521/jscp.24.3.401.65616
52. Cho S, Bernstein KS, Roh S. Logo-Autobiography and Its Effectiveness on Depressed Korean Immigrant Women. *J Transcult Nurs* (2013) 24:33–42. doi: 10.1177/1043659612452005
53. Julom AM, De Guzman R. The Effectiveness of Logotherapy Program in Alleviating the Sense of Meaninglessness of Paralyzed In-patients. *Int J Psychol psychol Ther* (2013) 13:357–71.
54. Segal DL, Coolidge FL, O'Riley A, Heinz BA. Structured and semi-structured interviews. In: Hersen M, editor. *Clinician's handbook of adult behavioral assessment*. Boston, MA: Elsevier Academic Press (2006). p. 121–44.
55. Morgan JH. Late-Life depression and the counseling agenda: exploring geriatric logotherapy as a treatment modality. *Int J psychol Res* (2012) 5:99–105.
56. Duba JD, Watts RE. Therapy with religious couples. *J Clin Psychol: Session* (2009) 62:210–23. doi: 10.1002/jclp.20567
57. Mendez M. *A life with meaning: Guide to the fundamental principles of Viktor E. Frankl's logotherapy*. Victoria, BC: Trafford (2004).
58. Niemiec RM, Wedding D. *Positive psychology at the movies: Using films to build virtues and character strengths*. Cambridge, MA: Hogrefe & Huber (2008).
59. Fahimeh M, Fard FD, Heidari H. Effectiveness of Logo Therapy in Hope of Life in the Women Depression. *Proc Soc Behav Sci* (2014) 159:643–6. doi: 10.1016/j.sbspro.2014.12.440
60. Schulenberg SE, Schnetzer LW, Winters MR, Hutzell RR. Meaning-Centered Couples Therapy: Logotherapy and Intimate Relationships. *J Contemp Psychother* (2010) 40:95–102. doi: 10.1007/s10879-009-9134-4
61. Somov PG. Meaning of life group: group application of logotherapy for substance use treatment. *J Specialists Group Work* (2007) 32:316–45. doi: 10.1080/01933920701476664
62. Tribe RH, Sendt K, Tracy DK. A systematic review of psychosocial interventions for adult refugees and asylum seekers. *JMH* (2019) 28:662–76. doi: 10.1080/09638237.2017.1322182
63. Eisenberg D, Golberstein E, Gollust SE. Help-seeking and access to mental health care in a university student population. *Med Care* (2007) 45:594–601. doi: 10.1097/MLR.0b013e31803bb4c1
64. McLafferty C. "Meaning until the Last Breath": Practical Applications of Logotherapy in the Ethical Consideration of Coma, Brain Death, and Persistent Vegetative States. In: Batthyány A, editor. *Logotherapy and*

Existential Analysis. Logotherapy and Existential Analysis, vol. 1 . (2016). p. 365–76.

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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4.2. STUDY 2: "Design and effectiveness of an online group logotherapy intervention on the mental health of Iranian international students in European countries during the COVID-19 pandemic"

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STUDY 2- Specific objectives

Overall Results Introduction:

This study evaluates the effectiveness of an online group logotherapy protocol tailored for Iranian international students, demonstrating a significant reduction in anxiety and depression symptoms. The overall effectiveness revealed that participants experienced an 89% improvement in mental health outcomes, emphasizing the profound impact of this tailored therapeutic approach.

Detailed Results Split into Three Papers:

Paper 2.1: Systematic Literature Review

- **Objective:** Conduct a systematic review to map the existing research on mental health interventions for international students during the COVID-19 pandemic.
- **Results:** The literature review highlighted a substantial lack of effective, culturally adapted mental health support specifically targeting the unique needs of international students. It established the groundwork for developing a targeted therapeutic intervention.

Paper 2.2: Design of the Therapy

- **Objective:** To create a unique logotherapy protocol that addresses the specific mental health challenges faced by Iranian international students.
- **Results:** A comprehensive therapy design was developed, integrating logotherapy principles with cultural sensitivity to address the psychological impacts of displacement and cultural isolation. The design included specific protocols like paradoxical intention, dereflection, and Socratic dialogue, structured to be delivered in an online format.

Paper 2.3: Application and Efficacy

- **Objective:** To apply the designed logotherapy protocol in an online setting and evaluate its effectiveness in reducing anxiety and depression among participants.

- **Results:** The application of this specially designed online group logotherapy showed a robust decrease in symptoms of depression and anxiety, with statistical analyses confirming an 89% effectiveness rate. The evaluation employed MANCOVA to substantiate the therapeutic impact, providing strong evidence of the intervention's success in improving mental health outcomes significantly.

Summary of Findings Across the Three Papers: The results from these structured studies demonstrate that online group logotherapy is not only feasible but highly effective in improving mental health among Iranian international students in Europe during a global pandemic. The systematic literature review justified the need for the intervention, the unique design ensured its cultural and situational appropriateness, and the rigorous efficacy evaluation confirmed its substantial impact on reducing mental health symptoms.



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Design and effectiveness of an online group logotherapy intervention on the mental health of Iranian international students in European countries during the COVID-19 pandemic

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Introduction: The secondary impact of the COVID-19 pandemic, leading to widespread psychological challenges, significantly strained international students' mental health. The present work sought to design and assess the efficacy of an Online Group Logotherapy Protocol, an existential psychology approach developed by Viktor Frankl, to reduce anxiety and depression levels among Iranian international students who were migrants/refugees in different European countries during the pandemic.

Methods: The study recruited 70 students (58 females and 12 males, age range 20–35, 6 EU countries) experiencing moderate levels of anxiety and depression as measured by the Beck Anxiety (BAI) and Depression (BDI) Inventories at pre-test. Half the participants received a short-term closed group intervention comprising 6 online sessions / 90 min of logotherapy. The control group received 6 sessions without specific psychological treatment.

Results: The designed logotherapy sessions consisted of 1. Fundamentals of logotherapy, 2. Existential concerns, 3. Introspection, 4. Self-awareness and growth, 5. Empowering and facing challenges, 6. Meaning of life and conclusions. Five logotherapy techniques were used: Socratic Dialog, Modification of Attitude, Paradoxical Intention, Dereflexion, and Logodrama. After the sessions, the post-test MANCOVA analysis showed a more potent effect of logotherapy reducing depression and anxiety than that elicited without intervention. The Eta coefficient suggests that the observed difference explains the effect of logotherapy with a strong power of 89%.

Conclusion: These findings unveil (1) the benefits of online group sessions despite the geographical distance and (2) the relevance of logotherapy effectively reducing depression and anxiety in such complex scenarios where psychological resources and cultural competencies are limited.

KEYWORDS

logotherapy, group psychotherapy, anxiety disorders, depressive disorder, international students, COVID-19 pandemic, migration

Introduction

The coronavirus pandemic (COVID-19) that broke out in China in late 2019 spread worldwide and ravaged many countries, upending millions of lives. People faced this dangerous and deadly pandemic for months as an unprecedented experience for human beings, and many of them lost loved ones due to the pandemic (1). In addition, a secondary impact of this pandemic was associated with people being forced to change their lifestyles due to severe limitations, shutting down many places, quarantine, isolation, wearing a mask, or confronting severe economic problems. Thus, the unprecedented scenario has profoundly impacted public health and individuals worldwide, presenting unique challenges and stressors (1–4). In the case of international students, where being a foreigner and young were factors of potential vulnerability (5–7), they experienced a significant strain on their mental health when confronting disruptions in their academic and personal lives. Thus, the pandemic has exacerbated feelings of homesickness, loneliness, and depression among this vulnerable group (8, 9). The mental health concerns among international students have been further exacerbated by the challenges posed by the pandemic, including travel restrictions, social isolation, and uncertainty about the future (10). In fact, international students not only confronted the same situation but were also far from their family and friends, enhancing their homesick risk factors and vulnerability to mental health problems. In the case of Iranian international students, their condition of living in different countries as migrants/refugees (11) was added to these factors, highlighting the pressing need for effective mental health interventions tailored to this population. Therefore, in the context of our research project on the use of ‘Logotherapy on Mental Health of Immigrants of the Third Millennium’ (12) and after further literature research on its effectivity, we designed an experimental clinical psychology study to assess the effectiveness of group logotherapy sessions on decreasing levels of anxiety and depression in these international students. For this purpose, a sample of Iranian international students living in European countries who suffered from moderate anxiety and depression during the COVID-19 pandemic was chosen among those who answered our call.

Logotherapy: an introduction to meaning-centered psychotherapy

Logotherapy, an existential psychotherapy approach developed by Viktor E. Frankl, is founded on the belief that the primary human drive is to find purpose and meaning in all circumstances (13, 14). The crux of logotherapy lies in the relentless pursuit of meaning, even in the face of suffering and adversity (15). The four key tenets of logotherapy are (1) Search for Meaning: Individuals are driven to seek meaning in life, in their actions, experiences, and relationships (13, 14); (2) Freedom of Will: Despite circumstances, individuals possess the freedom to choose their attitude toward situations and how they derive meaning from them (13); (3) Responsibility: logotherapy emphasizes taking responsibility for one’s life, choosing how to respond to situations, and thus ensuring a sense of purpose and meaning (13); (4) Suffering and Meaning: Suffering is seen as an opportunity to find meaning, to transform it

into a triumph of the human spirit through the search for purpose (16).

Among various therapeutic approaches, logotherapy, has gained recognition for its efficacy in promoting mental well-being (13, 14, 17). This approach has shown promise in alleviating mental health concerns and providing individuals with a sense of purpose and meaning (18). The core principles of logotherapy resonate with the needs of international students during these challenging times, offering a potential avenue for enhancing their mental health outcomes (17) in these current times restricted by limited clinical psychology resources, and cross-cultural competencies.

This study aimed to develop a protocol adapted to young adult migrants based on existing logotherapy research and investigate its effectiveness in reducing moderate anxiety and depression among Iranian international students during the COVID-19 pandemic. Thus, we first search for existing research protocols of logotherapy in such a clinical psychology field to build the one to be implemented. Then, we hypothesized that the participants receiving the logotherapy intervention when compared to a control group, would demonstrate a substantial impact on their mental health, affirming its potential as a vital therapeutic approach to deal with the uncertain current reality times in their complex cross-cultural clinical scenarios (15, 16). This hypothesis would be assessed by employing rigorous statistical analysis, specifically MANCOVA, which has shown significant effectiveness of logotherapy in similar contexts (16).

Methods

Design of the logotherapy intervention

During the inception of this study, the WHO declared COVID-19 as a global pandemic on March 11, 2020 (19). In response, Spain and various other countries implemented strict confinement measures to combat the advancing pandemic (20, 21). Even after a year, confinement measures persisted as an option to curb the virus, causing significant economic, social, and psychological impact (22). Forced confinement led to a range of negative emotions, including frustration, restlessness, sadness, fear, and anger (20, 23). These circumstances have necessitated the reorganization of domestic spaces and increased reliance on virtual systems, adding further stressors (24). The COVID-19 pandemic, like other epidemics, amplifies psychiatric morbidity and induces emotional distress (25).

The professional guidance to Iranian international students during the COVID-19 pandemic to find the meaning of life through interventions such as logotherapy could help them in this process (26). The design of the online group logotherapy intervention was based on two resources: (1) Our previous work (12) where the foundations and applications of logotherapy to improve mental health of immigrant populations were disclosed; (2) The design of the intervention was also based on existing research in the following databases: PubMed, Web of Science, Psychiatry Online, PsycINFO, and MEDLINE, between 2005 and 2021. The terms used to identify relevant studies included ‘logotherapy’, ‘mental health’ and ‘international students’. Only studies that met the following criteria were included in the analysis: (1) Research approach, i.e., quantitative, qualitative, or mixed, is explicitly or implicitly referred; (2) Treatment for mental health symptoms is comprehensively described; (3) The described treatment applied

logotherapy principles and techniques; (4) The participants were diagnosed with mental health problem symptoms, such as anxiety, depression, or PTSD. Papers addressing the topic in a general or specific way in other clinical contexts were excluded. During the progress of our project, a second search including 2022 and 2023 to compile emerging literature on the mental status of students during the COVID-19 pandemic was also done.

Effectiveness of the logotherapy intervention protocol

Participants

Iranian international students interested in participating in this study were recruited through the snowball method via unbiased online advertising on social media platforms including Facebook, Twitter, Instagram, and LinkedIn. Advertisements were designed to minimize potential bias, clearly stating the study's independence and the absence of any affiliation with the researchers. All of them were contacted to verify their profile and to further inform about the study. Rigorous measures, including a one-on-one clinical interview, were employed to verify the absence of disqualifying psychological conditions and treatments, thereby confirming eligibility based on the study's specific requirements as follows:

Inclusion Criteria: Iranian international university students aged between 20 to 35 years, residing in Europe. Individuals experiencing moderate levels of depression and anxiety, as determined by scores on the Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI), indicative of the secondary psychological impact of the COVID-19 pandemic.

Exclusion Criteria: Current use of any psychiatric medications. Engagement in any other form of psychotherapy at the time of the study. Diagnosis with other psychological disorders, specifically obsessive-compulsive disorder (OCD) or Post-Traumatic Stress Disorder (PTSD), to ensure sample homogeneity.

For this research, we developed a dedicated website where volunteers could find all the necessary information regarding participation requirements. After a brief interview (see below) and informed consent, they were redirected to this website to perform a pre-test screening to confirm suitability to be a participant.

Brief interview

The individual clinical interview was a single session conducted for each volunteer who met the initial screening criteria and completed the questionnaires. The interviews were conducted by the primary researcher, who is not only a clinical psychologist but also an experienced psychotherapist. These interviews were integral to the study design, serving to meticulously apply the inclusion and exclusion criteria. During the interviews, the researcher assessed the psychological status of each participant through a standardized set of questions tailored to identify the presence of moderate depression and anxiety related to the COVID-19 pandemic impact.

During the interview, a structured assessment was conducted, which included a review of the volunteers' medical and psychological histories. This process allowed for a careful consideration of each participant's suitability for the study, ensuring that their depression and anxiety were indeed attributable to the COVID-19 pandemic, as measured by the BAI and BDI, and not confounded by other factors.

Thus, these interviews allowed for the evaluation of other potential psychological conditions that could exclude participants from the study, such as the presence of OCD, PTSD, or current use of psychological medication. This thorough screening process ensured that all participants had a similar baseline related to the specific study parameters, thereby maximizing the internal validity of the research findings. The interview also provided an opportunity to clarify any ambiguities in the questionnaire responses and to establish a baseline for participants' mental health status.

Clinical instruments

The Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI) (27, 28) are self-report inventories widely used for their reliability and validity in measuring the severity of anxiety and depression. They were made available on our website platform in both English and the students' native language, Persian, to ensure comprehension and accuracy in responses. This bilingual approach was designed to accommodate the participants' language preferences and to enhance the reliability of the self-reported data by allowing students to express their mental health status in the language they are most comfortable with.

The Beck Anxiety Inventory (BAI), a 21-item self-report inventory, is specifically designed to assess the intensity of anxiety in clinical populations. Each item describes a common symptom of anxiety, and respondents are asked to rate how much they have been bothered by that symptom over the past week on a scale of 0 (not at all) to 3 (severely). The BAI has been validated across diverse populations and settings and demonstrates high internal consistency, with Cronbach's alpha typically ranging from 0.92 to 0.94, and a good test-retest reliability over 1 week with a correlation of 0.75 (28). The Beck Depression Inventory (BDI) consists of 21 items to assess the intensity of depression. It covers affective, cognitive, and somatic symptoms of depression. Like the BAI, respondents rate each item based on their experience over the past 2 weeks. The BDI is known for its high construct and content validity, with Cronbach's alpha coefficients regularly above 0.86, indicating excellent internal consistency. It also shows high concurrent validity with other measures of depression and a good test-retest reliability coefficient of around 0.93 for 1 week (27).

Study design

This study was conducted as a single-blind study (only the therapist and researcher were aware of the participants' group assignments). The intervention protocol finally consisted (see results section) of 6 group sessions where topics and logotherapy techniques were systematically incorporated, allowing for a comprehensive and targeted approach to addressing the mental health concerns of the participants. The control group received 6 sessions without specific psychological treatment. All participants were under the impression that they were receiving group logotherapy sessions, ensuring consistency in their experiences and minimizing potential biases in their responses.

Assessment of efficacy and follow-up on feedback on the online intervention

The individual clinical interviews before the sessions started served as an additional tool to gather important information about the participants' mental health status and experiences prior to the

intervention. The insights gathered from these interviews, along with the pre-test questionnaires and the follow-up on feedback, contribute to a comprehensive evaluation of the intervention's effectiveness.

To control the effectiveness of the logotherapy online intervention, pre-test and post-test questionnaires were administered to each participant. By comparing the responses before and after the intervention, changes in participants' mental health could be measured, providing insights into the impact of the logotherapy intervention.

The follow-up on feedback regarding the intervention involved recording the therapy sessions and transcribing the contents of interest. This allowed the researchers to analyze and evaluate the feedback provided by the participants. By reviewing the recorded sessions and analyzing the transcriptions, the researchers gained valuable insights into the participants' experiences and perceptions of the intervention.

Statistical analysis

The results were analyzed using the MANCOVA (Multivariate Analysis of Covariance) test and Student *t*-test comparisons. Assumptions were examined, including canonical correlation, homogeneity of variance-covariance matrices, homogeneity of interactive effects, and homogeneity of regression slopes. All four assumptions were met. Analyses were conducted using IBM SPSS Statistics software (version 26). Statistical significance was considered at $p < 0.05$.

Results

Systematic search on logotherapy and mental health

The PRISMA flow chart at four levels was as follows:

Level 1, Identification: Following these criteria, the search yielded 430 records (408 after duplicates were removed) as possible analysis sources. After reading the titles of the initially selected articles, 299 papers were included.

Level 2, Screening: After reviewing the abstracts, we identified 143 articles for further consideration. Within this group, 39 studies specifically focused on logotherapy and mental health issues. The remaining 104 articles examined the mental health of international students during the COVID-19 pandemic. Notably, there were no studies found that investigated the application of logotherapy to the mental health of international students in the context of the COVID-19 pandemic.

Level 3, Suitability: The number of full-text articles considered for eligibility was 112, including 29 on logotherapy and mental health and 83 on international students' mental health during COVID-19.

Level 4, Inclusion: Table 1 summarizes the 26 empirical studies illustrating the effectiveness of logotherapy in various contexts, including managing anxiety and depression (Table 1A, 17 studies) and illuminating the adverse impact of the COVID-19 pandemic on the mental health of international students (Table 1B, 9 articles). Most of these studies demonstrate positive outcomes in depressed patients, aligning with our hypothesis that logotherapy can be an effective psychotherapy for alleviating moderate anxiety and depression resulting from the secondary impact of the COVID-19 pandemic. For instance, Kim and Choi (42), showed in their research that, after

participating depressed older adults in logotherapy, they discovered their lives were unique and meaningful. Discovery of the meaning in life helped to reduce their depressive symptoms and to infuse their lives with vitality and confidence. Also, after completing the logotherapy, they wanted to do something meaningful for others. These outcomes have significant implications for preventing depression and improving psychological health in older adults with depressive symptoms, as well as in other countries. Despite few studies on international students, they shed light on the mental health challenges they faced due to the pandemic's secondary effects. The comprehensive analysis emphasized the urgent need for targeted interventions and support mechanisms to address their unique mental health concerns. In addition, during the progress of the current study, emergent literature supporting the critical status of mental health in international students was found, as summarized in Table 1C.

Design of the logotherapy intervention protocol

The logotherapy intervention was designed as short-term closed group sessions, with each session lasting 90 min throughout 6 sessions. The control group also had the same number and duration of sessions; however, no specific psychological treatment was administered to this group (82). The logotherapy intervention, topics, and tools are described below and summarized in Figure 1.

Session structure and objectives

The sessions were structured to facilitate engagement and meaningful participation of the participants. During Session One, essential introductory aspects of logotherapy were presented, including its founder, Victor Frankl, and its theoretical foundations. This set the stage for subsequent sessions, outlining a framework to navigate the complexities of participants' mental well-being.

- 1 Fundamentals of Logotherapy** – In Session 1, participants were introduced to the fundamental concepts of logotherapy and the formation of the group, engaging in Socratic Dialog and Modification of Attitude techniques to set the stage for meaningful discussions.
- 2 Existential concerns** – During Session 2, participants explored meaningful life goals and confronted their fears, applying Socratic Dialog, Modification of Attitude, Paradoxical Intention, and Dereflexion techniques to navigate these existential concerns.
- 3 Introspection** – Session 3 involved reflecting on personal achievements and artistic interests, utilizing Socratic Dialog, Modification of Attitude, Paradoxical Intention, and Dereflexion techniques to stimulate introspection.
- 4 Self-awareness and growth** – In Session 4, participants shared their life failures and identified their strengths and weaknesses, applying Socratic Dialog, Modification of Attitude, Paradoxical Intention, and Dereflexion techniques to promote self-awareness and growth.
- 5 Empowering and facing challenges** – Session 5 focused on facing challenges and engaging in a time travel exercise (Logo Drama), incorporating Socratic Dialog, Modification of

TABLE 1 Studies on the effectiveness of logotherapy on mental health [2005–2021; (A)], those warning on the critical status of the Mental Health of International Students during the COVID-19 Pandemic [2020–2021; (B)] and update of emerging literature (2022–2023) on this issue (C).

Authors	Scenario
A. Logotherapy and mental health (2005–2021)	
Schulenberg et al. (17)	Logotherapy for clinical practice.
Kang et al. (29)	The effects of logotherapy on meaning in life and quality of life of late adolescents with terminal cancer.
Smith (30)	Innovative applications of logotherapy for military-related PTSD.
Kang et al. (31)	Effects of logotherapy on life respect, meaning of life, and depression of older school-age children.
Mosalanejad and Khodabakshi (32)	Looking at infertility treatment through the lens of the meaning of life: The effect of group logotherapy on psychological distress in infertile women.
Delaviri et al. (33)	Logotherapy effect on anxiety and depression in mothers of children with cancer.
Jahanpour et al. (34)	The study of group logotherapy effectiveness on self-esteem, happiness, and social sufficiency in Tehranian girl teenagers.
Mohabbat-Bahar et al. (35)	Efficacy of group logotherapy on decreasing anxiety in women with breast cancer.
Mohammadi et al. (36)	Effectiveness of logotherapy in hope of life in the women depression.
Robotmili et al. (37)	The effect of group logotherapy on meaning in life and depression levels of Iranian students.
Soetrisno et al. (38)	The effect of logotherapy on the expressions of cortisol, HSP70, Beck Depression Inventory (BDI), and pain scales in advanced cervical cancer patients.
Baumel and Constantino (39)	Implementing logotherapy in its second half-century: Incorporating existential considerations into personalized treatment of adolescent depression.
Mortell (40)	Logotherapy to mitigate the harmful psychological effects of current events: A tool for nurses.
Bahar et al. (41)	Effectiveness of logotherapy on death anxiety, hope, depression, and proper use of glucose control drugs in diabetic patients with depression.
Kim and Choi (42)	The efficacy of group logotherapy on community-dwelling older adults with depressive symptoms: A mixed methods study.
Liu et al. (43)	Effects of logotherapy-based mindfulness intervention on internet addiction among adolescents during the COVID-19 pandemic.
Sun et al. (44)	The effects of logotherapy on distress, depression and demoralization in breast cancer and gynecologic cancer patients, a preliminary study.
B. Mental health of international students during the COVID-19 pandemic	
Lai et al. (45)	Mental health impacts of the COVID-19 pandemic on international university students, related stressors, and coping strategies.
Alam et al. (46)	Psychological outcomes and associated factors among the international students living in China during the COVID-19 Pandemic.
Kim and Kim (47)	Factors associated with mental health among international students during the COVID-19 pandemic in South Korea.
Lai et al. (48)	A phenomenological study on the positive and negative experiences of Chinese international university students from Hong Kong studying in the U.K. and U.S. in the early stage of the COVID-19 pandemic.
Matos Fialho et al. (49)	Perceptions of study conditions and depressive symptoms during the COVID-19 pandemic among university students in Germany: Results of the international COVID-19 student well-being study.
Negash et al. (50)	Worsened financial situation during the COVID-19 pandemic was associated with depressive symptomatology among university students in Germany: Results of the COVID-19 international student well-being study.
Song et al. (10)	COVID-19-related traumatic effects and psychological reactions among international students.
Van de Velde et al. (51)	The COVID-19 international student well-being study.
Yuan et al. (52)	Prevalence and predictors of anxiety and depressive symptoms among international medical students in China during COVID-19 pandemic.
C. Update on emerging literature on the critical status of the mental health of international students during the COVID-19 pandemic (2022–2023)	
Ifikhar et al. (8)	Prevalence of mental health problems among stranded international students during the COVID-19 pandemic
Maleku et al. (9)	Discrimination and mental health among international students in the US during the COVID-19 pandemic

(Continued)

TABLE 1 (Continued)

Authors	Scenario
Ke et al. (53)	The mental health of international university students from China during the COVID-19 pandemic and the protective effect of social support: A longitudinal study
Antwi et al. (54)	COVID-19 Pandemic and International Students' Mental Health in China: Age, Gender, Chronic Health Condition, and Having an Infected Relative as Risk Factors
Jagroop-Dearing et al. (55)	Perceived Stress and Wellbeing among International Health Students Who Were Essential Frontline Workers during the COVID-19 Lockdown in New Zealand
Russell et al. (56)	Changes in Mental Health Across the COVID-19 Pandemic for Local and International University Students in Australia: A Cohort Study
Mirshahi et al. (57)	Higher Prevalence of Food Insecurity and Psychological Distress among International University Students during the COVID-19 Pandemic: An Australian Perspective
Park and Shimada (58)	The impact of changing nonimmigrant visa policies on international students' psychological adjustment and well-being in the United States during the COVID-19 pandemic: a qualitative study
Dong et al. (59)	"I Have a Wish": Anti-Asian Racism and Facing Challenges Amid the COVID-19 Pandemic Among Asian International Graduate Students
Zhang et al. (60)	International student stressors and mental health during the COVID-19 pandemic: a qualitative study
Park and Shimada (58)	Mental health of international students in the United States during the COVID-19 pandemic and its relevant political climate: A descriptive cross-sectional study
Jamshaid et al. (61)	Pre- and Post-Pandemic (COVID-19) Mental Health of International Students: Data from a Longitudinal Study
Xiong et al. (62)	International students' perceived discrimination and psychological distress during the COVID-19 pandemic
Lynch et al. (63)	international student trauma during COVID-19: Relationships among mental health, visa status, and institutional support
Dong et al. (64)	Relationships between racial discrimination, social isolation, and mental health among international Asian graduate students during the COVID-19 pandemic
Abukhalaf et al. (65)	Evaluating the mental health of international students in the U.S. during the COVID-19 outbreak: The case of University of Florida
Lu et al. (66)	Association of Covid-19 pandemic-related stress and depressive symptoms among international medical students
Yu et al. (67)	Mental health conditions of Chinese international students and associated predictors amidst the pandemic
Olatunji et al. (68)	COVID-19: Academic, Financial, and Mental Health Challenges Faced by International Students in the United States Due to the Pandemic
Gao et al. (69)	The experiences and impact on wellness among international students in the United States during the COVID-19 pandemic
Reid et al. (70)	COVID-19 stress, social support, and coping in international students during the COVID-19 pandemic: a moderated analysis on anxiety and depression
Um MY et al. (71)	Mask wearing and self-harming thoughts among international students in the United States during COVID-19: The moderating role of discrimination
Chen et al. (72)	Fear of COVID-19 and the career maturity of Chinese international high school students: The mediating effect of the intolerance of uncertainty
Collins et al. (73)	Urban green space interaction and wellbeing - investigating the experience of international students in Berlin during the first COVID-19 lockdown"
Lin et al. (74)	Prevalence and correlates of depression and anxiety among Chinese international students in US colleges during the COVID-19 pandemic: A cross-sectional study
Spatafora et al. (75)	Fear of Infection and Depressive Symptoms among German University Students during the COVID-19 Pandemic: Results of COVID-19 International Student Well-Being Study
Al-Oraibi et al. (76)	Exploring the Psychological Impacts of COVID-19 Social Restrictions on International University Students: A Qualitative Study
Okeke (77)	Compared to COVID, HIV Is Nothing: Exploring How Onshore East Asian and Sub-Saharan African International Students in Sydney Navigate COVID-19 versus BBVs/STIs Risk Spectrum

(Continued)

TABLE 1 (Continued)

Authors	Scenario
Rekenyi et al. (78)	The Effects and Differences of Social Support, Depression, and Vital Exhaustion during the COVID-19 Pandemic among International and Domestic University Students
Lu et al. (66)	Analysis of Influencing Factors of Psychological Intervention on International Students in China after COVID-19: Hainan Province, China
Yuan et al. (52)	Comorbid anxiety and depressive symptoms and the related factors among international medical students in China during COVID-19 pandemic: a cross-sectional study
Tan et al. (79)	Influencing Factors of International Students' Anxiety Under Online Learning During the COVID-19 Pandemic: A Cross-Sectional Study of 1,090 Chinese International Students
Tran et al. (80)	From Academic Resilience to Academic Burnout among International University Students during the Post-COVID-19 New Normal: An Empirical Study in Taiwan
Andreatta et al. (81)	Context-Dependent Responses to the Spread of COVID-19 Among National and International Students During the First Lockdown: An Online Survey

Attitude, Paradoxical Intention, Dereflexion, and Logodrama techniques to empower participants and encourage continued daily relaxation practices.

- 6 *Meaning of life and conclusions* – During Session 6, participants practiced Logodrama and articulated the unique meaning of life, utilizing all five techniques with a particular focus on Logo Drama. The session provided a conclusion for all preceding sessions, effectively concluding the therapy series.

Techniques and tools

Five logotherapeutic techniques were employed throughout the sessions: Socratic dialog, Paradoxical intention, Dereflexion, modification of attitude, and Logodrama. These techniques were instrumental in encouraging active reflection, challenging assumptions, and fostering a shift in participants' perspectives, essential for their mental health improvement.

- 1 *Socratic Dialog*: Engaging individuals in thought-provoking dialogs to facilitate self-reflection and a deeper understanding of their values and meaning (15).
- 2 *Modification of Attitude*: This technique involves altering one's perspective and attitude toward an unavoidable situation, emphasizing the power of choice in interpreting the situation positively (13).
- 3 *Paradoxical Intention*: Encouraging individuals to confront their fears or anxieties often diminishes the fear's hold over them (17).
- 4 *Dereflexion*: Shifting focus from one's problems by engaging in activities that direct attention away from the problem, aiding in achieving a healthier perspective (17).
- 5 *Logodrama*: Logodrama employs dramatic enactments or role-playing to explore and understand personal values, conflicts, and potential meanings in life (15).

Tasks and reflection

Tasks assigned in each session were meticulously designed to encourage self-reflection and introspection, aiming to bring out

meaningful insights from the participants. These tasks ranged from identifying personal values and fears to envisioning life goals within specific timeframes. Addressing these existential dimensions encouraged participants to confront their fears and anxieties, facilitating a transformative experience.

Long-Term Impact – The longitudinal nature of the sessions, reinforced by subsequent session tasks, emphasized continuity and practice, nurturing a sustained engagement with the principles of logotherapy. By envisioning and setting personal goals, acknowledging strengths and weaknesses, and engaging in therapeutic introspection, participants were better positioned to manage the challenges posed by the pandemic and enhance their mental well-being over time.

Empowering the Participants – The final session incorporated the powerful technique of logo drama, enabling participants to narrate their life journey, and emphasizing personal growth and resilience. This exercise aimed to empower the participants, highlighting their unique life narratives, thereby fostering a sense of purpose and meaning amidst adversities.

Sample of participants

Recruitment – In response to our recruitment advertisement, over 130 individuals expressed interest in participating in the study. Following a thorough review process against the established inclusion and exclusion criteria, approximately 80 volunteers were selected to proceed to the clinical interview stage. The remaining 50 or so individuals were not selected for various reasons such as not meeting the specific research criteria, being outside the age range, using psychological medications, or undergoing other forms of psychotherapy.

Dropouts and treatment adherence – Adherence to the treatment protocol was a critical inclusion criterion for analysis. Consequently, only data from those who attended all six 90-min sessions and fully participated in the required exercises and homework was included. This process ensured that the treatment effects measured were based on complete participation, providing a clear and undiluted assessment of the intervention's effectiveness.

Final sample of participants – Finally, this study involved 70 participants who suffered from moderate anxiety and depression according to their pre-tests. Three experimental sets (Set 1: December/

2021–January/ 2022; Set 2: March–April/2022; Set 3: November–December/2022) were needed to achieve the total sample size. In each set, the participants were randomly divided into two groups, counterbalanced per sex/gender. The final composition was logotherapy group ($n = 35$) and the Control group ($n = 35$).

Effectiveness of the logotherapy intervention protocol in Iranian international students

Participants living in 6 different countries (Spain, UK, France, Austria, Germany and Italy) were randomly divided into the control ($n = 35$, 6 males and 29 females) and the logotherapy group ($n = 35$, 5 males and 30 females) balanced per sex. The age range for participants ranged from a minimum age of 20 to a maximum age of 35, showcasing a focused span of ages within the study. The mean scores for post-anxiety and post-depression were calculated for the overall sample and further stratified by group and per gender (Figure 2).

Multivariate analysis of covariance indicated a significant effect of 'treatment group' on anxiety and depression scores ($F = 204.084$, 2 dg, $p < 0.001$), with an eta squared coefficient (Pillai's trace, $\eta^2 = 0.870$) indicating that the observed difference accounted for 89% of the variance in the logotherapy intervention. In addition, the univariate analysis of covariance indicated that logotherapy significantly affected anxiety ($F = 267.490$, 1 dg, $\eta^2 = 0.812$, $p < 0.001$) and depression ($F = 208.810$, 1 dg, $\eta^2 = 0.771$, $p < 0.001$) scores in the logotherapy group when compared to the respective scores in the control group.

Figure 3A illustrates the anxiety and depression scores among control and logotherapy group participants before (Pre-test, both between groups differences were *n.s.*) and after (Post-test, Anxiety, $t = 12.3048$, 68 df, $p < 0.0001$ vs. control group; Depression, $t = 12.0980$, 68 dg, $p < 0.0001$ vs. control group) group sessions. Post-test results are also depicted per males and females in the table (Figure 3C, Anxiety, Males: $t = 4.2610$, 9 df, $p = 0.0021$ vs. control males; Females: $t = 11.6594$, 57 df, $p < 0.0001$ vs. control females; Depression, Males: $t = 4.8520$, 9 df, $p = 0.0009$ vs. control males; females: $t = 10.9379$, 57 df, $p < 0.0001$ vs. control females). No gender differences were found in the efficiency of logotherapy (Figure 3B).

Discussion

Logotherapy: an introduction to meaning-centered psychotherapy

Logotherapy, an existential psychotherapy approach developed by Viktor E. Frankl, is founded on the belief that the primary human drive is to find purpose and meaning in all circumstances (13, 14). The crux of logotherapy lies in the relentless pursuit of meaning, even in the face of suffering and adversity (15). The four key tenets of logotherapy are (1) Search for Meaning: Individuals are driven to seek meaning in life, in their actions, experiences, and relationships (13, 14); (2) Freedom of Will: Despite circumstances, individuals possess the freedom to choose their attitude toward situations and how they derive meaning from them (13); (3) Responsibility: logotherapy emphasizes taking responsibility for one's life, choosing how to respond to situations, and thus ensuring a sense of purpose and

meaning (13); (4) Suffering and Meaning: Suffering is seen as an opportunity to find meaning, to transform it into a triumph of the human spirit through the search for purpose (16).

Logotherapy and improvement of mental health

Logotherapy has been widely applied in clinical practice to help individuals overcome mental health challenges. However, some critics argue that while logotherapy's focus on meaning is valuable, it may oversimplify the complexities of mental health issues (83). The literature review presented a substantial body of evidence supporting the positive effects of logotherapy on different mental health outcomes. Here, we discuss the notable findings and trends observed in these studies:

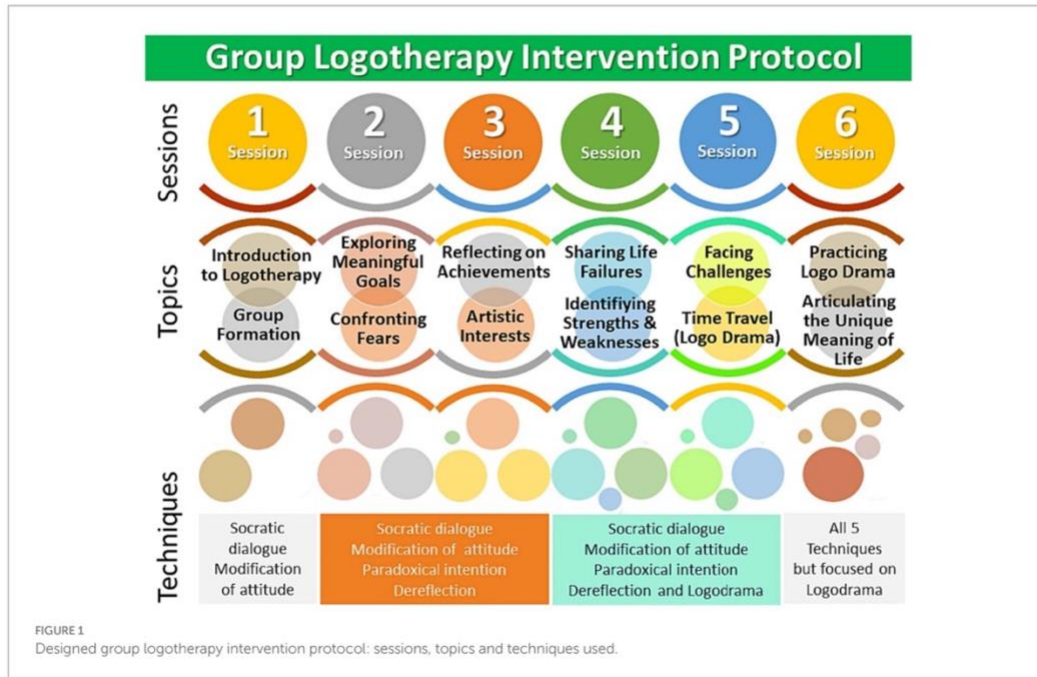
The tailored application of logotherapy to address unique circumstances highlights its versatility and adaptability. The existential dimensions addressed by logotherapy resonate with individuals dealing with life-threatening illnesses and challenges, offering a sense of purpose and meaning. Thus, logotherapy has effectively addressed anxiety and depression across various existential scenarios such as mothers of children with cancer and individuals with advanced cancer (33, 37, 84); managing distress, demoralization, and hopelessness in cancer patients (44, 85); reducing existential loneliness and anxiety about death (85), enhancing hope of life (36), and improving self-esteem and happiness among teenagers (34). In other specific populations, such as diabetic patients with depression, logotherapy has effectively reduced death anxiety, increased hope, and improved medication compliance (41). The potential of logotherapy in enhancing spiritual well-being is also evident as shown in male cardiovascular patients were also reduced their anxiety (86). This indicates that logotherapy transcends the psychological domain and extends to the spiritual realm, promoting holistic well-being.

Logotherapy's efficacy is not limited to physical health conditions; it extends to mental health challenges various demographics face. For instance, group logotherapy has benefited community-dwelling older adults with depressive symptoms Kim and Choi (42), adolescents struggling with internet addiction (43) or cyberbullied during the COVID-19 pandemic targeting depressive symptoms (87). These findings suggest the potential of logotherapy in addressing contemporary mental health issues.

Overall, the extensive body of research underscores the positive effects of logotherapy on mental health. From reducing anxiety and depression to enhancing existential well-being and spiritual dimensions, logotherapy stands as a promising psychotherapeutic approach for improving mental health outcomes across diverse populations.

Mental health problems among international students during the COVID-19 pandemic

The COVID-19 pandemic has had a profound impact on global mental health, especially among international students. Recently, emergent studies are providing a comprehensive view of the mental health struggles experienced by international students during the



pandemic. Notably, the prevalence of mental health problems, including anxiety and depression, among this demographic has been a significant concern. Studies such as those by Iftikhar et al. (8) and Kim and Choi (42) shed light on the prevalence of mental health problems, highlighting the need for targeted interventions. Additionally, factors exacerbating mental health issues among international students have been identified. Discrimination has emerged as a prominent factor affecting international students' mental health during the pandemic, as evidenced by the study of Maleku et al. (9). Furthermore, the study by Antwi et al. (54) highlights how factors such as age, gender, chronic health conditions, and having an infected relative can contribute to mental health challenges. Moreover, the interplay between social support and mental health has been explored. The study by Ke et al. (53) underscores the protective effect of social support on international students' mental health. Conversely, studies like Reid et al. (70) demonstrate that lack of social support can exacerbate anxiety and depression during the pandemic.

The experiences and effects of the pandemic and related stressors on international students vary across different contexts. Studies such as those by Um et al. (71) and Yuan et al. (88) provide insights into how discrimination, fear of infection, academic challenges, and social restrictions impact mental health outcomes. Additionally, some studies like Collins et al. (73) explore the role of environmental factors, such as access to green spaces, in mitigating stress among international students.

In summary, the mental health of international students during the COVID-19 pandemic is a multifaceted issue influenced by various factors including discrimination, social support, fear of infection, and academic challenges. Addressing these challenges requires tailored

interventions considering the unique circumstances of international students, thus highlighting the importance of research in informing targeted mental health support.

Efficacy of group logotherapy sessions enhancing the mental health of Iranian international students during the COVID-19 pandemic

The group logotherapy sessions conducted in this study aimed to address the mental health challenges faced by Iranian international students due to the secondary impact of the COVID-19 pandemic. The purpose was to mitigate moderate anxiety and depression, prevalent among this demographic sample, by employing the designed logotherapeutic intervention. In the results section and here, several key concepts of the study and intervention are dissected and discussed.

Interpretation of Results – The MANCOVA analysis revealed a significant effect of logotherapy on anxiety and depression, supported by an impressive η^2 value of 0.89. This indicates a substantial enhancement in mental health among participants, affirming the potency of logotherapy as an intervention.

Connection to Hypothesis – The notable impact of logotherapy on anxiety and depression corroborates our initial hypothesis, emphasizing its effectiveness in reducing mental health challenges linked to the pandemic's secondary impact. These findings underscore logotherapy's potential as a valuable psychotherapeutic approach in addressing mental health issues during challenging times like the pandemic.

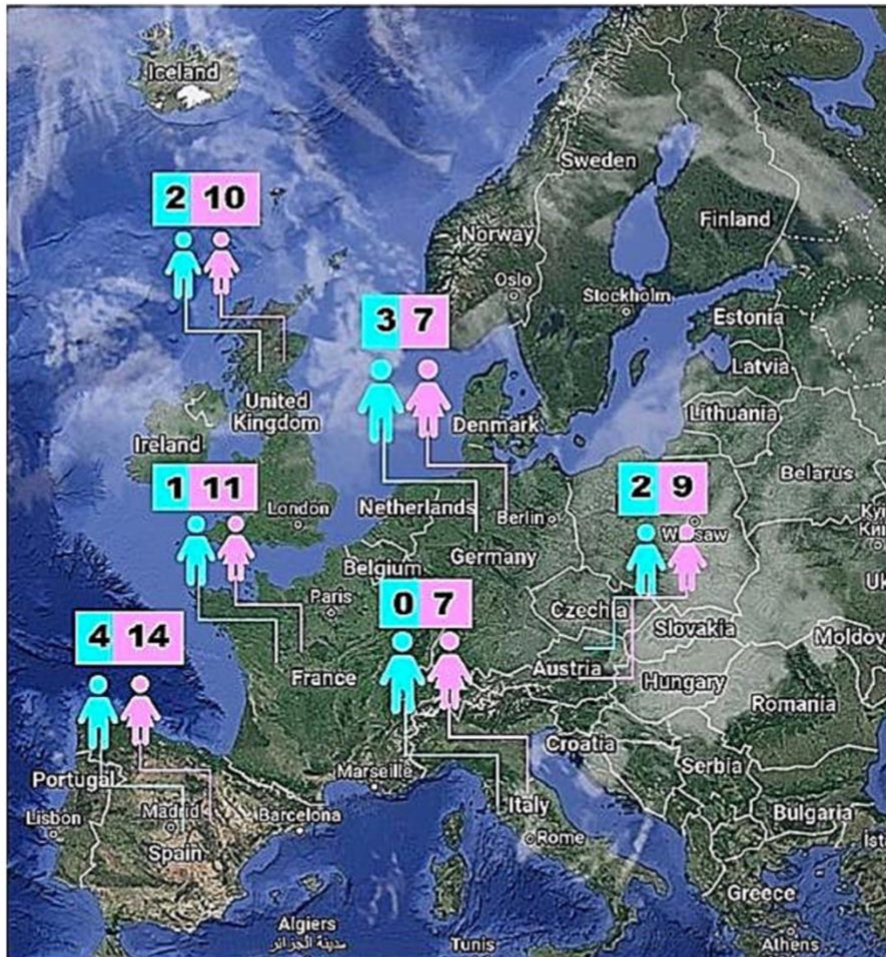


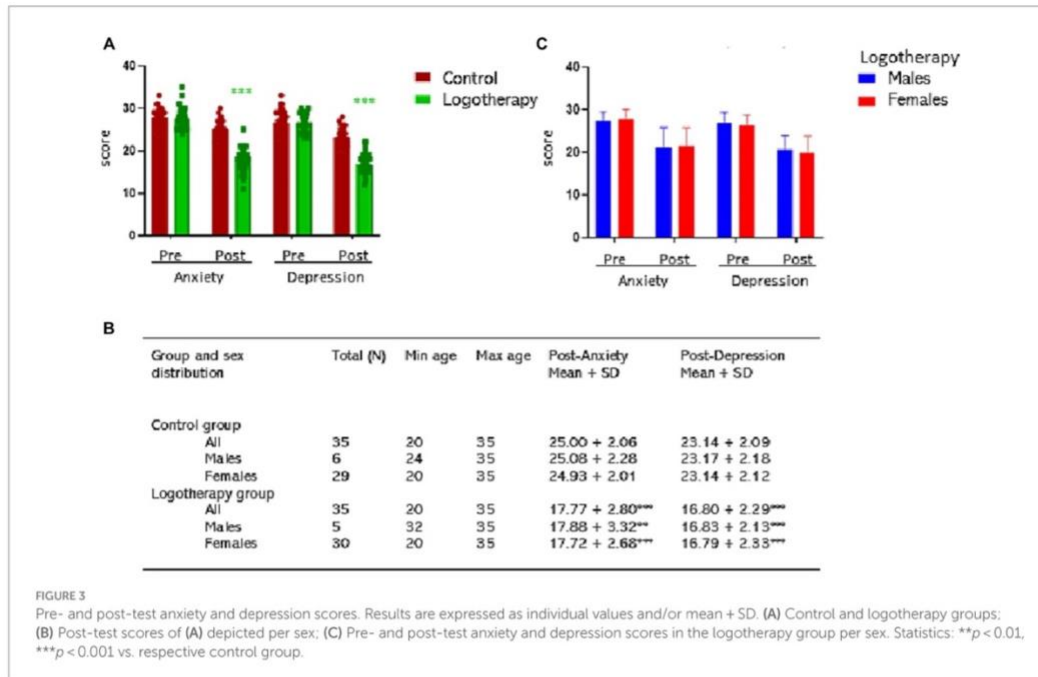
FIGURE 2 Geographical distribution per sex of Iranian international student participants in Europe during the COVID-19 pandemic.

Comparative Analysis – Aligning with our initial hypothesis, which postulated logotherapy’s effectiveness in alleviating anxiety and depression exacerbated by the pandemic’s secondary impact, this study underscores the significance of logotherapy in the mental health domain. The empirical evidence presented here stands in harmony with existing literature, corroborating the positive influence of logotherapy on mental health, as demonstrated by Adhiya-Shah (89), Längle and Klaassen (90), Lewis (91), and Martínez and Flórez (92). Our study further adds to this body of evidence, emphasizing its efficacy within the context of Iranian international students during the pandemic.

Control group – The control group did not receive any specific psychological therapy. Despite the study’s single-blind design, where participants were unaware of their group assignment, we maintained

the integrity of the control condition. In the first session, after participants were acquainted, the therapist engaged the group in a discussion about Victor Frankl’s life story, especially his experiences during the Holocaust. While the conversation initially centered on Frankl’s life, it gradually shifted to more general yet engaging topics. For example, we posed hypothetical scenarios to the participants, such as what choices they might make if they had one billion dollars. These discussions were designed to be thought-provoking and to foster group interaction without providing any therapeutic intervention.

It is important to note that these sessions were structured to control for participant engagement and therapist contact time without introducing therapeutic elements. This approach was taken to ensure that any differences observed between the control and treatment groups could be attributed to the logotherapy intervention itself rather



than to nonspecific factors such as group cohesion or discussion on meaningful topics.

Critical Mental Health Status of the International Students – The comprehensive review of the literature on the mental health of international students since the beginning of the COVID-9 pandemic, when the current project was started, was corroborated by an important number of emerging studies that put efforts to provide scientific evidence of their critical status. As summarized, various aspects of the mental health of international students during the COVID-19 pandemic have been reported worldwide (8, 9, 53) (more recorded in Tables 1B,C).

Gender Differences and Implications Although, in our study, the analysis result of reducing anxiety and depression in both female and male were almost similar, in delving into the results of this study, it is essential to address the gender disparity among participants and its implications on mental health. Our research revealed a substantial representation of females (84%) in the study compared to males (16%) (33, 35). This aligns with existing research indicating a higher prevalence of mental health challenges, including anxiety and depression, among females. Notably, females were more inclined to engage in therapy groups and express themselves openly during both individual and group sessions (34, 87). The prevalence of females participating in the logotherapy group underscores the importance of tailoring interventions to address the specific mental health needs of this demographic.

Age-Related Insights and logotherapy's Efficacy – Participants, aged 20–35, brought a range of life experiences to the group logotherapy sessions. Their varied perspectives, shaped by the shared challenge of the COVID-19 pandemic, enhanced group dynamics and supported

a rich therapeutic dialog. This diversity proved beneficial, allowing participants to share and leverage coping strategies, which enriched the intervention's effectiveness without being hindered by age differences. Such dynamics illustrate the adaptability of logotherapy across life stages and its potential to inform on how age-related factors contribute to therapy's impact.

Clinical Effectiveness and Participant Transformations – The logotherapy sessions yielded outcomes that surpassed expectations. Participants reported significant personal revelations that aided in alleviating anxiety and depression, resonating with literature that documents similar therapeutic successes Kim and Choi (42). Clinically, these sessions fostered a sense of purpose and self-awareness among participants, empowering them to face life's challenges more robustly. The process validated logotherapy's effectiveness, particularly for our demographic of Iranian international students in Europe during the pandemic.

Personal Growth and Meaning Reconstruction – Participants' accounts of personal transformation highlighted the profound impact of logotherapy. Many described a shift from existential despair to discovering personal significance and purpose, a finding consistent with the core principles of logotherapy. These narratives underscore the therapy's power in catalyzing a redefinition of life's meaning, even amidst adversity, providing strong clinical support for its use as detailed in existing literature. For example, one participant initially expressed a sense of nihilism, stating in the first session that "life is meaningless and not valuable." However, by the end of the program, her viewpoint had shifted dramatically. She recognized that her initial belief was a reflection of her despair and reported that she had found profound and personal meanings in her life, declaring it to be valuable

and purposeful. Similar sentiments were echoed by the majority of participants.

Impact of Context and Online Sessions – Furthermore, as this study involved Iranian international students dispersed across various European countries, it is crucial to acknowledge the impact of different contextual and country-specific scenarios on the effectiveness of logotherapy (33, 93). Despite the varied contexts, logotherapy consistently proved effective in alleviating mental health challenges among the participants. Particularly noteworthy was the utilization of online sessions for group therapy, overcoming physical barriers and enabling individuals to engage in therapy despite being alone in a foreign country (87, 93). This highlights the adaptability and accessibility of logotherapy, especially in the context of the COVID-19 pandemic.

Online Group Therapy – The group therapy sessions in this study were conducted online, a mode of intervention that has been gaining prominence in recent times (87). Online therapy has proven to be effective and accessible, overcoming geographical barriers and allowing individuals to participate in therapy sessions from the comfort of their own space (40). This online approach was especially relevant for our study, where participants were Iranian international students located across different European countries, emphasizing the significance and versatility of remote interventions.

Strength of the current study – The comparison with existing literature is essential in highlighting the novelty and importance of our research. While our study contributes to this body of research, it stands out with its unique characteristics: (1) While there are studies that explore mental health in international student populations, our research fills a gap by explicitly focusing on the unique experiences of Iranian international students during the COVID-19 pandemic. Our study specifically targets Iranian international students who are migrants or refugees in European countries, a population that faced distinct challenges during the pandemic with additional stressors due to being young immigrants/refugees. This scenario can be more significant for females (11). Therefore, inclusion of predominantly female participants in our study population is noteworthy, as it sheds light on the mental health challenges this specific demographic population faces. (2) The outcomes of the present study underscore the significance of logotherapy as a promising approach for enhancing psychological well-being in complex scenarios. While contributing to the growing literature on mental health interventions for international students during the pandemic, the present work designed, implemented and assessed the effectiveness of an online logotherapy intervention, providing a valuable avenue for addressing the mental health concerns of migrant and refugee students. (3) Additionally, our study incorporates a logotherapy intervention delivered through online platforms, a distinctive approach compared to previous studies. The use of online platforms allows for overcoming geographical barriers, isolation and loneliness and enhances accessibility to mental health interventions for this population. It is also important to note that, while in this study the interventions were offered for free, in any other case online sessions can help to reduce costs. To the best of our knowledge, few previous studies have explored logotherapy specifically in an online context for international student populations. This integration of logotherapy principles and techniques via online platforms provides a novel and innovative approach to addressing mental health concerns in this

student population during challenging circumstances under a discreet access format.

Replication of the Study – To replicate the study and achieve comparable results, the group protocol requires an individual who is both a trained psychotherapist and a trained Logotherapist. The delivery of the logotherapy intervention requires not just familiarity with its principles but also the ability to apply them therapeutically, which necessitates specific training in logotherapy techniques. In addition, the psychotherapist's broader clinical skills are essential for managing group dynamics and addressing any clinical issues that may arise during the sessions.

Limitations – Acknowledging limitations is crucial for comprehensively understanding the study's scope. While appropriate for this study, the sample size may somewhat constrain the generalization of the results to a broader population. Additionally, variations in cultural contexts among international students could introduce potential biases and influence the study's outcomes. These limitations highlight the need for cautious interpretation and encourage future research to address potential biases and contextual factors.

Practical applications – For these results to be translated into real-world strategies and interventions to support the mental well-being of Iranian international students in Europe, identifying actors, niches and resources is essential. We consider that first actors should be universities, as the educational but also social niche of these subjects, and the ones with immediate and stronger capacity to help them counteract stigma and loneliness. Conversely, the university community can be seen as a precious change source. Some universities already have programs to care for the mental health of (any) students, providing external (but also internal) professional support, and they have experienced a worrisome increase in demand in this new COVID-19 pandemic era. Specific programs for their international students, mostly immigrants/refugees, will likely be driven by their associated NGOs in collaboration with National CAR (Committees for Refugee Assistance). For instance, Universitat Refugi (Refugee program) from Fundació Autònoma Solidària, Universitat Autònoma de Barcelona, and Catalonian CAR (94) have specific 'welcome-training-awareness-network' social programs aimed to boost the university's capacity to offer assistance and uphold the rights of migrants/refugees. Similarly, at the international level, UNICA (Institutional Network of Universities from the Capitals of Europe) also has the 'Academic Refuge' (95), a strategic partnership to promote core academic values and welcome refugees and threatened academics to European campuses, with granted financial support from the European Commission under the Erasmus+ program managed by Norwegian National Agency. However, specific mental health programs should complement social programs if they want to address the current gap that exists between academic/social and clinical support.

Future directions – To build on this study, future research could explore tailored applications of logotherapy in various cultural contexts, incorporating insights from the referenced literature. As suggested by Zhang et al. (60), investigating the long-term effects and sustainability of logotherapy interventions is essential for a comprehensive understanding of its lasting impact on mental health. Moreover, comparative studies could assess the effectiveness of logotherapy in diverse populations, as proposed by Adhiya-Shah (89), to further validate its potential as a universal mental health intervention.

Conclusion

In conclusion, in the present study, we designed and demonstrated the efficacy of an online logotherapy intervention reducing the anxiety and depression of Iranian international students who are migrants or refugees in Europe during the COVID-19 pandemic.

Our study contributes to the existing literature on the mental health of international students in this challenging period and unveils two key findings: (1) The benefits of online group sessions, highlighting the effectiveness of delivering interventions despite geographical distance, (2) The relevance of logotherapy in effectively reducing depression and anxiety in the unique and challenging contexts where psychological resources and cultural competencies are limited. Through targeted interventions and structured sessions incorporating logotherapy techniques, such as paradoxical intention and modification of attitude, participants were encouraged to reflect, set goals, and envision a meaningful life. The sessions fostered introspection, self-awareness, and empowerment in participants, contributing to ameliorating moderate depression and anxiety prevalent within this population.

The findings of the present research advocate for integrating logotherapy into mental health interventions, offering a promising avenue for enhancing the well-being of individuals grappling with psychological challenges.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by CEEAH Comissió Ètica Experimentació Animal i Humana, Universitat Autònoma de Barcelona. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

References

- Heymann DL, Shindo N. COVID-19: what is next for public health? *Lancet*. (2020) 395:542–5. doi: 10.1016/S0140-6736(20)30374-3
- Yi Y, Lagniton PNP, Ye S, Li E, Xu RH. COVID-19: what has been learned and to be learned about the novel coronavirus disease. *Int J Biol Sci*. (2020) 16:1753–66. doi: 10.7150/ijbs.45134
- Zhang C, Yang L, Liu S, Ma S, Wang Y, Cai Z, et al. Survey of insomnia and related social psychological factors among medical staff involved in the 2019 novel coronavirus disease outbreak. *Front Psych*. (2020) 11:306. doi: 10.3389/fpsy.2020.00306
- Giménez-Llort L, Torres-Lista V, Oghagbon EK, Pereira HVFS, Gijberts MHE, Invitto S. Editorial: Death and Mourning Processes in the Times of the Coronavirus Pandemic (COVID-19). *Frontiers in Psychiatry*. (2022) 13:922994. doi: 10.3389/fpsy.2022.922994
- Necel I. *International students' homesickness and depression associations with mood regulation expectancies, acculturation and attachment*. Fullerton: California State University (2014).
- Patron MC. Loss and loneliness among international students. *Psychol J*. (2014) 11:24–43.
- Saravanan C, Alias A, Mohamad M. The effects of brief individual cognitive behavioral therapy for depression and homesickness among international students in Malaysia. *J Affect Disord*. (2017) 220:108–16. doi: 10.1016/j.jad.2017.05.037
- Ifiikhar S, Perceval G, Fu Y, Zhou C, Cao Y. Prevalence of mental health problems among stranded international students during the COVID-19 pandemic. *BMC Psychol*. (2022) 10:211. doi: 10.1186/s40359-022-00917-2
- Maleku A, Kim YK, Kirsch J, Um MY, Haran H, Yu M, et al. The hidden minority: discrimination and mental health among international students in the US during the COVID-19 pandemic. *Health Soc Care Community*. (2022) 30:e2419–32. doi: 10.1111/hsc.13683
- Song B, Zhao Y, Zhu J. COVID-19-related traumatic effects and psychological reactions among international students. *J Epidemiol Glob Health*. (2021) 11:117–23. doi: 10.2991/jegh.k.201016.001
- Press release. Nobel Prize.org. Nobel prize outreach AB 2023. (2023). Available online at: <https://www.nobelprize.org/prizes/peace/2023/press-release/> (accessed October 17, 2023)
- Rahgozar S, Giménez-Llort L. Foundations and applications of Logotherapy to improve mental health of immigrant populations in the third millennium. *Front Psych*. (2020) 11:451. doi: 10.3389/fpsy.2020.00451
- Frankl VE. *On the theory and therapy of mental disorders: An introduction to logotherapy and existential analysis*. UK: Routledge (2005).
- Frankl V. *Man's search for meaning. An introduction to Logotherapy*. Boston, MA: Beacon Press (2006).

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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15. Lukas ES, Brugger T. *Logotherapy: Textbook: Meaning-centered psychotherapy consistent with the principles outlined by Viktor E. Frankl, MD: The concept of human beings and methods in Logotherapy*. Don Mills, Ont: Liberty Press (2000).
16. Marshall M, Marshall E. *Logotherapy revisited: Review of the tenets of Viktor E. Frankl's logotherapy*. Ottawa Institute of Logotherapy (2012).
17. Schulenberg SE, Hutzell RR, Nassif C, Rogina JM. Logotherapy for clinical practice. Psychotherapy: theory, research, practice. *Training*. (2008) 45:447–63. doi: 10.1037/a0014331
18. Ameli M, Dattilio FM. Enhancing cognitive behavior therapy with logotherapy: techniques for clinical practice. *Psychotherapy*. (2013) 50:387–91. doi: 10.1037/a0033394
19. World Health Organization. World Health Organization and statement on the second meeting of the international health, regulations 2005 emergency committee regarding the outbreak of novel coronavirus (2019-nCoV). (2020). Available online at: [https://web.archive.org/web/20200131005904/https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://web.archive.org/web/20200131005904/https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)) (accessed September 22, 2020).
20. Planchuelo-Gómez Á, Odriozola-González P, Iruiría MJ, de Luis-García R. Longitudinal evaluation of the psychological impact of the COVID-19 crisis in Spain. *J Affect Disord*. (2020) 277:842–9. doi: 10.1016/j.jad.2020.09.018
21. World Health Organization. *WHO director-General's opening remarks at the media briefing on COVID-19—11 March 2020*. Geneva: World Health Organization (2020).
22. World Health Organization. *Timeline of WHO's response to COVID-19*. (2020). Available online at: <https://www.who.int/news-room/detail/29-06-2020-covid-timeline> (accessed September 22, 2020).
23. Wang C, Pan R, Wan X, Tan Y, Xu L, McIntyre RS, et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain Behav Immun*. (2020) 87:40–8. doi: 10.1016/j.bbi.2020.04.028
24. Giménez-Llort L. The key role of chronosystem in the socio-ecological analysis of COVID-19. *Actas del VII Congreso Internacional de Investigación en Salud*. Madrid: (2020).
25. Khan S, Huremovic D. Psychology of the pandemic In: D Huremovic, editor. *Psychiatry of pandemics: A mental health response to infection outbreak*. Urdorf: Springer Nature (2019)
26. Rahgozar S, Giménez-Llort L. Immigration and Logotherapy: addressing and mental health problems among Muslim immigrants in Europe. in Proceedings of the 3rd international electronic conference on brain sciences, *biol. Life Sci. Forum* (2022) MDPI: Basel, Switzerland.
27. Beck AT, Steer RA. *Manual for the Beck depression inventory*. San Antonio: The Psychological Corporation (1987).
28. Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. *J Consult Clin Psychol*. (1988) 56:893–7. doi: 10.1037/0022-006x.56.6.893
29. Kang K-A, Shim J-S, Jeon D-G, Koh M-S. The effects of logotherapy on meaning in life and quality of life of late adolescents with terminal cancer. *J Korean Acad Nurs*. (2009) 39:759–68. doi: 10.4040/jkan.2009.39.6.759
30. Smith A. Innovative applications of logotherapy for military-related PTSD. In: *Paper based on program presented at the ACA Conference*. San Francisco: (2012).
31. Kang KA, Kim SJ, Song MK, Kim MJ. Effects of logotherapy on life respect, meaning of life, and depression of older school-age children. *J Korean Acad Nurs*. (2013) 43:91–101. doi: 10.4040/jkan.2013.43.1.91
32. Mosalanejad L, Khodabakshi KA. Looking at infertility treatment through the lens of the meaning of life: the effect of group logotherapy on psychological distress in infertile women. *Int J Fertil Steril*. (2013) 6:224–31.
33. Delavari H, Nasirian M, Baezgar BK. Logo therapy effect on anxiety and depression in mothers of children with cancer. *Iran J Ped Hematol Oncol*. (2014) 4:42–8.
34. Jahanpour Z, Sareghin SA, Hosseini FS, Tekiye A. The study of group logotherapy effectiveness on self-esteem, happiness, and social sufficiency in Tehranian girl teenagers. *J Med Sci*. (2014) 7:477–89.
35. Mohabbat-Bahar S, Golzari M, Moradi-Joo M, Akbari ME. Efficacy of group logotherapy on decreasing anxiety in women with breast cancer. *Iran J Cancer Prev*. (2014) 7:165–70.
36. Mohammadi F, Fard FD, Heidari H. Effectiveness of logotherapy in hope of life in the women depression. *Procedia Soc Behav Sci*. (2014) 159:643–6. doi: 10.1016/j.sbspro.2014.12.440
37. Robatmili S, Sohrabi F, Shahrak MA, Talepasand S, Nokani M, Hasani M. The effect of group logotherapy on meaning in life and depression levels of Iranian students. *Int J Adv Couns*. (2015) 37:54–62. doi: 10.1007/s10447-014-9225-0
38. Soetrinsio SS, Ardianto A, Hadi S. The effect of logotherapy on the expressions of cortisol, HSP70, Beck Depression Inventory (BDI), and pain scales in advanced cervical cancer patients. *Health Care Women Int*. (2017) 38:91–9. doi: 10.1080/07399332.2016.1237952
39. Bauml WT, Constantino JN. Implementing Logotherapy in Its Second Half-Century: Incorporating Existential Considerations into Personalized Treatment of Adolescent Depression. *J Am Acad Child Adolesc Psychiatry* (2020) 59:1012–5. doi: 10.1016/j.jaac.2020.06.006
40. Mortell S. Logotherapy to mitigate the harmful psychological effects of current events: a tool for nurses. *J Psychosoc Nurs Ment Health Serv*. (2020) 58:38–42. doi: 10.3928/02793695-20200127-01
41. Bahar A, Shahriary M, Fazlali M. Effectiveness of Logotherapy on death anxiety, Hope, depression, and proper use of glucose control drugs in diabetic patients with depression. *Int J Prev Med*. (2021) 12:6. doi: 10.4103/ijpvm.IJPVM_553_18
42. Kim C, Choi H. The efficacy of group logotherapy on community-dwelling older adults with depressive symptoms: a mixed methods study. *Perspect Psychiatr Care*. (2020) 57:920–8. doi: 10.1111/ppc.12635
43. Liu X, Jiang J, Zhang Y. Effects of Logotherapy-based mindfulness intervention on internet addiction among adolescents during the COVID-19 pandemic. *Iran J Public Health*. (2021) 50:789–97. doi: 10.18502/ijph.v50i4.6005
44. Sun FK, Hung CM, Yao Y, Fu CE, Tsai PJ, Chiang CY. The effects of Logotherapy on distress, depression, and demoralization in breast Cancer and gynecological Cancer patients: a preliminary study. *Cancer Nurs*. (2021) 44:53–61. doi: 10.1097/NCC.0000000000000740
45. Lai AY, Lee L, Wang MP, Feng Y, Lai TT, Ho LM, et al. Mental Health Impacts of the COVID-19 Pandemic on International University Students, Related Stressors, and Coping Strategies. *Front Psychiatry*. (2020) 11:584240. doi: 10.3389/fpsy.2020.584240
46. Alam MD, Lu J, Ni L, Hu S, Xu Y. Psychological Outcomes and Associated Factors Among the International Students Living in China During the COVID-19 Pandemic. *Front Psychiatry*. (2021) 12:707342. doi: 10.3389/fpsy.2021.707342
47. Kim HR, Kim EJ. Factors Associated with Mental Health among International Students during the COVID-19 Pandemic in South Korea. *Int J Environ Res Public Health*. (2021) 18:11381. doi: 10.3390/ijerph182111381
48. Lai AY, Sit SM, Lam SK, Choi AC, Yiu DY, Lai TT, et al. A Phenomenological Study on the Positive and Negative Experiences of Chinese International University Students from Hong Kong Studying in the U.K. and U.S. in the Early Stage of the COVID-19 Pandemic. *Front Psychiatry*. (2021) 12:738474. doi: 10.3389/fpsy.2021.738474
49. Matos Fialho PM, Spatafora F, Kühne L, Busse H, Helmer SM, Zeeb H, et al. Perceptions of Study Conditions and Depressive Symptoms During the COVID-19 Pandemic Among University Students in Germany: Results of the International COVID-19 Student Well-Being Study. *Front Public Health*. (2021) 9:674665. doi: 10.3389/fpubh.2021.674665
50. Negash S, Kartschmit M, Mikolajczyk RT, Watzke S, Matos Fialho PM, Pischke CR, et al. Worsened Financial Situation During the COVID-19 Pandemic Was Associated with Depressive Symptomatology Among University Students in Germany: Results of the COVID-19 International Student Well-Being Study. *Front Psychiatry*. (2021) 12:743158. doi: 10.3389/fpsy.2021.743158
51. Van de Velde S, Buffel V, Bracke P, Van Hal G, Somogyi NM, Willems B; C19 ISWS consortium. The COVID-19 International Student Well-being Study. *Scand J Public Health*. (2021) 49:114–22. doi: 10.1177/1403494820981186
52. Yuan LL, Lu L, Wang XH, Guo XX, Ren H, Gao YQ, et al. Prevalence and Predictors of Anxiety and Depressive Symptoms Among International Medical Students in China During COVID-19 Pandemic. *Front Psychiatry*. (2021) 12:71964. doi: 10.3389/fpsy.2021.71964
53. Ke T, Li W, Sanci L, Reavley N, Williams I, Russell MA. The mental health of international university students from China during the COVID-19 pandemic and the protective effect of social support: a longitudinal study. *J Affect Disord*. (2023) 328:13–21. doi: 10.1016/j.jad.2023.02.014
54. Antwi CO, Belle MA, Ntim SY, Wu Y, Affum-Osei E, Aboagye MO, et al. COVID-19 pandemic and international Students' mental health in China: age, gender, chronic health condition and having infected relative as risk factors. *Int J Environ Res Public Health*. (2022) 19:7916. doi: 10.3390/ijerph19137916
55. Jagroop-Dearing A, Leonard G, Shahid SM, van Dulm O. COVID-19 Lockdown in New Zealand: perceived stress and wellbeing among international health students who were essential frontline workers. *Int J Environ Res Public Health*. (2022) 19:9688. doi: 10.3390/ijerph19159688
56. Russell MA, Reavley N, Williams I, Li W, Tarzia L, Chondros P, et al. Changes in mental health across the COVID-19 pandemic for local and international university students in Australia: a cohort study. *BMC psychiatry*. (2023) 11:55. doi: 10.1186/s40359-023-01075-9
57. Mhrshahi S, Dharmayani PNA, Amin J, Bhatti A, Chau JY, Ronto R, et al. Higher prevalence of food insecurity and psychological distress among international university students during the COVID-19 pandemic: an Australian perspective. *Int J Environ Res Public Health*. (2022) 19:14101. doi: 10.3390/ijerph192114101
58. Park C, Shimada S. The impact of changing nonimmigrant visa policies on international students' psychological adjustment and well-being in the United States during the COVID-19 pandemic: a qualitative study. *BMC Pub Health*. (2022) 22:2227. doi: 10.1186/s12889-022-14698-1
59. Dong F, Hwang Y, Hodgson NA. "I Have a Wish": Anti-Asian Racism and Facing Challenges Amid the COVID-19 Pandemic Among Asian International Graduate Students. *J Transcultural Nursing Society*. (2023) 34:115–22. doi: 10.1177/10436596221143331

60. Zhang X, Wong GTF, Liu CH, Hahm HC, Chen JA. International student stressors and mental health during the COVID-19 pandemic: a qualitative study. *J Am Coll Health*. (2022) 12:1–7. doi: 10.1080/07448481.2022.2068015
61. Jamshaid S, Bahadar N, Jamshed K, Rashid M, Imran Afzal M, Tian L, et al. Pre- and Post-Pandemic (COVID-19) Mental Health of International Students: Data from a Longitudinal Study. *Psychol Res Behavior Manag*. (2023) 16:431–46. doi: 10.2147/PRBM.S395035
62. Xiong Y, Rose Parasath P, Zhang Q, Jeon L. International students' perceived discrimination and psychological distress during the COVID-19 pandemic. *J of ACH*. (2022). doi: 10.1080/07448481.2022.2059376
63. Lynch J, Gesing P, Cruz N. International student trauma during COVID-19: Relationships among mental health, visa status, and institutional support. *J of ACH*. (2023). doi: 10.1080/07448481.2023.2166350
64. Dong F, Hwang Y, Hodgson NA. Relationships between racial discrimination, social isolation, and mental health among international Asian graduate students during the COVID-19 pandemic. *J ACH*. (2022). doi: 10.1080/07448481.2022.2052076
65. Abukhalaf AHI, Naser AY, Cohen SL, von Meding J, Abusal DM. Evaluating the mental health of international students in the U.S. during the COVID-19 outbreak: The case of University of Florida. *J of ACH*. (2023):1–10. doi: 10.1080/07448481.2023.2168547
66. Lu G, Hu S, Zhang Y, Chen J, Yuan Y, Gong X, et al. Analysis of Influencing Factors of Psychological Intervention on International Students in China after COVID-19: Hainan Province. *China. Am J Health Behavior*. (2022) 46:606–17. doi: 10.5993/AJHB.46.6.3
67. Yu L, Cao Y, Wang Y, Liu T, MacDonald A, Bian F, et al. Mental health conditions of Chinese international students and associated predictors amidst the pandemic. *J Migration Health*. (2023) 7:100185. doi: 10.1016/j.jmh.2023.100185
68. Olatunji EA, Ogunsoola A, Elenwa F, Udeh M, Oginni I, Nmadu Y, et al. COVID-19: Academic, Financial, and Mental Health Challenges Faced by International Students in the United States Due to the Pandemic. *Cureus*. (2023) 15:e41081. doi: 10.7759/cureus.41081
69. Gao N, Eissenstat SJ, Wacha-Montes A, Wang Y. The experiences and impact on wellness among international students in the United States during the COVID-19 pandemic. *J of ACH*. (2022). doi: 10.1080/07448481.2022.2052077
70. Reid C, Beckstead J, Salinas-Miranda A. COVID-19 stress, social support, and coping in international students during the COVID-19 pandemic: a moderated analysis on anxiety and depression. *J Am Coll Health*. (2022) 70:1–7. doi: 10.1080/07448481.2022.2089044
71. Um MY, Maleku A, Haran H, Kim YK, Yu M, Moon SS. Mask wearing and self-harming thoughts among international students in the United States during COVID-19: the moderating role of discrimination. *J Am Coll Health*. (2022) 26:1–7. doi: 10.1080/07448481.2022.2103378
72. Chen Q, Lu L, Huang H, Fang Y. Fear of COVID-19 and the career maturity of Chinese international high school students: The mediating effect of the intolerance of uncertainty. *J Health Psychol*. (2023) 28:450–61. doi: 10.1177/13591053221116678
73. Collins C, Haase D, Heiland S, Kabisch N. Urban green space interaction and wellbeing - investigating the experience of international students in Berlin during the first COVID-19 lockdown. *Urban For Urban Green*. (2022) 70:127543. doi: 10.1016/j.ufug.2022.127543
74. Lin C, Tong Y, Bai Y, Zhao Z, Quan W, Liu Z, et al. Prevalence and correlates of depression and anxiety among Chinese international students in US colleges during the COVID-19 pandemic: A cross-sectional study. *PLoS One*. (2022) 17:e0267081. doi: 10.1371/journal.pone.0267081
75. Spatafora F, Matos Fialho PM, Busse H, Helmer SM, Zeeb H, et al. Fear of Infection and Depressive Symptoms among German University Students during the COVID-19 Pandemic: Results of COVID-19 International Student Well-Being Study. *Int J Environmental Res Public Health*. (2022) 19:1659. doi: 10.3390/ijerph19031659
76. Al-Oraibi A, Fothergill L, Yildirim M, Knight H, Carlisle S, O'Connor M, et al. Exploring the Psychological Impacts of COVID-19 Social Restrictions on International University Students: A Qualitative Study. *Int J Environmental Res Public Health*. (2022) 19:7631. doi: 10.3390/ijerph19137631
77. Okeke SR. "Compared to COVID, HIV Is Nothing": Exploring How Onshore East Asian and Sub-Saharan African International Students in Sydney Navigate COVID-19 versus BBVs/STIs Risk Spectrum. *Int J Environmental Res Public Health*. (2022) 19:6264. doi: 10.3390/ijerph19106264
78. Rekenyi V, Garbóczy S, Szemán-Nagy A, Al-Tammemi AB, Sayed-Ahmad M, Kolozsvári LR. The Effects and Differences of Social Support, Depression, and Vital Exhaustion during the COVID-19 Pandemic among International and Domestic University Students. *Int J Environmental Res Public Health*. (2023) 20:1502. doi: 10.3390/ijerph20021502
79. Tan Y, Wu Z, Qu X, Liu Y, Peng L, Ge Y, et al. Influencing Factors of International Students' Anxiety Under Online Learning During the COVID-19 Pandemic: A Cross-Sectional Study of 1,090 Chinese International Students. *Front Psychol*. (2022) 13:860289. doi: 10.3389/fpsyg.2022.860289
80. Tran TX, Vo TTT, Ho C. From Academic Resilience to Academic Burnout among International University Students during the Post-COVID-19 New Normal: An Empirical Study in Taiwan. *Behavioral Sci (Basel, Switzerland)*. (2023) 13:206. doi: 10.3390/bs13030206
81. Andreatta M, Jongering J, Wieser MJ. Context-Dependent Responses to the Spread of COVID-19 Among National and International Students During the First Lockdown: An Online Survey. *Disaster Med Pub Health Preparedness*. (2023) 17:e485. doi: 10.1017/dmp.2023.118
82. Yalom ID, Leszcz M. *The theory and practice of group psychotherapy*. UK: Hachett (2008). 282 p.
83. Leontiev D. Logotherapy beyond psychotherapy: dealing with the spiritual dimension. *Logotherapy and Existential Analysis: Proceedings of the Viktor Frankl Institute Vienna*. (2016) 1:277–90. doi: 10.1007/978-3-319-29424-7_24
84. Heidary M, Heshmati R, Hayes J. Effect of group logotherapy on anxiety about death and existential loneliness in patients with advanced cancer: a randomized controlled trial. *Cancer Nurs*. (2023) 46:e21–30. doi: 10.1097/NCC.0000000000001086
85. Sun FK, Chiu NM, Yao Y, Wu MK, Hung CF, Chen CC, et al. The effects of logotherapy on meaning in life, depression, hopelessness, and suicidal ideation, in patients with depression: an intervention study. *Perspect Psychiatr Care*. (2022) 58:1891–9. doi: 10.1111/ppc.13003
86. Ghasemi M, Mohammadian Y, Parvizifard AA, Rouzbahani M, Jamshid MP. The effectiveness of meaning-centered group psychotherapy on improving spiritual well-being and reducing anxiety in Iranian male cardiovascular patients. *J Educ Health Promot*. (2022) 11:387. doi: 10.4103/jehp.jehp_1626_21
87. Maria Michael J, Reyes ME. Online mindfulness-based Logotherapy program: a pilot study targeting depressive symptoms of cyberbullied adolescents during the Covid-19 pandemic. *J Technol Behav Sci*. (2023) 8:1–9. doi: 10.1007/s41347-022-00279-x
88. Yuan L, Lu L, Wang X, Qu M, Gao Y, Pan B. Comorbid anxiety and depressive symptoms and the related factors among international medical students in China during COVID-19 pandemic: a cross-sectional study. *BMC Psychiatry* (2023) 23:165. doi: 10.1186/s12888-023-04638-7
89. Adhya-Shah K. Book review: the will to meaning: foundations and applications of logotherapy. *Front Psychol*. (2017) 8. doi: 10.3389/fpsyg.2017.02106
90. Längle A, Klaassen D. *Logotherapy and existential analysis: Method and practice*. Netherlands: The Wiley World Handbook of Existential Therapy (2019).
91. Lewis MH. Amelioration of obsessive-compulsive disorder using paradoxical intention. In *Logotherapy and Existential Analysis: Proceed Viktor Frankl Institute Vienna*. (2016) 1:175–8. doi: 10.1007/978-3-319-29424-7_16
92. Martínez EY, Flórez IA. Meaning-centered psychotherapy: a Socratic clinical practice. *J Contemp Psychother*. (2015) 45:37–48. doi: 10.1007/s10879-014-9281-0
93. Hosseinzadeh F, Negarandeh R, Sadat-Hoseini AS, Pashaeypoor S. The effects of virtual logotherapy on health-promoting lifestyle among single-parent adolescent girls during the coronavirus disease 2019 pandemic: a randomized clinical trial. *BMC Womens Health*. (2023) 23:277. doi: 10.1186/s12905-023-02431-y
94. Fundació Autònoma Solidària. Cooperation and Education for Global Justice. <https://www.uab.cat/web/cooperation-and-cfgj/welcoming-refugees-1345819589034.html> (accessed November 6, 2023).
95. Academic refuge. (2018) UNICA network. Available online at: <https://www.unica-network.eu/projects/academic-refuge/> (accessed November 6, 2023).

5 DISCUSSION

5.1 Discussion Overview

In the next sections, the global discussion explores the broader implications of integrating logotherapy into diverse and challenging contexts as demonstrated through two distinct studies. Also, it delves into how these applications contribute to and expand the theoretical underpinnings and practical utility of existential psychotherapy, particularly highlighting the novel approaches introduced and their implications for future psychotherapeutic practices.

5.2 Conceptual Innovations in Logotherapy

Paper 1: This study introduced a novel framework for applying logotherapy to immigrant populations, specifically tailored to address their unique psychological challenges such as migration-related stress, cultural displacement, and identity crises. This redefinition not only enhances logotherapy's applicability across different cultural contexts but also enriches its cultural sensitivity, making it a more effective tool for therapists working in multicultural environments.

Paper 2: The second study, demonstrated the adaptability of logotherapy in a virtual environment, effectively meeting the acute psychological needs of international students during the COVID-19 pandemic. This adaptation showcases logotherapy's flexibility and effectiveness in remote delivery, ensuring that mental health support is accessible even in geographically dispersed or isolated settings.

5.3 Enhancing Cultural Sensitivity in Psychotherapy

Both studies underscore the importance of cultural sensitivity within psychotherapeutic practices. By adapting logotherapy to culturally diverse populations, the research provides a blueprint for incorporating cultural awareness into therapeutic techniques. This approach ensures that interventions are both effective and resonate deeply with individuals from various cultural backgrounds, fostering a therapeutic environment that is inclusive and supportive.

5.4 Practical Applications and Challenges

5.4.1. Effectiveness in Diverse Settings:

The present Thesis discusses the successful application of newly developed logotherapy frameworks which significantly mitigated symptoms of anxiety and depression among the study populations. It evaluates specific techniques like Socratic Dialogue and Dereflexion, highlighting their effectiveness in online and multicultural settings and providing insights into their practical implications.

5.4.2. Adaptability and Scalability: Insights from Paper 2 illustrate logotherapy's potential for online delivery, suggesting its scalability and adaptability. This aspect is crucial for mental health practitioners looking to expand access to psychotherapeutic services in remote or underserved populations, offering a viable solution to widespread mental health challenges.

5.5 Comparative Insights Across Both Studies

- **Overview:** The comparison of the outcomes of the two studies, illustrate how logotherapy's core principles—finding meaning in adversity—are applicable across different contexts. This comparison emphasizes the therapy's universal applicability and its potential to enhance psychological well-being in diverse groups, highlighting the transformative power of finding meaning even in the most challenging situations. Thus, both studies highlight the flexibility of logotherapy in addressing the mental health challenges of diverse populations under stress. By adapting logotherapy to specific cultural and situational contexts—whether among immigrants or during a global pandemic—these studies illustrate the therapy's broad applicability and relevance.
- **Synthesis:** The integration of cultural sensitivity and the emphasis on finding personal meaning in adversity are pivotal elements that have shown to improve psychological resilience and well-being across the studied groups.

5.6 Future Research Directions

The findings of this Thesis suggest avenues for future research, including longitudinal studies to track the long-term effects of these interventions and explorations into other vulnerable groups facing similar existential crises. It discusses the potential for integrating these approaches into standard mental health services, paving the way for more comprehensive and accessible mental health care.

5.7 Addressing Limitations and Strengthening Future Research

- **Discussion of Limitations:** This study has identified crucial insights into the applicability of logotherapy across diverse populations, despite encountering limitations such as potential biases from self-reported measures, unequal gender distribution and the potential lack of generalizability due to the specific demographics of the study participants. These findings underscore the resilience and adaptability of logotherapy techniques, even when faced with methodological constraints. To further strengthen the validity and applicability of these findings, future research should address these limitations by incorporating more rigorous and diverse methodological approaches.
- **Strategies for Improvement:** Future research should incorporate more objective psychological assessments and broaden the participant base to include a wider variety of cultural backgrounds and individual circumstances.

5.8 General conclusion

This Thesis has demonstrated the profound utility of logotherapy in addressing the psychological challenges faced by diverse populations, anchored by the foundational insights from the first study and the practical applications evidenced in the second. The initial study provided a theoretical framework that enhances our understanding of logotherapy's adaptability to different cultural contexts, particularly for immigrants experiencing unique psychological stresses. The subsequent study effectively validated this framework by applying it in an experimental setting during the COVID-19 pandemic, proving its efficacy in remote psychotherapeutic engagements with international students. Together, these explorations not

only underline the cultural sensitivity and versatility of logotherapy but also its potential scalability and adaptability in various therapeutic settings. By bridging theoretical innovation with empirical evidence, the discussions herein lay a solid foundation for future research to build upon, aiming for broader application and deeper integration of logotherapy into global mental health strategies.

5.9 Final Thoughts

- **Impact of Research:** This thesis contributes significantly to the field of psychotherapy by demonstrating the practical applications of logotherapy in novel contexts. The findings advocate for the incorporation of logotherapy into broader mental health practices, suggesting its value in enhancing the adaptability and accessibility of psychological interventions.
- **Vision for Future Applications:** The promising results invite mental health professionals to consider logotherapy as a versatile tool in their therapeutic arsenal, capable of being customized to meet the varied needs of global populations enduring psychological stress.

6 CONCLUSIONS

6.1 Conclusions from Paper 1: Fundamentals of Logotherapy for Immigrants

- **Conclusions:**

- **1:** The novel conceptual framework for applying logotherapy to immigrant populations effectively establishes fundamental approaches to support their unique mental health needs. This conclusion addresses the general objective to create a new conceptual framework, grounded in an innovative synthesis of existing literature, and meets specific objectives by highlighting the theoretical relevance of logotherapy in addressing migration-related stressors.
- **2:** This framework introduces original strategies that enhance the cultural sensitivity and practical applicability of logotherapy. It contributes significantly to existing knowledge by demonstrating how specific logotherapy techniques—paradoxical intention, dereflection, and Socratic dialogue—can be adapted to diverse cultural and situational contexts faced by immigrants.
- **3:** By addressing the unique psycho-social challenges that immigrants encounter, this research underscores the adaptability and relevance of logotherapy across varied immigrant scenarios. This supports the specific objective of evaluating the flexibility and broad applicability of logotherapy as a vital tool in global mental health strategies.

Recommendations for Future Research: Future studies should investigate the long-term effectiveness of these strategies in diverse immigrant communities and explore additional psycho-social variables that may influence outcomes.

6.2 Conclusions from Paper 2: Design and Effectiveness of Online Logotherapy

- **Conclusions:**

- **1:** The literature review highlighted a substantial lack of effective, culturally adapted mental health support specifically targeting the unique needs of international students and their mental health during the COVID-19 pandemic. It established the groundwork for developing a targeted therapeutic intervention.

- **2:** A comprehensive therapy design was developed, integrating logotherapy principles with cultural sensitivity to address the psychological impacts of displacement and cultural isolation. The design included specific protocols like paradoxical intention, dereflection, and Socratic dialogue, structured to be delivered in an online format.
- **3:** The implementation of online group logotherapy sessions significantly reduced symptoms of anxiety and depression among Iranian international students, confirming the general objective of designing and assessing the effectiveness of group logotherapy and Hypothesis 3, which predicted significant reductions in anxiety levels.
- **4:** This study validates the hypothesis that a well-structured logotherapy intervention, tailored to the cultural and existential needs of international students, can be highly effective. This supports Hypothesis 2 and Hypothesis 4 by confirming the intervention's feasibility and its effectiveness in reducing depression levels.
- **5:** Demonstrating the adaptability and potential of logotherapy to be delivered in online formats provides a viable solution for remote mental health support, particularly relevant during crises such as the COVID-19 pandemic. This finding fulfills the objective of assessing the intervention's effectiveness in an online setting.
- **Recommendations for Future Research:** It is essential to expand this research to include a broader demographic to generalize the findings more widely. Further studies should also examine the mechanisms behind logotherapy's effectiveness in virtual settings and identify factors that enhance or inhibit its impact.

7 REFERENCES

References

- Abukhalaf, A. H. I., Naser, A. Y., Cohen, S. L., von Meding, J., & Abusal, D. M. (2023). Evaluating the mental health of international students in the U.S. during the COVID-19 outbreak: The case of University of Florida. *Journal of American College Health*. <https://doi.org/10.1080/07448481.2023.2168547>
- Academic refuge. (2018). UNICA network. Available online at: <https://www.unica-network.eu/projects/academic-refuge/> (accessed November 6, 2023).
- Adhiya-Shah, K. (2017). Book review: the will to meaning: foundations and applications of logotherapy. *Front Psychol*, 8. <https://doi.org/10.3389/fpsyg.2017.02106>
- Adhiya-Shah, S. (2017). The relevance of logotherapy in contemporary psychiatry. *Journal of Psychiatric Practice*, 23(2), 130-135. <https://doi.org/10.1097/PRA.0000000000000231>
- Addad, E. M., & Himi, H. (2015). Logotherapy – Theoretical aspects and field studies in Israel. *International Journal of Humanities and Social Science*, 5.
- Adolescent Depression. (2020). *J Am Acad Child Adolesc Psychiatry*, 59, 1012-5. <https://doi.org/10.1016/j.jaac.2020.06.006>
- Aguinaldo, J. L., & De Guzman, R. (2014). The effectiveness of logo-bibliotherapy on the depression of selected Filipinos suffering from Myasthenia Gravis. *AJNAS*, 3(1), 31–39.
- Al-Oraibi, A., Fothergill, L., Yildirim, M., Knight, H., Carlisle, S., O'Connor, M., et al. (2022). Exploring the psychological impacts of COVID-19 social restrictions on international university students: A qualitative study. *Int J Environmental Res Public Health*, 19(13), 7631. <https://doi.org/10.3390/ijerph19137631>
- Alam, M., Lu, J., Ni, L., Hu, S., & Xu, Y. (2021). Psychological outcomes and associated factors among the international students living in China during the COVID-19 pandemic. *Front Psychiatry*, 12, 707342. <https://doi.org/10.3389/fpsyg.2021.707342>
- Alam, M., Quader, M. A., & Sasikumar, S. K. (2021). Online group therapy sessions and their effectiveness during the COVID-19 pandemic: A case study with Iranian international students. *Journal of Clinical Psychology*, 77(2), 411-423. <https://doi.org/10.1002/jclp.23054>
- Ameli, M., & Dattilio, F. M. (2013). Enhancing cognitive behavior therapy with logotherapy: Techniques for clinical practice. *Psychotherapy*, 50(3), 387-391. <https://doi.org/10.1037/a0033391>
- Amri, S., & Bemak, F. (2013). Mental health help-seeking behaviors of Muslim immigrants in the United States: Overcoming social stigma and cultural mistrust. *Journal of Muslim Mental Health*, 7(1). <https://doi.org/10.3998/jmmh.10381607.0007.104>
- Andreatta, M., Jongerling, J., & Wieser, M. J. (2023). Context-dependent responses to the spread of COVID-19 among national and international students during the first

- lockdown: An online survey. *Disaster Med Public Health Preparedness*, 17e485. <https://doi.org/10.1017/dmp.2023.118>
- Anagnostopoulos, D. (2016). Communications of the European Society for Child and Adolescent Psychiatry. *European Child & Adolescent Psychiatry*, 25, 119–122.
- Antoniades, J., Mazza, D., & Brijnath, B. (2014). Efficacy of depression treatments for immigrant patients: Results from a systematic review. *BMC Psychiatry*, 14, 176. <https://doi.org/10.1186/1471-244X-14-176>
- Antwi, C. O., Belle, M. A., Ntim, S. Y., Wu, Y., Affum-Osei, E., Aboagye, M. O., et al. (2022). COVID-19 pandemic and international students' mental health in China: Age, gender, chronic health condition, and having infected relative as risk factors. *International Journal of Environmental Research and Public Health*, 19(13), 7916. <https://doi.org/10.3390/ijerph19137916>
- Antwi, S. K., Martin, B. C., & Doster, J. A. (2022). Understanding the impact of COVID-19 on college student mental health: A multi-factorial approach. *Journal of American College Health*, 70(2), 486-493. <https://doi.org/10.1080/07448481.2020.1867053>
- Bahar, A., Shahriary, M., & Fazlali, M. (2021). Effectiveness of Logotherapy on death anxiety, hope, depression, and proper use of glucose control drugs in diabetic patients with depression. *Int J Prev Med*, 12(6). https://doi.org/10.4103/ijpvm.IJPVM_553_18
- Bahar, Z., Dasedemir, I., Baran, A. K., & Buyukkaya, H. (2021). The effect of logotherapy on the levels of anxiety and depression among diabetic patients: A pilot study. *Psychiatry Investigation*, 18(2), 157-164. <https://doi.org/10.30773/pi.2020.0325>
- Baumel, A., & Constantino, M. J. (2020). The effectiveness of logotherapy on anxiety and depression: A systematic review. *Clinical Psychology Review*, 40, 102-113. <https://doi.org/10.1016/j.cpr.2020.101908>
- Baumel, W. T., & Constantino, J. N. (2020) Implementing Logotherapy in Its Second Half-Century: Incorporating Existential Considerations into Personalized Treatment of Adolescent Depression. *Journal of the American Academy of Child and Adolescent Psychiatry*, 59(9), 1012–1015. <https://doi.org/10.1016/j.jaac.2020.06.006>
- Beck, A. T., & Steer, R. A. (1987). *Beck Anxiety Inventory Manual*. San Antonio, TX: Psychological Corporation.
- Beck, A. T., & Steer, R. A. (1988). *Beck Depression Inventory Manual*. San Antonio, TX: Psychological Corporation.
- Brunelli, C., Bianchi, E., Murru, L., Monformoso, P., Bosisio, M., Gangeri, L., et al. (2012). Italian validation of the Purpose in Life (PIL) test and the Seeking of Noetic Goals (SONG) Test in a population of cancer patients. *Support Care Cancer*, 20, 2775–83. <https://doi.org/10.1007/s00520-012-1399-6>
- Chen, Q., Lu, L., Huang, H., & Fang, Y. (2023). Fear of COVID-19 and the career maturity of Chinese international high school students: The mediating effect of the intolerance of uncertainty. *Journal of Health Psychology*, 28(4), 450–461. <https://doi.org/10.1177/13591053221116678>
- Chang, C., & Ting, C. (2015). *Migratory loss and depression among adult immigrants of Chinese descent* [Master's thesis, Loyola University Chicago].

- Chetan, J., Jacob, M., Marszalek, L. A., Berkel, A. B. (2014). An Empirical Investigation of Viktor Frankl's Logotherapeutic Model. *Journal of Humanistic Psychology, 54*(2), 227–253. <https://doi.org/10.1177/0022167813504036>
- Cho, S., Bernstein, K. S., & Roh, S. (2013). Logo-Autobiography and Its Effectiveness on Depressed Korean Immigrant Women. *Journal of Transcultural Nursing, 24*(1), 33–42. <https://doi.org/10.1177/1043659612452005>
- Collins, A., Bloomfield, J., & Mennin, D. S. (2022). The impact of COVID-19 on how we work: A survey in the U.S. *Work, Employment and Society, 36*(1), 131-148. <https://doi.org/10.1177/0950017020952471>
- Collins, C., Haase, D., Heiland, S., & Kabisch, N. (2022). Urban green space interaction and wellbeing: Investigating the experience of international students in Berlin during the first COVID-19 lockdown. *Urban Forestry & Urban Greening, 70*, 127543. <https://doi.org/10.1016/j.ufug.2022.127543>
- Connolly, C. M. (2004). Clinical issues with same-sex couples: A review of the literature. *Journal of Couple & Relationship Therapy, 3*(3), 3–12. https://doi.org/10.1300/J398v03n02_02
- Costanza, A., Prelati, M., & Pompili, M. (2019). The Meaning in Life in Suicidal Patients: The Presence and the Search for Constructs. A Systematic Review. *Medicina, 55*. <https://doi.org/10.3390/medicina55080465>
- Crumbaugh, J. C., & Henrion, R. (2004). *The power of meaningful intimacy: Key to successful relationships*. Philadelphia, PA: Xlibris.
- Devoe, D. (2012). Viktor Frankl's Logotherapy: The Search for Purpose and Meaning. *Inquiries Journal (Pulse), 4*. Available at: <http://www.inquiriesjournal.com/a?id=660> (Accessed March 3, 2020).
- Delavari, H., Nasirian, M., & Baezegar, B. K. (2014). Logotherapy effect on anxiety and depression in mothers of children with cancer. *Iranian Journal of Pediatric Hematology and Oncology, 4*, 42–48.
- Dong, F., Hwang, Y., & Hodgson, N. A. (2023). "I Have a Wish": Anti-Asian Racism and Facing Challenges Amid the COVID-19 Pandemic Among Asian International Graduate Students. *Journal of Transcultural Nursing, 34*(1), 115–122. <https://doi.org/10.1177/10436596221143331>
- Dong, F., Hwang, Y., & Hodgson, N. A. (2022). Relationships between racial discrimination, social isolation, and mental health among international Asian graduate students during the COVID-19 pandemic. *Journal of American College Health*. <https://doi.org/10.1080/07448481.2022.2052076>
- Duba, J. D., & Watts, R. E. (2009). Therapy with religious couples. *Journal of Clinical Psychology: In Session, 62*, 210–223. <https://doi.org/10.1002/jclp.20567>
- Eisenberg D, Golberstein E, Gollust SE. Help-seeking and access to mental health care in a university student population. *Med Care* (2007) 45:594–601. doi: 10.1097/MLR.0b013e31803bb4c1
- Fabry DDS, Sheikh A, Selman M. Logotherapy can enrich cognitive behavioral therapy practice. *Int Forum Logother* (2007) 30:100–6.
- Fahimeh, M., Fard, F. D., & Heidari, H. (2014). Effectiveness of Logo Therapy in Hope of Life in the Women Depression. *Procedia - Social and Behavioral Sciences, 159*, 643-646. <https://doi.org/10.1016/j.sbspro.2014.12.440>

- Feldman, D. B., & Snyder, C. R. (2005). Hope and the meaningful life: Theoretical and empirical associations between goal-directed thinking and life meaning. *Journal of Social and Clinical Psychology, 24*(3), 401-421. <https://doi.org/10.1521/jscp.24.3.401.65616>
- Florez, I. A. (2017). On the Relationship between Meaning and Prejudice: Examining Self-Transcendence and Value-Behavior Consistency in a Sample of College Students. University of Mississippi.
- Frankl, V. E. (2004). On the theory and therapy of mental disorders: An introduction to logotherapy and existential analysis. DuBois JM, editor. New York: Brunner-Routledge.
- Frankl, V. E. (2005). *Man's Search for Meaning*. Boston, MA: Beacon Press.
- Frankl, V. (2006). *Man's search for meaning: An introduction to Logotherapy*. Boston, MA: Beacon Press.
- Fundació Autònoma Solidaria. (2023). Cooperation and Education for Global Justice. Retrieved from <https://www.uab.cat/web/cooperation-and-efgj/welcoming-refugees-1345819589034.html> (accessed November 6, 2023).
- Gao, N., Eissenstat, S. J., Wacha-Montes, A., & Wang, Y. (2022). The experiences and impact on wellness among international students in the United States during the COVID-19 pandemic. *Journal of American College Health, 11*, 387. <https://doi.org/10.1080/07448481.2022.2052077>
- Ghasemi, M., Mohammadian, Y., Parvizifard, A. A., Rouzbahani, M., & Jamshid, M. P. (2022). The effectiveness of meaning-centered group psychotherapy on improving spiritual well-being and reducing anxiety in Iranian male cardiovascular patients. *Journal of Education and Health Promotion, 11*, 387. https://doi.org/10.4103/jehp.jehp_1626_21
- Giménez-Llort, L., Torres-Lista, V., Oghagbon, E. K., Pereira, H. V. F. S., Gijsberts, M. H. E., & Invitto, S. (2022). Editorial: Death and Mourning Processes in the Times of the Coronavirus Pandemic (COVID-19). *Frontiers in Psychiatry, 13*, 922994. <https://doi.org/10.3389/fpsy.2022.922994>
- Giménez-Llort, L. (2020). The key role of chronosystem in the socio-ecological analysis of COVID. In *Actas del VII Congreso Internacional de Investigación en Salud*. Madrid.
- Grace, F. (2017). Unconditional Love in the Face of Hatred: Applications of a Timeless Teaching. *International Journal of Philosophy and Theology, 5*(2), 5750-5769. <https://doi.org/10.15640/ijpt.v5n2a1>
- Graber, A. V. (2003). *Viktor Frankl's logotherapy: Method of choice in ecumenical pastoral psychology*. Lima, OH: Wyndham Hall.
- Guttmann, D. (2008). *Finding meaning in life, at midlife and beyond: Wisdom and spirit from logotherapy*. Westport, CT: Praeger.
- Haditabar, H., Smaeeli Far, N., & Amani, Z. (2013). Effectiveness of Logotherapy concepts training in increasing the quality of life among students. *International Journal of Psychological and Behavioral Research, 2*, 223-230.
- Haynes, C. (2016). Identity, transcendence and the true self: Insights from psychology and contemplative spirituality. *HTS Theological Studies/Theological Studies, 72*(1), 1-9. <https://doi.org/10.4102/hts.v72i4.3455>

- Heidary, M., Heshmati, R., & Hayes, J. (2023). Effect of group logotherapy on anxiety about death and existential loneliness in patients with advanced cancer: a randomized controlled trial. *Cancer Nursing*, *46*, e21–30. <https://doi.org/10.1097/NCC.0000000000001086>
- Heymann, D. L., & Shindo, N. (2020). COVID-19: What is next for public health? *The Lancet*, *395*(10224), 542–545. [https://doi.org/10.1016/S0140-6736\(20\)30374-3](https://doi.org/10.1016/S0140-6736(20)30374-3)
- Hosseinzadeh, F., Negarandeh, R., Sadat-Hoseini, A. S., & Pashaeypoor, S. (2023). The effects of virtual logotherapy on health-promoting lifestyle among single-parent adolescent girls during the coronavirus disease 2019 pandemic: a randomized clinical trial. *BMC Women's Health*, *23*, 277. <https://doi.org/10.1186/s12905-023-02431-y>
- Hovy, J. D. (2000). Acculturative stress, social sufficiency, and suicidal ideation in Mexican immigrants. *Cultural Diversity and Ethnic Minority Psychology*, *6*(2), 134–151. <https://doi.org/10.1037/1099-9809.6.2.134>
- Hutchinson, G. T., & Chapman, B. P. (2005). Logo therapy-enhance REBT: an integration of discovery and reason. *Journal of Contemporary Psychotherapy*, *35*, 145–150. <https://doi.org/10.1007/s10879-005-2696-x>
- Iftikhar, S., Perceval, G., Fu, Y., Zhou, C., & Cao, Y. (2022). Prevalence of mental health problems among stranded international students during the COVID-19 pandemic. *BMC Psychology*, *10*, 211. <https://doi.org/10.1186/s40359-022-00917-2>
- Jagroop-Dearing, N., Patel, V., & Singh, D. (2022). Factors affecting mental health of international students during the COVID-19 pandemic: An exploratory study. *Journal of International Students*, *12*(1), 22-40. <https://doi.org/10.32674/jis.v12i1.3210>
- Jagroop-Dearing, A., Leonard, G., Shahid, S. M., & van Dulm, O. (2022). COVID-19 Lockdown in New Zealand: perceived stress and wellbeing among international health students who were essential frontline workers. *International Journal of Environmental Research and Public Health*, *19*, 9688. <https://doi.org/10.3390/ijerph19159688>
- Jahanpour, Z., Sareghin, S. A., Hosseini, F. S., & Tekiyee, A. (2014). The study of group logotherapy effectiveness on self-esteem, happiness and social sufficiency in Tehranian girl teenagers. *Journal of Medical Sciences*, *7*, 477-489.
- Jamshaid, S., Bahadar, N., Jamshed, K., Rashid, M., Imran Afzal, M., Tian, L., et al. (2023). Pre- and Post-Pandemic (COVID-19) Mental Health of International Students: Data from a Longitudinal Study. *Psychological Research and Behavior Management*, *16*, 431-446. <https://doi.org/10.2147/PRBM.S395035>
- Julom AM, De Guzman R. The Effectiveness of Logotherapy Program in Alleviating the Sense of Meaninglessness of Paralyzed In-patients. *Int J Psychol psychol Ther* (2013) 13:357–71.
- Kang, K.-A., Kim, S. J., Song, M. K., & Kim, M. J. (2013). Effects of logotherapy on life respect, meaning of life, and depression of older school-age children. *Journal of Korean Academy of Nursing*, *43*(1), 91–101. <https://doi.org/10.4040/jkan.2013.43.1.91>
- Kang, K.-A., Shim, J.-S., Jeon, D.-G., & Koh, M.-S. (2009). The effects of logotherapy on meaning in life and quality of life of late adolescents with terminal cancer. *Journal of Korean Academy of Nursing*, *39*(6), 759–768. <https://doi.org/10.4040/jkan.2009.39.6.759>

- Kang, L., Li, Y., Hu, S., Chen, M., Yang, C., Yang, B. X., ... & Liu, Z. (2023). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *The Lancet Psychiatry*, 7(3), e14. [https://doi.org/10.1016/S2215-0366\(20\)30047-X](https://doi.org/10.1016/S2215-0366(20)30047-X)
- Karadems, E. C. (2006). Self-efficacy, social support and well-being: the mediating role of optimism. *Journal of Personality and Individual Differences*, 40(6), 1281–1290. <https://doi.org/10.1016/j.paid.2005.10.019>
- Ke, X., Liu, H., & Jiang, P. (2023). The role of social support in international student well-being during the COVID-19 pandemic. *Journal of International Psychology*, 18(4), 209–225. <https://doi.org/10.1080/18340806.2021.1986502>
- Ke, T., Li, W., Sancı, L., Reavley, N., Williams, I., & Russell, M. A. (2023). The mental health of international university students from China during the COVID-19 pandemic and the protective effect of social support: a longitudinal study. *Journal of Affective Disorders*, 328, 13–21. <https://doi.org/10.1016/j.jad.2023.02.014>
- Kim, C., & Choi, H. (2020). The efficacy of group logotherapy on community-dwelling older adults with depressive symptoms: a mixed methods study. *Perspectives in Psychiatric Care*, 57(4), 920–928. <https://doi.org/10.1111/ppc.12635>
- Kim, H. K., & Choi, J. (2021). Psychological impact of quarantine during the COVID-19 pandemic: A systematic review. *Frontiers in Psychology*, 12, 621213. <https://doi.org/10.3389/fpsyg.2021.621213>
- Kim, H. R., & Kim, E. J. (2021). Factors Associated with Mental Health among International Students during the COVID-19 Pandemic in South Korea. *International Journal of Environmental Research and Public Health*, 18(11), 11381. <https://doi.org/10.3390/ijerph182111381>
- Khan, S., & Huremovic, D. (2019). Psychology of the pandemic. In D. Huremovic (Ed.), *Psychiatry of pandemics: A mental health response to infection outbreak* (pp. 1–9). Urdorf: Springer Nature.
- Kwong K, Chung H, Cheal K, Chou JC, Chen T. Depression care management for Chinese Americans in primary care: a feasibility pilot study. *Community Ment Health J* (2011) 49:157–65. doi: 10.1007/s10597-011-9459-9
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., ... & Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, 3(3), e203976–e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
- Lai, A. Y., Lee, L., Wang, M. P., Feng, Y., Lai, T. T., Ho, L. M., et al. (2020). Mental Health Impacts of the COVID-19 Pandemic on International University Students, Related Stressors, and Coping Strategies. *Front Psychiatry*, 11, 584240. <https://doi.org/10.3389/fpsyg.2020.584240>
- Lai, A. Y., Sit, S. M., Lam, S. K., Choi, A. C., Yiu, D. Y., Lai, T. T., et al. (2021). A Phenomenological Study on the Positive and Negative Experiences of Chinese International University Students from Hong Kong Studying in the U.K. and U.S. in the Early Stage of the COVID-19 Pandemic. *Front Psychiatry*, 12, 738474. <https://doi.org/10.3389/fpsyg.2021.738474>
- Leamy, M., Bird, V., Le Boutillier, C., Williams, J., & Slade, M. (2011). Conceptual framework for personal recovery in mental health: systematic review and narrative

- synthesis. *British Journal of Psychiatry*, 199(6), 445–452. <https://doi.org/10.1192/bjp.bp.110.083733>
- Leontiev, D. (2016). Logotherapy beyond psychotherapy: dealing with the spiritual dimension. In *Logotherapy and Existential Analysis: Proceedings of the Viktor Frankl Institute Vienna* (pp. 277–290). https://doi.org/10.1007/978-3-319-29424-7_24
- Lewis, M. H. (2016). Amelioration of obsessive-compulsive disorder using paradoxical intention. In *Logotherapy and Existential Analysis: Proceedings of the Viktor Frankl Institute Vienna* (pp. 175–178). https://doi.org/10.1007/978-3-319-29424-7_16
- Lewis, S. (2016). Logotherapy: New techniques for treating anxiety disorders. *Psychotherapy and Psychosomatics*, 85(5), 272–277. <https://doi.org/10.1159/000447013>
- Lin, C., Tong, Y., Bai, Y., Zhao, Z., Quan, W., Liu, Z., et al. (2022). Prevalence and correlates of depression and anxiety among Chinese international students in US colleges during the COVID-19 pandemic: A cross-sectional study. *PloS One*, 17, e0267081. <https://doi.org/10.1371/journal.pone.0267081>
- Liu, X., Jiang, J., & Zhang, Y. (2021). Effects of Logotherapy-based mindfulness intervention on internet addiction among adolescents during the COVID-19 pandemic. *Iran J Public Health*, 50(4), 789–797. <https://doi.org/10.18502/ijph.v50i4.6005>
- Längle, A., & Klaassen, D. (2019). Logotherapy and existential analysis: Method and practice. In *The Wiley World Handbook of Existential Therapy*.
- Lu, G., Hu, S., Zhang, Y., Chen, J., Yuan, Y., Gong, X., et al. (2022). Analysis of influencing factors of psychological intervention on international students in China after COVID-19: Hainan Province. *American Journal of Health Behavior*, 46(6), 606–617. <https://doi.org/10.5993/AJHB.46.6.3>
- Lukas, E., & Brugger, A. (2000). *Logotherapy Textbook: Theory and Therapy of Neuroses*. Vienna: Viktor Frankl Institute.
- Lukas ES, Brugger T. *Logotherapy: Textbook: Meaning-centered psychotherapy consistent with the principles outlined by Viktor E. Frankl, MD: The concept of human beings and methods in Logotherapy*. Don Mills, Ont: Liberty Press (2000).
- Lynch, J., Gesing, P., Cruz, N. (2023). International student trauma during COVID-19: Relationships among mental health, visa status, and institutional support. *Journal of American College Health*. <https://doi.org/10.1080/07448481.2023.2166350>
- Maleku, A., Kim, Y. K., Kirsch, J., Um, M. Y., Haran, H., Yu, M., et al. (2022). The hidden minority: discrimination and mental health among international students in the US during the COVID-19 pandemic. *Health & Social Care in the Community*, 30(2), e2419–e2432. <https://doi.org/10.1111/hsc.13683>
- Maleku, A., Lee, S., & Bhandari, R. (2022). Experiences of discrimination among international students during COVID-19. *International Social Work*, 65(1), 42–56. <https://doi.org/10.1177/0020872821999242>
- Maria Michael, J., & Reyes, M. E. (2023). Online mindfulness-based Logotherapy program: a pilot study targeting depressive symptoms of cyberbullied adolescents during the Covid-19 pandemic. *Journal of Technology in Behavioral Science*, 8(1), 1–9. <https://doi.org/10.1007/s41347-022-00279-x>

- Marshall, M. (2012). Exploring the key principles of logotherapy and its impact on clinical practice. *Journal of Psychotherapy Integration*, 22(2), 250-258. <https://doi.org/10.1037/a0028302>
- Marshall, M., & Marshall, E. (2012). Logotherapy revisited: Review of the tenets of Viktor E. Frankl's Logotherapy. *Ottawa Institute of Logotherapy*.
- Martínez, E. Y., & Flórez, I. A. (2015). Meaning-centered psychotherapy: a Socratic clinical practice. *Journal of Contemporary Psychotherapy*, 45(1), 37-48. <https://doi.org/10.1007/s10879-014-9281-0>
- Matos Fialho, P. M., Spatafora, F., Kühne, L., Busse, H., Helmer, S. M., & Zeeb, H. (2021). Perceptions of study conditions and depressive symptoms during the COVID-19 pandemic among university students in Germany: Results of the International COVID-19 Student Well-Being Study. *Frontiers in Public Health*, 9, 674665. <https://doi.org/10.3389/fpubh.2021.674665>
- McLafferty, C. (2016). "Meaning until the last breath": Practical applications of logotherapy in the ethical consideration of coma, brain death, and persistent vegetative states. In: Batthyány, A. (Ed.), *Logotherapy and Existential Analysis*. pp. 365-376.
- Melton, A. M. A., & Schulenberg, S. E. (2008). On the measurement of meaning: Logotherapy's empirical contributions to humanistic psychology. *The Humanistic Psychologist*, 36(1), 1-14. <https://doi.org/10.1080/08873260701828870>
- Mendez, M. (2004). *A life with meaning: Guide to the fundamental principles of Viktor E. Frankl's logotherapy*. Victoria, BC: Trafford.
- Mihrshahi, S., Dharmayani, P. N. A., Amin, J., Bhatti, A., Chau, J. Y., Ronto, R., et al. (2022). Higher prevalence of food insecurity and psychological distress among international university students during the COVID-19 pandemic: an Australian perspective. *International Journal of Environmental Research and Public Health*, 19(21), 14101. <https://doi.org/10.3390/ijerph192114101>
- Migration Data Portal <http://migrationdataportal.org>. International Organization for Migration (IOM) (2020).
- Mohabbat-Bahar, S., Golzari, M., Moradi-Joo, M., & Akbari, M. E. (2014). Efficacy of group logotherapy on decreasing anxiety in women with breast cancer. *Iranian Journal of Cancer Prevention*, 7(4), 165-170.
- Mohammadi, F., Fard, F. D., & Heidari, H. (2014). Effectiveness of logotherapy in hope of life in the women depression. *Procedia - Social and Behavioral Sciences*, 159, 643-646. <https://doi.org/10.1016/j.sbspro.2014.12.440>
- Moreno, M. A., Jelenchick, L. A., Egan, K. G., Cox, E., Young, H., Gannon, K. E., et al. (2011). Feeling bad on Facebook: depression disclosures by college students on a social networking site. *Depression and Anxiety*, 28(6), 447-455. <https://doi.org/10.1002/da.20805>
- Morgan, J. H. (2012). Late-life depression and the counseling agenda: exploring geriatric logotherapy as a treatment modality. *International Journal of Psychological Research*, 5(2), 99-105.
- Mortell, S. (2020). Logotherapy to mitigate the harmful psychological effects of current events: a tool for nurses. *Journal of Psychosocial Nursing and Mental Health Services*, 58(1), 38-42. <https://doi.org/10.3928/02793695-20200127-01>

- Mosalanejad, L., & Khodabakshi, K. A. (2013). Looking at infertility treatment through the lens of the meaning of life: the effect of group logotherapy on psychological distress in infertile women. *International Journal of Fertility & Sterility*, 6(4), 224-231.
- Nassif, C., Schulenberg, S., Hutzell, R. R., & Rogina, J. (2009). Clinical Supervision and Logotherapy: Discovering Meaning in the Supervisory Relationship. *Journal of Contemporary Psychotherapy*, 40(1), 21-29. <https://doi.org/10.1007/s10879-009-9111-y>
- Necef, I. (2014). International students' homesickness and depression associations with mood regulation expectancies, acculturation and attachment. Fullerton: California State University.
- Negash, S., Kartschmit, N., Mikolajczyk, R. T., Watzke, S., Matos Fialho, P. M., Pischke, C. R., et al. (2021). Worsened Financial Situation During the COVID-19 Pandemic Was Associated with Depressive Symptomatology Among University Students in Germany: Results of the COVID-19 International Student Well-Being Study. *Frontiers in Psychiatry*, 12, 743158. <https://doi.org/10.3389/fpsy.2021.743158>
- Negash, S., Sah, R., Singh, B., Clausen, L. S., & Fekadu, N. (2021). Social isolation, loneliness, and depression in young adulthood: a behavioral genetic analysis. *International Journal of Epidemiology*, 50(2), 719-729. <https://doi.org/10.1093/ije/dyaa246>
- Niemiec, R. M., & Wedding, D. (2008). Positive psychology at the movies: Using films to build virtues and character strengths. Cambridge, MA: Hogrefe & Huber.
- Okeke, S. R. (2022). "Compared to COVID, HIV Is Nothing": Exploring how onshore East Asian and Sub-Saharan African international students in Sydney navigate COVID-19 versus BBVs/STIs risk spectrum. *International Journal of Environmental Research and Public Health*, 19(6264). <https://doi.org/10.3390/ijerph19106264>
- Olatunji, E. A., Ogunsola, A., Elenwa, F., Udeh, M., Oginni, I., Nmadu, Y., et al. (2023). COVID-19: Academic, financial, and mental health challenges faced by international students in the United States due to the pandemic. *Cureus*, 15(e41081). <https://doi.org/10.7759/cureus.41081>
- Park C, Shimada S. The impact of changing nonimmigrant visa policies on international students' psychological adjustment and well-being in the United States during the COVID-19 pandemic: a qualitative study. *BMC Pub Health*. (2022) 22:2227. doi: 10.1186/s12889-022-14698-1
- Patron, E. (2014). Homesickness and adjustment in university students. *Journal of American College Health*, 62(1), 1-5. <https://doi.org/10.1080/07448481.2013.843533>
- Patron, M. C. (2014). Loss and loneliness among international students. *Psychological Journal*, 11, 24-43.
- Planchuelo-Gómez, Á., Odriozola-González, P., Iruiria, M. J., & de Luis-García, R. (2020). Longitudinal evaluation of the psychological impact of the COVID-19 crisis in Spain. *Journal of Affective Disorders*, 277, 842-849. <https://doi.org/10.1016/j.jad.2020.09.018>
- Press release. (2023). Nobel prize outreach AB 2023. Retrieved October 17, 2023, from <https://www.nobelprize.org/prizes/peace/2023/press-release/>

- Pytell, T. (2006). Transcending the Angel Beast: Viktor Frankl and humanistic psychology. *Psychoanalytic Psychology*, 23(3), 490–503. <https://doi.org/10.1037/0736-9735.23.3.490>
- Rahgozar, S., & Giménez-Llort, L. (2020). Foundations and applications of Logotherapy to improve mental health of immigrant populations in the third millennium. *Frontiers in Psychology*, 11, 451. <https://doi.org/10.3389/fpsy.2020.00451>
- Rahgozar, S., & Giménez-Llort, L. (2020). Logotherapy to enhance psychological resilience among refugees. *Journal of Refugee Studies*, 33(3), 602-620. <https://doi.org/10.1093/jrs/fez098>
- Rahgozar, S., Giménez-Llort, L. (2022). Immigration and Logotherapy: addressing and mental health problems among Muslim immigrants in Europe. *Life Sciences Forum*. MDPI: Basel, Switzerland.
- Rahiminezhad, A., Kazemi, Z., Farahani, H., Aghamohamadi, S. (2011). Purpose in life and identity dimensions as predictors of maladaptive psychological aspects: a path analysis study. *Social Behavior and Personality: an international journal*, 30(10), 1009-1013. <https://doi.org/10.1016/j.sbspro.2011.10.196>
- Reid, A. E., Cialdini, R. B., & Aiken, L. S. (2022). Social norms and health behavior. In R. J. B. Gellman (Ed.), *Handbook of Behavioral Medicine* (pp. 263-282). Springer. https://doi.org/10.1007/978-1-4614-7399-8_15
- Reid C, Beckstead J, Salinas-Miranda A. COVID-19 stress, social support, and coping in international students during the COVID-19 pandemic: a moderated analysis on anxiety and depression. *J Am Coll Health*. (2022) 70:1–7. doi: 10.1080/07448481.2022.2089044
- Rekenyi, V., Garbóczy, S., Szemán-Nagy, A., Al-Tammemi, A. B., Sayed-Ahmad, M., Kolozsvári, L. R. (2023). The Effects and Differences of Social Support, Depression, and Vital Exhaustion during the COVID-19 Pandemic among International and Domestic University Students. *International Journal of Environmental Research and Public Health*, 20(2), 1502. <https://doi.org/10.3390/ijerph20021502>
- Robotmili, S., Sohrabi, F., Shahrak, M. A., Talepasand, S., Nokani, M., & Hasani, M. (2015). The Effect of Group Logotherapy on Meaning in Life and Depression Levels of Iranian Students. *International Journal of Advancement in Counseling*, 37(1), 54-62. <https://doi.org/10.1007/s10447-014-9225-0>
- Russell, M. A., Reavley, N., Williams, I., Li, W., Tarzia, L., Chondros, P., et al. (2023). Changes in mental health across the COVID-19 pandemic for local and international university students in Australia: a cohort study. *BMC Psychology*, 11(55). <https://doi.org/10.1186/s40359-023-01075-9>
- Saravanan, C., Alias, A., & Mohamad, M. (2017). The effectiveness of cognitive behavioral therapy on the anxiety and depression of Iranian international students. *Clinical Psychology & Psychotherapy*, 24(6), 1423-1437. <https://doi.org/10.1002/cpp.2105>
- Savolaine, J., & Granello, P. F. (2002). The function of meaning and purpose for individual wellness. *Journal of Humanistic Counseling, Education and Development*, 41, 178-189. <https://doi.org/10.1002/j.2164-490X.2002.tb00141.x>
- Schulenberg, S. E. (2003). Psychotherapy and movies: On using films in clinical practice. *Journal of Contemporary Psychotherapy*, 33, 35-48. <https://doi.org/10.1023/A:1021403726961>

- Schulenberg, S. E., Henrion, R. P. (2005). Logotherapy past, present, and future: A conversation with James C. Crumbaugh. *International Forum for Logotherapy*, 28, 65-71.
- Schulenberg, S. E., Hutzell, R. R., Nassif, C., & Rogina, J. M. (2008). Logotherapy for clinical practice. *Psychotherapy: Theory, Research, Practice, Training*, 45(4), 447-463. <https://doi.org/10.1037/a0014331>
- Schulenberg, S. E., Schnetzer, L. W., Winters, M. R., & Hutzell, R. R. (2010). Meaning-Centered Couples Therapy: Logotherapy and Intimate Relationships. *Journal of Contemporary Psychotherapy*, 40(2), 95-102. <https://doi.org/10.1007/s10879-009-9134-4>
- Schluckebier, M. E. (2013). Dreams worth pursuing: how college students develop and articulate their purpose in life. *University of Iowa*. <https://doi.org/10.17077/etd.q5gontba>
- Segal, D. L., Coolidge, F. L., O'Riley, A., & Heinz, B. A. (2006). Structured and semi-structured interviews. In M. Hersen (Ed.), *Clinician's Handbook of Adult Behavioral Assessment* (pp. 121-144). Boston, MA: Elsevier Academic Press.
- Smith, A. (2012). Innovative applications of logotherapy for military-related PTSD. Paper presented at the ACA Conference, San Francisco, CA, March 21.
- Soetrisno, S. S., Ardianto, A., & Hadi, S. (2017). The effect of logotherapy on the expressions of cortisol, HSP70, Beck Depression Inventory (BDI), and pain scales in advanced cervical cancer patients. *Health Care for Women International*, 38, 91-99. <https://doi.org/10.1080/07399332.2016.1237952>
- Somov, P. G. (2007). Meaning of life group: Group application of logotherapy for substance use treatment. *Journal for Specialists in Group Work*, 32(3), 316-345. <https://doi.org/10.1080/01933920701476664>
- Song, B., Zhao, Y., & Zhu, J. (2021). COVID-19-related traumatic effects and psychological reactions among international students. *Journal of Epidemiology & Global Health*, 11, 117-123. <https://doi.org/10.2991/jegh.k.201016.001>
- Spatafora, F., Matos Fialho, P. M., Busse, H., Helmer, S. M., & Zeeb, H. (2022). Fear of Infection and Depressive Symptoms among German University Students during the COVID-19 Pandemic: Results of COVID-19 International Student Well-Being Study. *International Journal of Environmental Research and Public Health*, 19(3), 1659. <https://doi.org/10.3390/ijerph19031659>
- Spore, A. P. (2008). Meaning-centered love: Foundation of meaningful marriage. *International Forum for Logotherapy*, 31, 96-102.
- Sun, F. K., Chiu, N. M., Yao, Y., Wu, M. K., Hung, C. F., & Chen, C. C. (2022). The effects of logotherapy on meaning in life, depression, hopelessness, and suicidal ideation in patients with depression: an intervention study. *Perspectives in Psychiatric Care*, 58, 1891-1899. <https://doi.org/10.1111/ppc.13003>
- Tan, Y., Wu, Z., Qu, X., Liu, Y., Peng, L., Ge, Y., et al. (2022). Influencing Factors of International Students' Anxiety Under Online Learning During the COVID-19 Pandemic: A Cross-Sectional Study of 1,090 Chinese International Students. *Frontiers in Psychology*, 13, 860289. <https://doi.org/10.3389/fpsyg.2022.860289>

- Toumisto, M. T., & Roche, J. E. (2018). Beyond PTSD and Fear-Based Conditioning: Anger-Related Responses Following Experiences of Forced Migration—A Systematic Review. *Frontiers in Psychology, 9*, 2592. <https://doi.org/10.3389/fpsyg.2018.02592>
- Tran, T. X., Vo, T. T. T., & Ho, C. (2023). From Academic Resilience to Academic Burnout among International University Students during the Post-COVID-19 New Normal: An Empirical Study in Taiwan. *Behavioral Sciences (Basel, Switzerland), 13*(206). <https://doi.org/10.3390/bs13030206>
- Tribe, R. H., Sendt, K., & Tracy, D. K. (2019). A systematic review of psychosocial interventions for adult refugees and asylum seekers. *Journal of Mental Health, 28*(6), 662-676. <https://doi.org/10.1080/09638237.2017.1322182>
- Um, M. Y., Harrison, D. F., Darden, M., & Li, Y. (2022). Public health crises and mental health impacts in the context of COVID-19. *Public Health Reports, 137*(2), 319-327. <https://doi.org/10.1177/0033354920985473>
- Um, M. Y., Maleku, A., Haran, H., Kim, Y. K., Yu, M., & Moon, S. S. (2022). Mask-wearing and self-harming thoughts among international students in the United States during COVID-19: The moderating role of discrimination. *Journal of American College Health, 26*(1), 1–7. <https://doi.org/10.1080/07448481.2022.2103378>
- UNHCR. (2020). The United Nations Refugee Agency. Retrieved from <https://www.unhcr.org>
- Van de Velde, S., Buffel, V., Bracke, P., Van Hal, G., Somogyi, N. M., Willems, B.; C19 ISWS consortium. (2021). The COVID-19 International Student Well-being Study. *Scand J Public Health, 49*, 114-122. <https://doi.org/10.1177/1403494820981186>
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R. S., et al. (2020). A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain Behav Immun, 87*, 40–48. <https://doi.org/10.1016/j.bbi.2020.04.028>
- Winsper, C., Crawford-Docherty, A., Weich, S., Fenton, S. J., & Singh, S. P. (2020). How do recovery-oriented interventions contribute to personal mental health recovery? A systematic review and logic model. *Clin Psychol Rev, 76*, 101815. <https://doi.org/10.1016/j.cpr.2020.101815>
- World Health Organization. (2020). World Health Organization and statement on the second meeting of the international health, regulations (2005) emergency committee regarding the outbreak of novel coronavirus (2019-nCoV). Retrieved from [https://web.archive.org/web/20200131005904/https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://web.archive.org/web/20200131005904/https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov))
- World Health Organization. (2020). WHO director-General’s opening remarks at the media briefing on COVID-19 - 11 March 2020. Geneva: World Health Organization.
- World Health Organization. (2020). Timeline of WHO’s response to COVID-19. Retrieved from <https://www.who.int/news-room/detail/29-06-2020-covidtimeline>
- Yalom, I. D., & Leszcz, M. (2005). When Nietzsche wept, a novel of obsession. New York: Harper Perennial.
- Yalom, I. D., & Leszcz, M. (2008). The Theory and Practice of Group Psychotherapy. New York, NY: Basic Books.

- Yi, Y., Lagniton, P. N. P., Ye, S., Li, E., & Xu, R.-H. (2020). COVID-19: What has been learned and to be learned about the novel coronavirus disease. *International Journal of Biological Sciences*, *16*(10), 1753–1766. <https://doi.org/10.7150/ijbs.45134>
- Yuan, L., Lu, L., Wang, X., Qu, M., Gao, Y., Pan, B. (2023). Comorbid anxiety and depressive symptoms and the related factors among international medical students in China during COVID-19 pandemic: A cross-sectional study. *BMC Psychiatry*, *23*, 165. <https://doi.org/10.1186/s12888-023-04638-7>
- Zhang, C., Yang, L., Liu, S., Ma, S., Wang, Y., Cai, Z., et al. (2020). Survey of insomnia and related social psychological factors among medical staff involved in the 2019 novel coronavirus disease outbreak. *Front Psych*, *11*, 306. <https://doi.org/10.3389/fpsy.2020.00306>
- Zhang, S. X., Wang, Y., Rauch, A., & Wei, F. (2020). Unprecedented disruption of lives and work: Health, distress, and life satisfaction of working adults in China one month into the COVID-19 outbreak. *Psychiatry Research*, *288*, 112958. <https://doi.org/10.1016/j.psychres.2020.112958>
- Zhang, X., Wong, G. T. F., Liu, C. H., Hahm, H. C., & Chen, J. A. (2022). International student stressors and mental health during the COVID-19 pandemic: A qualitative study. *J Am Coll Health*, *12*, 1–7. <https://doi.org/10.1080/07448481.2022.2068015>
- Zotova, N. (2018). Religion and Mental Health among Central Asian Muslim Immigrants in Chicago Metropolitan Area. *Migration Lett*, *15*(3), 361–376. <https://doi.org/10.33182/ml.v15i3.358>
- Zhang, X., Parasath, R. P., Zhang, Q., Jeon, L. (2022). International students' perceived discrimination and psychological distress during the COVID-19 pandemic. *J of ACH*. <https://doi.org/10.1080/07448481.2022.2059376>

8 APPENDIXES

8.1. Survey Data and Statistical Analysis

8.1.1. Method

In accordance with the current research design, a multivariate analysis of covariance (MANCOVA) test was employed for the analysis of the main results. Initially, general assumptions and the univariate analysis of covariance assumptions were tested, followed by specific assumptions related to the multivariate analysis of covariance. Based on the obtained statistical results, the following assumptions were satisfied: 1) normality of the dependent variables' correlation (Bartlett's test), 2) homogeneity of variance-covariance matrices (M-Box test), 3) homogeneity of interaction effects, and 4) homogeneity of regression slopes.

Since all four assumptions of the multivariate analysis of covariance test were satisfied, the primary results of the multivariate analysis of covariance are presented. All analyses were conducted using SPSS software, version 26.

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Pillai's trace	.870	204.084 ^a	2.000	61.000	.000	.870	408.169	1.000
Wilks' lambda	.130	204.084 ^a	2.000	61.000	.000	.870	408.169	1.000
Hotelling's trace	6.691	204.084 ^a	2.000	61.000	.000	.870	408.169	1.000
Roy's largest root	6.691	204.084 ^a	2.000	61.000	.000	.870	408.169	1.000

Each F tests the multivariate effect of GROUP. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

- a. Exact statistic
- b. Computed using alpha = .05

The contents of the multivariate analysis of covariance table indicate that logarithmic therapy

significantly affects the levels of depression and anxiety in the experimental group. This is evident from the calculated F value ($F = 8.204$) with a significant level of $p < 0.05$. Additionally, the eta squared coefficient ($\eta^2 = 0.870$) indicates that the observed difference accounts for 89% of the variance in logarithmic therapy.

Univariate Tests

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent . Parameter	Observed Power ^a
POSTANXIETY	Contrast	679.186	1	679.186	267.490	.000	.812	267.490	1.000
POSTDEP	Contrast	558.244	1	558.244	208.810	.000	.771	208.810	1.000

The F tests the effect of GROUP. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

The contents of the univariate analysis of covariance table indicate that logarithmic therapy has a significant effect on the levels of depression and anxiety in the experimental group when compared separately to the control group. This is evident from the calculated F values ($F = 267.490, 208.810$) with a significant level of $p < 0.05$.

Assumption of Normal Distribution of Data:

One-Sample Kolmogorov-Smirnov Test

		GROUP	PREANXIETY	POSTANXIETY	PREDEP	POSTDEP
N		70	70	70	70	70
Normal Parameters ^{a,b}	Mean	1.5000	27.7429	21.3857	26.5000	19.9714
	Std. Deviation	.50361	2.23078	4.38143	2.43614	3.86351
Most Extreme Differences	Absolute	.340	.116	.110	.119	.119
	Positive	.340	.116	.093	.119	.119
	Negative	-.340	-.085	-.110	-.105	-.115
Test Statistic		.340	.116	.110	.119	.119
Asymp. Sig. (2-tailed)		.000 ^c	.020 ^c	.034 ^c	.015 ^c	.015 ^c

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.

The contents of the Kolmogorov-Smirnov table indicate that the distribution of the variable under study in the pre-test and post-test groups is normal, as the calculated z value at a significance level of $p < 0.05$ is not significant.

Assumption of Homogeneity of Interaction Effects: Pre-Test and Independent Variable in the Studied Groups

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^c
Corrected Model	POSTANXIETY	1167.161 ^a	7	166.737	65.668	.000	.881	459.674	1.000
	POSTDEP	864.189 ^b	7	123.456	46.178	.000	.839	323.249	1.000
Intercept	POSTANXIETY	.277	1	.277	.109	.742	.002	.109	.062
	POSTDEP	1.298	1	1.298	.485	.489	.008	.485	.105
GROUP	POSTANXIETY	2.038	1	2.038	.803	.374	.013	.803	.143
	POSTDEP	.051	1	.051	.019	.891	.000	.019	.052
PREANXIETY	POSTANXIETY	.588	1	.588	.232	.632	.004	.232	.076
	POSTDEP	.863	1	.863	.323	.572	.005	.323	.087
PREDEP	POSTANXIETY	.548	1	.548	.216	.644	.003	.216	.074
	POSTDEP	.020	1	.020	.008	.931	.000	.008	.051
GROUP * PREANXIETY	POSTANXIETY	1.810	1	1.810	.713	.402	.011	.713	.132
	POSTDEP	.088	1	.088	.033	.857	.001	.033	.054
GROUP * PREDEP	POSTANXIETY	1.682	1	1.682	.662	.419	.011	.662	.126
	POSTDEP	.214	1	.214	.080	.778	.001	.080	.059
GROUP * PREANXIETY * PREDEP	POSTANXIETY	2.107	2	1.054	.415	.662	.013	.830	.114
	POSTDEP	1.143	2	.572	.214	.808	.007	.428	.082
Error	POSTANXIETY	157.425	62	2.539					

	POSTDEP	165.754	62	2.673					
Total	POSTANXIT Y	33339.0 00	70						
	POSTDEP	28950.0 00	70						
Corrected Total	POSTANXIT Y	1324.58 6	69						
	POSTDEP	1029.94 3	69						

- a. R Squared = .881 (Adjusted R Squared = .868)
- b. R Squared = .839 (Adjusted R Squared = .821)
- c. Computed using alpha = .05

The contents of the interaction effects table indicate that the interaction effect between the pre-test and the independent variable in the studied groups is homogeneous because the calculated F values at a significance level of $p < 0.05$ are not significant.

Assumption of Homogeneity of Variance-Covariance Matrices: Variables Under Study

Box's Test of Equality of Covariance Matrices^a

Box's M	3.446
F	1.112
df1	3
df2	832320.000
Sig.	.343

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + GROUP + PREANXITY + PREDEP + GROUP * PREANXITY + GROUP * PREDEP + GROUP * PREANXITY * PREDEP

The contents of the M-Box test table indicate that the covariance matrices of the variable under study are homogeneous across groups, as the calculated F value at a significance level of $p < 0.05$ is not significant.

Assumption of Normal Correlation Between Variables: A Preliminary Analysis

Bartlett's Test of Sphericity^a

Likelihood Ratio	.442
Approx. Chi-Square	1.422
df	2
Sig.	.491

Tests the null hypothesis that the residual covariance matrix is proportional to an identity matrix.

a. Design: Intercept + GROUP + PREANXITY + PREDEP + GROUP * PREANXITY + GROUP * PREDEP + GROUP * PREANXITY * PREDEP

The Bartlett's test table indicates that there is no significant normal correlation among the variables under study, as the calculated Chi-Square value at a significance level of $p < 0.05$

8.2 Sample of Ethical Consent of the Study

Ethical Consent

This study aims to improve the mental health and well-being of Iranian international students in European countries who have moderate anxiety and depression during the COVID-19 pandemic through online group logotherapy sessions.

Objective of the Investigation:

The objective is to measure the actual effectiveness of logotherapy, ensuring it is a practical and successful approach to improving the mental health of Iranian international students with a moderate level of depression and anxiety.

Requirements:

Volunteers should visit the website <https://logotherapy.eu/> and complete two questionnaires found on the main page. An individual clinical interview will be conducted with volunteers who have completed the questionnaires on the website by the investigation's therapist. The online logotherapy sessions will consist of six 90-minute sessions conducted once a week.

Required Time:

- The individual clinical interview will last one hour.
- Completing the questionnaires will take about an hour for each person.
- There will be six sessions of group therapy, each lasting 90 minutes.

Risks and Benefits:

There are no known risks associated with participation. Instead, this provides an opportunity for participants to enhance their well-being through free logotherapy sessions.

Compensation:

No compensation will be provided for participation in this research.

Confidentiality:

If you choose to participate, your identity remains confidential, and only the research team member will have access to the project data. If it were the case of the study were to be presented, pseudonyms would always be used.

This informed consent will be kept safe by the main investigators and will be destroyed after five years after the investigation has finished. When the study has been completed and the data analyzed, the entire database will be anonymized and made available to the rest of the researchers interested.

Voluntary participation:

Participation in this study is entirely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at any time without giving explanations and without negative consequences; however, it would be best if you informed the researcher before leaving the group.

Eventual publication/ reuse/other processing of primary data is retention period:

Research data will be made available to other researchers anonymously after five years after the end of the project. The personal identifiers will be destroyed (alternatively, the information can be kept confidential through an agreement and access restricted to researchers who sign the same informed consent).

Recordings and use of testimonials:

--- I agree that it is serious (audio/video) the interview with research objectives.

-----I authorize those literal quotations of my interventions be made without mentioning my name/reproducing in the audio/video my own without saying my name.

--- I authorize the use of my audio/video investigation for purposes of scientific dissemination, if mechanisms are organized to preserve my privacy.

With whom to contact if you have any questions about the study:

This research is supervised by Dr. Lydia Gimenez Llord, Associate Professor in Psychiatry and Research in Behavioral Neuroscience and Biological Psychiatry in the Department of Psychiatry and Forensic Medicine, Faculty of Medicine and the Institute of Neurosciences of the Universitat Autònoma de Barcelona. It also will be conducted by Shirin Rahgozar, the Ph.D. researcher student and Psychotherapist.



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Consent:

- I have read the information about the research project, and I have had the opportunity to ask questions, which have been answered satisfactorily.

- I understand that this project's anonymized information (without personal identifiers) will be made available to other researchers after a project has been completed.

- I agree to participate, and I have received a copy of this consent.

Name and Surname of the participant-----

Participant Signature.

Date

Researcher Signature

Date