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Graduate Student Well-Being: A Systematic Review

Özge Gökten Bayrak*

Abstract

Recent studies indicate that graduate students experience higher levels of stress, anxiety, depression, and physical health issues, resulting in the lowest levels of well-being compared to other groups in higher education settings. The COVID-19 pandemic has further exacerbated these negative experiences. This study aims to evaluate recent research on well-being of graduate students through a systematic review. The study was conducted by searching article abstracts in databases: JSTOR, Science Direct, ERIC, DergiPark, and TR Dizin using both Turkish and English keywords. A total of 781 publications were reviewed, and 12 studies were included in the detailed analysis based on predefined eligibility criteria. The review results show that the concept of well-being has been approached from different theoretical perspectives and research methods. Key findings indicate that graduate students face unique stressors, such as work-life imbalance, high academic pressures, faculty-student relationships, socialization within academic communities, and often limited social support, all of which contribute to lower well-being. Based on the results, several recommendations for supporting graduate students' well-being in both their academic and personal lives are proposed.

Keywords: Well-being, Graduate students, Higher education, Systematic review

Introduction

This For many years, the concept of “well-being” has been a research focus for researchers in many disciplines, including behavioral sciences and psychology. Being a multidimensional and complex concept, throughout the years, many different definitions have been proposed with the purpose of achieving an in-depth understanding of well-being (Bautista et al., 2023). Often, it is used interchangeably with “health”/“mental health” or “happiness”. For example, the World Health Organization (WHO) defines health as the “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, n.d.), while the National Academies of Sciences, Engineering, and Medicine (2021) describe well-being as “a holistic concept referring to both physical and mental health”. Likewise, some researchers argue that “well-being, utility, happiness, life satisfaction, and welfare” can be used synonymously (Easterlin, 2005), while others argue that these concepts are distinct from each other “conceptually, metaphysically, and empirically” (Raibley, 2011). Despite the disagreement and different perspectives and approaches to describing well-being, it is accepted as a multifaceted phenomenon, associated with physical, psychological and mental health that can be affected by many life experiences and circumstances (Diener, 2006; Yusuf et al., 2020).

The significance of well-being research has grown in higher education, especially concerning university students and personnel. Graduate students, in particular, face unique challenges and responsibilities, often balancing roles as students, researchers, teaching assistants, and family members. Although their well-being has been overlooked in empirical research (Sverdlik & Hall, 2020); recent findings reveal that graduate students experience significantly higher levels of stress, depression, anxiety, and physical

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health symptoms compared to the general population (Jackman et al., 2023). This alarming trend underscores the urgency of addressing their well-being, as graduate students often represent one of the most vulnerable groups in higher education institutions.

The demands placed on graduate students are unparalleled, requiring them to navigate academic, professional, and personal responsibilities simultaneously. The resulting pressure affects not only their physical and mental health but also their academic performance and ability to contribute effectively to their fields of study. These challenges have far-reaching implications for higher education systems, as graduate students play a critical role in advancing research and innovation, teaching undergraduates, and maintaining institutional operations. When their well-being is compromised, the effects ripple through the academic ecosystem, potentially diminishing the quality of education and research outputs.

Moreover, the recent COVID-19 pandemic has exacerbated these challenges worldwide, increasing existing stressors and introducing new ones. During this period, graduate students faced greater challenges trying to balance concerns about their own and loved ones' health while also coping with remote work/study demands (Sverdlik et al., 2022). These experiences highlight systemic vulnerabilities in higher education that have significant implications for institutions' capacity to support students and their well-being effectively during crises. Ensuring graduate student well-being is critical, as poor well-being has both short-term and long-term consequences. These include diminished academic performance, reduced research productivity, and, ultimately, threats to the sustainability of higher education, as these students are the future academics who will shape the field and supervise other students (Schmidt & Hansson, 2018; Vera et al., 2010).

Addressing graduate student well-being, therefore, is not just an individual concern but an institutional imperative. Developing comprehensive support systems and fostering an environment that prioritizes well-being is essential for maintaining the integrity and sustainability of higher education. By understanding the factors that affect graduate student well-being, institutions can enhance not only the experiences of students but also the overall quality of education and research outputs, ensuring the continued advancement of knowledge and innovation.

While global studies on graduate student well-being have increased, cultural differences remain underexplored, especially in non-Western contexts such as Türkiye. Cultural nuances play a pivotal role in shaping how individuals perceive, define, and experience well-being, making it essential to examine these factors in-depth. In many countries, societal attitudes towards mental health and well-being in general, may differ from those in Western contexts. For instance, it may carry stigma to discuss well-being concerns or to seek help in certain cultures. This cultural barrier can exacerbate feelings of isolation and reduce access to support systems for graduate students facing significant challenges.

The distinction between collectivist and individualist cultures may also influence individuals' well-being experiences. In collectivist cultures, where family and community are central to individual identity and decision-making; this can either provide emotional support to the individual or put additional pressure on them because of cultural expectations. Institutional support structures may also reflect societal and cultural nuances. The availability and accessibility of well-being or mental health facilities may differ in different contexts based on financial constraints or differing priorities of higher education institutions and higher education policies. Therefore, a deeper exploration of these cultural dynamics is crucial for understanding the unique challenges faced by graduate students in different contexts, such as Türkiye. By identifying culturally specific stressors and supports, researchers and policymakers can develop more effective, localized strategies for promoting graduate student well-being. Furthermore, incorporating cultural perspectives into the global discourse on well-being can enrich existing frameworks and highlight the diversity of experiences among graduate students. It encourages the development of universal models that are more inclusive and adaptable to different cultural contexts.

Graduate Student Well-Being

Undertaking a graduate degree can be really challenging. Most graduate school applicants are highly achieved; however, due to the extreme competitiveness of graduate programs, gaining admission and

completing the programs can be incredibly draining (Ali & Kohun, 2006; Cassuto, 2013). Graduate students need to invest themselves and their time and resources in learning, researching, teaching, as well as trying to balance their personal life responsibilities as parents, significant others, or sometimes as employees outside of academia (Ryan et al., 2022). Many studies in the literature emphasized that graduate students suffer from severe anxiety, depression, chronic stress, mental health concerns, alarming physical health symptoms, and diminished quality of life (e.g. Barreira et al., 2018; Brown & Watson, 2010; Evans et al., 2018; Juniper et al., 2012). Moreover, studies indicate that graduate students are overwhelmed by their academic burdens, including their academic responsibilities and pressures, financial problems and debt (El-Ghoroury et al., 2012), as well as insomnia and social dysfunction (Pallos et al., 2005). Studies also found that unproductive student-supervisor/advisor relationship, peer pressure, pressure to publish academic work, high workload, and inability to balance work and personal life are among the stressors for graduate students, especially doctoral students (Huisman et al., 2002; Kurtz-Costes et al., 2006; Mays & Smith, 2009; Schmidt & Umans, 2014).

In addition to the common challenges that graduate students face, the effect of COVID-19 on graduate students, just like on everybody else, seems serious. The recent studies focusing on graduate students and how they were affected by the pandemic reported that graduate students suffer from post-traumatic stress disorder (PTSD) (Li et al., 2021), they feel overwhelmed and exhausted as they had delays with their fieldworks or in-person data collection, and they struggle with work-life balance even more, especially if they are the caregivers, as it is difficult to study or work from home with all the family responsibilities at home (Levine et al., 2021).

While some studies in the literature focused on the negative effects on graduate students' well-being, some other studies emphasized the positive effects. For instance, some studies indicated that positive academic socialization empowers graduate students (Stubb et al., 2011); positive relationships with the academic supervisor and mentoring increase students' self-efficacy beliefs (Paglis et al., 2006), demonstrations of care and concern from the supervisor increase graduate students' sense of belonging (Burt et al., 2021), which all ultimately lead to increased well-being.

The Current Study

When existing literature on graduate students' well-being is examined, it is seen that previous studies focus well-being from different perspectives, rather than holistically investigating the phenomenon. Based on these, this systematic review aims to examine the research studies conducted on graduate students' well-being, focusing on the last five years in order to address up-to-date studies and to catch the possible effect of COVID-19 and to provide suggestions for further research and practice.

As aforementioned, there is an ongoing debate concerning the definition of well-being. Because it is multilayered, well-being is associated with other concepts as health or happiness, and also it has its own layers such as subjective well-being, mental well-being, psychological well-being, and ontological well-being (Kocayörük et al., 2018). The current study, acknowledging the various definitions of well-being, focuses on graduate students' well-being in a comprehensive and pragmatic sense. The definition proposed by Medin and Alexanderson (2001) and used as a framework for the critical literature review by Schmidt and Hansson (2018) has been adopted for the current study: well-being is "the individual's experience of his or her health" (Medin & Alexanderson, 2001, p. 75).

This comprehensive definition aligns with multidimensional perspectives of well-being that encompass physical, mental, and emotional aspects of health. Unlike narrower frameworks that focus on specific dimensions, such as subjective happiness or solely physical health, Medin and Alexanderson's (2001) approach integrates these facets into a holistic understanding, positioning well-being as an overarching construct rooted in personal experience. By adopting this comprehensive framework, the current study ensures an inclusive and adaptable lens for examining graduate students' well-being. This perspective enables the exploration of the multifaceted challenges faced by graduate students, incorporating elements of physical, psychological, and emotional health. Moreover, it lays a strong foundation for synthesizing research findings and developing strategies that address the diverse and interconnected aspects of well-being in graduate student population.

Method

A systematic review is a structured approach to synthesizing research evidence with the aim of answering a pre-defined research question. It involves the comprehensive identification of all relevant primary research, the critical appraisal of the included studies, and the synthesis of their findings (Pollock & Berge, 2018). In the current study, in order to conduct the systematic review, the following steps were carried out in May 2024.

First, the databases to be searched were chosen based on the depth of empirical studies they contain and their inclusion of open access articles. Ultimately, in order to access studies that were conducted globally and also in Türkiye, the following databases were searched: JSTOR, Science Direct, ERIC, DergiPark, and TR Dizin. It was aimed to identify articles in English and in Turkish; therefore, the same databases were searched twice: once using keywords in English and once in Turkish. The command used to search articles' abstracts in English was: (((ab:"well-being") OR (ab:"wellbeing") OR (ab:"well being"))) AND ((ab:"doctoral students") OR (ab:"master's students") OR (ab:"graduate students") OR (ab:"phd students")))). And the command used to search abstracts in Turkish was: (((ab:"iyi oluş") OR (ab:"iyilik"))) AND ((ab:"doktora") OR (ab:"yüksek lisans") OR (ab:"phd") OR (ab:"lisansüstü")))). With these commands, the databases listed all the results relating to these keywords. The Table 1 below indicates the search process and the items that were found.

Table 1. Search process

Order of search	Search action	Databases					Number of articles
		JSTOR	Science Direct	ERIC	DergiPark	TR Dizin	
1	Keyword search	24	522	219	8	8	781
2	Filter: journals	17	440	142	6	6	613
3	Filter: peer-reviewed	17	440	138	6	6	609
4	Filter: time period: since 2020	2	131	91	3	6	233
5	Filter: language	2	54	91	3	6	150
6	Reduction by lack of relevance	0	1	11	0	0	12

Eligibility criteria were determined among the results, in order to ensure coherence and relevancy in this study: 1) results specifically relevant to the purpose of the current study, 2) selection of the content as journals for including empirical studies, 3) selection of peer-reviewed journals, 4) limiting the publication time as from 2020 to May 2024, in order to access up-to-date studies and to focus on graduate students' well-being after COVID-19, and 5) selecting the language as Turkish and English.

While this approach allows for a comprehensive examination of the literature, including studies only in these two languages inherently excludes research published in other languages, which may result in potential bias and limit the generalizability of the findings. Additionally, the reliance on open-access databases may have introduced a selection bias, as certain studies published in subscription-based journals might not have been included. These limitations were acknowledged, and efforts were made to mitigate their impact by conducting a thorough and systematic search to capture the most relevant and accessible studies.

In addition to these, the exclusion of studies focusing solely on undergraduate students or mental health was intentional to maintain the focus on the unique experiences of graduate students. The nature of mental health discussions in the context of undergraduate students is different from those at the graduate level, where issues related to academic identity, research pressures, and advisor relationships are more relevant.

Findings

Description of the Findings

The results identified 781 article abstracts in total after using the keywords in all databases. After applying the eligibility criteria, the results showed 150 studies. At that point, all remaining abstracts/articles were screened for relevancy and if there are any duplicates among databases. The articles that focus on undergraduate students or on students' mental health only were excluded from the study. Finally, 12 studies were identified that purely focus on graduate students' well-being and meeting the eligibility criteria, in order to conduct a well-tailored systematic review. Table 2 presents the studies included in the systematic review.

Table 2. Studies included in the systematic review

Authors/Year	Title of the Article	Country	Sample
Yusuf et al. (2020)	Work-life balance and well-being of graduate students	USA	343 graduate students
Sverdlik and Hall (2020)	Not just a phase: Exploring the role of program stage on well-being and motivation in doctoral students	Canada	3004 doctoral students
Koo et al. (2021)	"It's My Fault": Exploring Experiences and Mental Wellness Among Korean International Graduate Students	USA	15 international doctoral students
Ryan et al. (2021)	How can universities better support the mental wellbeing of higher degree research students? A study of students' suggestions	Australia	595 graduate students
Schwoerer et al. (2021)	#PhDlife: The effect of stress and sources of support on perceptions of balance among public administration doctoral students	USA	254 doctoral students
Sverdlik et al. (2022)	Doctoral students and COVID-19: exploring challenges, academic progress, and well-being	Canada	708 doctoral students
Zhang et al. (2022a)	International Doctoral Students' Sense of Belonging, Mental Toughness, and Psychological Well-Being	USA	3 international doctoral students
Zhang et al. (2022b)	Social predictors of doctoral student mental health and well-being	USA	336 doctoral students
Jackman et al. (2023)	Social support, social identification, mental wellbeing, and psychological distress in doctoral students: A person-centred analysis	UK	200 doctoral students
Griffin et al. (2023)	Surviving or flourishing: how relationships with principal investigators influence science graduate students' wellness	USA	90 doctoral students
Lorenzetti et al. (2023)	Exploring International Graduate Students' Experiences, Challenges, and Peer Relationships: Impacts on Academic and Emotional Well-being	Canada	13 international graduate students
Shanachilubwa et al. (2023)	Investigating the tension between persistence and well-being in engineering doctoral programs	USA	4 doctoral students

Of the reviewed 12 articles, seven of them were conducted in the USA, three of them were in Canada, one in the UK, and one in Australia. While three of the studies included all graduate students, including master's and doctoral students, nine of the studies focused only on doctoral students. Three of the studies explicitly focused on international graduate students. 11 of the articles were published in educational research journals (e.g. Higher Education Research & Development, Educational Psychology, Journal of Public Affairs Education), and one article was published in a journal in the field of science.

Operationalization of Well-Being Used in the Studies

The studies in this review vary in their operationalization of well-being, reflecting its multidimensional and subjective nature. Some studies prioritize specific aspects, such as mental or emotional well-being, while others adopt a broader, multi-dimensional approach.

Sverdlik and Hall (2020) exemplify this by treating well-being as a construct influenced by stress, depression, program satisfaction, and illness symptoms. Similarly, Ryan et al. (2021) acknowledge the multifaceted nature of well-being, exploring how various university-level interventions might impact graduate students' overall well-being. By contrast, Zhang et al. (2022b) focuses on graduate students' mental health and the predictors and outcomes tied to socialization processes, without offering an explicit operational definition.

Some studies offer structured frameworks: Yusuf et al. (2020) operationalizes well-being as "multi-dimensional with three components: quality of life, physical health, and mental health" (p.3). The authors use quality of life and subjective well-being interchangeably throughout their study. In order to explore graduate students' well-being, the study investigates their work-life balance, comprising of several factors, as well as sources of stress and sources of support. Schwoerer et al. (2021) similarly examines well-being through the lens of work-life conflict, examining how support (e.g., emotional, academic) and stressors impact graduate student well-being. Shanachilubwa et al. (2023) argues that well-being is "ill-defined with colloquial usage of terminology" (p. 588) and proposes a six-dimensional model including positive emotion, engagement, relationships, meaning, accomplishment, and vitality. In addition, Griffin et al. (2023), defines well-being as "*a process and the practice of balancing competing interests in the pursuit of well-being, which is one's state of physical, mental and emotional health*" (p. 48), while investigating factors affecting graduate student well-being.

Few studies focus on specific populations and contextual challenges. For example, Koo et al. (2021), Zhang et al. (2022a), and Lorenzetti et al. (2023) investigate mental health, psychological well-being, and emotional well-being, respectively, among international graduate students, while Sverdlik et al. (2022) explores the effects of COVID-19 on psychological well-being, academic progress, and coping strategies. Jackman et al. (2023) advocates for a person-centered approach, suggesting that measuring well-being with variable-centered approaches might obscure individual differences in perceived and received support and social identification.

Theoretical Frameworks Used in the Studies

The studies reviewed utilized diverse theoretical frameworks to analyze graduate students' well-being, each offering unique insights into the complex factors that shape these experiences. Table 3 below maps the theoretical frameworks that were adopted by the studies included in the systematic review.

Table 3. Theoretical frameworks adopted by the studies

Authors/Year	Theoretical Framework
Yusuf et al. (2020)	Social cognitive theory, Structuration theory, Work/family border theory
Sverdlik and Hall (2020)	Self-determination theory, Social learning theory
Koo et al. (2021)	Holistic wellness model
Ryan et al. (2021)	Job Demands-Resources framework
Schwoerer et al. (2021)	New framework introduced focusing on support, stress, and role conflicts
Sverdlik et al. (2022)	Did not explicitly mention any framework
Zhang et al. (2022a)	Did not explicitly mention any framework
Zhang et al. (2022b)	Graduate socialization theory
Jackman et al. (2023)	Social identity approach
Griffin et al. (2023)	Wheel of wellness model
Lorenzetti et al. (2023)	Intersectionality theory, critical multiculturalism
Shanachilubwa et al. (2023)	PERMA-V framework

Yusuf et al. (2020) drew on multiple theories to explore graduate students' work-life balance. First, Bandura's social cognitive theory provided a basis for understanding human functioning as socially interdependent and shaped by societal dynamics. They also applied Giddens' (1984) structuration theory to examine how students balance work and personal life and employed work/family border theory to understanding students' work-life balance and how they manage their boundaries.

Sverdlik and Hall (2020), while examining graduate students' program phases' (e.g. coursework, dissertation phase) effect on students' motivation and well-being, benefitted from self-determination theory (Litalien & Guay, 2015) and social learning theory (Bandura, 1993) in order to measure motivation.

Holistic wellness models were applied in several studies. Koo et al. (2021) adopted the holistic wellness model by Chandler, Holden, and Kolander (1992) to examine international graduate students' well-being across six wellness dimensions, while Griffin et al. (2023) used the wheel of wellness model by Myers, Sweeney, and Witmer (2000), emphasizing spirituality, self-direction, and social relationships to assess factors affecting students' experiences.

Some studies focused on stressors and resources within the academic environment. Ryan et al. (2021) employed the Job Demands-Resources framework (Demerouti & Bakker, 2011; Schaufeli & Taris, 2014) to explore how imbalances between demands and resources in doctoral programs impact well-being and psychological distress. Schworer et al. (2021) proposed a new framework to understand doctoral students' well-being, emphasizing the dynamic relationship between support, stress, and role conflicts.

Other studies focused on social and cultural dimensions. Zhang et al. (2022b), while investigating mental health and well-being of doctoral students, benefitted from graduate socialization theory, which was described as "*a process of internalizing the expectations, standards, and norms of a given society (discipline), which includes learning the relevant skills, knowledge, habits, attitudes, and values of the group that one is joining*" (Austin & McDaniels, 2006). Jackman et al. (2023) adopted the social identity approach to explore how social support and in-group/out-group dynamics affect mental well-being. Lorenzetti et al. (2023) used intersectionality theory (Crenshaw, 1994) and critical multiculturalism (McLaren, 1995) to analyze the acculturation experiences and barriers faced by international students.

Finally, Shanachilubwa et al. (2023) employed the PERMA-V model (Zhivotovskaya & Seligman, 2018), which includes six dimensions—positive emotion, engagement, relationships, meaning, accomplishment, and vitality—to measure well-being over time and across personal characteristics.

A couple of studies included in the systematic review did not explicitly mention adopting a theoretical framework, but provided valuable empirical insights into graduate students' well-being (Sverdlik et al., 2022; Zhang et al., 2022a). These studies shed light on factors such as stress levels, coping mechanisms, and institutional support structures. While the lack of a defined framework limits the theoretical integration of these findings, they still enrich the discourse by highlighting practical and context-specific challenges faced by graduate students. These contributions underscore the importance of both theoretical and empirical perspectives in painting a comprehensive picture of well-being in higher education.

Methods Used in the Studies

Among 12 articles that were reviewed, six of the studies were designed as quantitative studies, while five as qualitative, and one as a mixed methods study. Table 4 below presents the research designs used in these studies.

Table 4. Research designs used in the studies

Authors/Year	Design
Yusuf et al. (2020)	Quantitative
Sverdlik and Hall (2020)	Quantitative
Koo et al. (2021)	Qualitative
Ryan et al. (2021)	Qualitative
Schwoerer et al. (2021)	Quantitative
Sverdlik et al. (2022)	Quantitative
Zhang et al. (2022a)	Qualitative
Zhang et al. (2022b)	Quantitative
Jackman et al. (2023)	Quantitative
Griffin et al. (2023)	Qualitative
Lorenzetti et al. (2023)	Qualitative
Shanachilubwa et al. (2023)	QUAL quan mixed methods

The one mixed methods study was designed as an embedded QUAL (quan) mixed-methods stud, and the data were collected in qualitative semi-structured interviews and a survey-based PERMA-V profiling instrument (Shanachilubwa et al., 2023). The qualitative studies collected data through semi-structured interviews (Griffin et al., 2023; Koo et al., 2021; Lorenzetti et al., 2023; Zhang et al., 2022a) and open-ended survey questions (Ryan et al., 2021). The quantitative studies used survey questions in order to collect data (Jackman et al., 2023; Schworer et al., 2021; Sverdlik & Hall, 2020; Sverdlik et al., 2022; Yusuf et al., 2020; Zhang et al., 2022b).

The qualitative data were analyzed using a variety of methods, such as thematic analysis (Griffin et al., 2023; Lorenzetti et al., 2023; Shanachilubwa et al., 2023; Zhang et al., 2022a); narrative configuration analysis (Shanachilubwa et al., 2023), constant comparative method (Koo et al., 2021; Ryan et al., 2021), and within-case and cross-case analysis (Zhang et al., 2022a). The quantitative data were analyzed through descriptive statistics (Sverdlik et al., 2022) or inferential statistics analysis methods, such as ANOVA (Jackman et al., 2023; Sverdlik & Hall, 2020; Yusuf et al., 2020), chi square tests (Sverdlik & Hall, 2020), and regression (Jackman et al., 2023; Schworer et al., 2021; Zhang et al., 2022b), and latent profile analysis (Zhang et al., 2022b)

Results

The studies reviewed for the current systematic review approached well-being from a variety of perspectives and investigated graduate students' well-being from different aspects. In this part, the results of the studies will be presented.

Griffin et al. (2023) investigated the influences on graduate students' well-being with a qualitative study and found four key themes: work-life balance, managing progress on research, program completion and job search, and overall faculty relationships. The results also showed that the faculty relationships can influence well-being directly in a positive or negative manner, as well as affecting how students' cope with other sources of stress. Similarly, Shanachilubwa et al. (2023) explored well-being of graduate students from a wider perspective. Acknowledging the multifaceted construct of well-being, the authors used PERMA-V framework to understand the influences of positive emotion, engagement, relationships, meaning, accomplishment, and vitality. The results showed that well-being of graduate students is indeed multifaceted and unique to each student.

Sverdlik and Hall (2020) found that students' well-being can change among doctoral program's stages/phases: coursework, comprehensive examination, and dissertation. The results indicated that graduate students' stress level is the lowest in coursework phase, and highest in the comprehensive examination stage. Moreover, the program satisfaction is highest during coursework, and lowers through each stage. The authors argued that this could cause from the isolation of students as they move through stages, and emphasized the need for student socialization. The study also found that graduate students who were employed within the university showed higher self-efficacy beliefs and motivation, compared to students who were not employed within the university.

Zhang et al. (2022b), while investigating the social factors affecting students' mental health and well-being found that there were no demographic differences among students in terms of gender, race, and ethnicity, which was interesting as this finding contradicted with many previous literature. However, they found that socialization variables, such as certainty of choice, academic development, sense of belonging, and satisfaction with advisor significantly affect mental health and well-being, especially in the early years of doctoral education. Interestingly, the results of the study indicated that academic productivity and confidence in research skills were found to be negatively related with mental health and well-being, meaning that students who seem academically successful and ambitious may suffer from mental exhaustion more, decreasing their well-being.

Jackman et al. (2023) explored the effect of social support and social identification on mental well-being of doctoral students. The authors investigated the socialization of students in relation to peers, advisors, and academic community. The findings revealed that high support and identification are positively related to increased mental well-being and lower psychological distress. However, the authors emphasized that a sense of identification is not enough for mental well-being in the absence of high levels of perceived and received support; and likewise, peer support and peer related identification are not enough for mental well-being in the absence of support from advisors. Similarly, Ryan et al. (2021) focused on what can be done by the universities to increase graduate students' well-being and found that a whole university approach that includes support from peers, advisors, and community is needed. The results of the study revealed that 67% of the suggestions made by the participants were related to the positive interactions with peers, supervisors, and colleagues. Furthermore, the results showed that graduate students need a sense of inclusion/belonging from academic community, care and empathy from advisors, and social support from peers, which are parallel to previous studies' findings in relation to socialization and social support and identification.

Yusuf et al.'s (2020) study also argued that several factors influence well-being as sources of stress and sources of support. Among them, the authors found that "work" sources of stress are related to school and academic life (e.g. workload, course requirements, research, faculty advisor); "life" sources of stress are related to non-academic life (e.g. dating or social life, finances, family issues, childcare and/or eldercare). Moreover, sources of support were found as peers/friends, spouse/partner/significant other,

parent or other family member, academic advisor, other faculty, and graduate program director, respective of their reliance. The overall findings of the study argued that better work-life balance positively impacts quality of life and overall well-being of graduate students. Schwoerer et al. (2021) similarly explored the effect of stress and the sources of support for graduate students. More specifically, the authors focused on four distinct support systems: emotional support, academic mentor support, academic program support, and professional support. The results revealed that sources of social support, (e.g. emotional and mentor support), and sources of institutional support, (e.g. program and professional support), are vital for students' well-being, as increased support reduces stress, leading a higher level of well-being.

Sverdlik et al. (2022) focusing on the effect of COVID-19 on well-being, investigated graduate students' perceived challenges and coping strategies during the pandemic. The most significant challenges that students had to struggle with were found as: a) inability to see family and friends, b) being at home all the time, c) blurring of work and leisure/family time, d) being isolated, and e) inability to access the university. The coping strategies were found as: a) seeking social support from family/friends, b) working (as a distraction), c) exercising, d) watching TV, and e) creating a routine that the person is comfortable with. Furthermore, the results revealed that gender played an important role on well-being during the pandemic. It was highlighted that females had unique challenges, such as role conflict (especially if they are caregivers), and higher anxiety, stress and less sense of belonging, compared to males.

Three of the studies included in the review were conducted with international graduate students (Koo et al., 2021; Lorenzetti et al., 2023; Zhang et al., 2022a). These studies explicitly focusing on international graduate students' experiences were all qualitative and approached mental wellness/well-being (Koo et al., 2021), emotional well-being (Lorenzetti et al., 2023), and psychological well-being (Zhang et al., 2022a). Koo et al. (2021) found that limited English proficiency, self-imposed academic pressures and pressures from faculty and parents, self-blaming, and not knowing how to express feelings that also increases loneliness negatively affected their mental well-being, as well as other well-being aspects, such as physical, social, or occupational. The authors further stated that international graduate students expressed their methods of coping with their struggles as exercising daily or engaging in religious or spiritual activities, even though they did not consider themselves religious or spiritual when they were back home. Lorenzetti et al. (2023) explored three themes relating to international graduate students' experiences: adapting to new environments (settling in: impact of peer networks, funding and finances, communication barriers, loneliness and cultural adaptation); connecting with peers/peer mentors (sense of belonging, knowledge sharing, shared purpose, motivation and coping), and institutional roles (in relation to social and networking opportunities). The results of the study highlighted the importance of formal and informal peer mentoring and its effect on emotional well-being of international graduate students. Zhang et al. (2022a) examined the relationship among sense of belonging, mental toughness, and psychological well-being. The authors found that communication among graduate students and mentors, and peer support increase sense of belonging and psychological well-being. Furthermore, it was found that mental toughness: being able to find resources to cope with struggles (cognition), determination and self-motivation (behavior), and being able to regulating emotions and taking initiatives (affection) increased international graduate students' psychological well-being.

These findings highlight that international graduate students experience distinct challenges compared to their domestic peers, such as navigating cultural adaptation, overcoming language barriers, and coping with feelings of isolation from familial support systems. Unlike domestic students, international students often face the additional stress of balancing academic expectations with adjusting to unfamiliar cultural norms and financial constraints. The reviewed studies emphasize the need for tailored interventions that address these unique pressures.

Overall, the results of the reviewed studies collectively underscore the multifaceted and dynamic nature of graduate student well-being, highlighting influences such as social support, institutional structures, and external factors like the COVID-19 pandemic. Across the literature, well-being has been examined through various lenses, such as the PERMA-V framework (Shanachilubwa et al., 2023), social and

psychological dimensions (Zhang et al., 2022a; Jackman et al., 2023), and program-specific factors (Sverdlik & Hall, 2020). This diversity reflects the complexity of well-being as a construct and the importance of contextual factors in shaping graduate student experiences. However, this breadth also reveals opportunities for further exploration, particularly in integrating diverse operationalizations of well-being and standardizing measurement tools.

Discussion

The results of the current systematic review indicated that well-being is indeed a multilayered concept that can be approached from distinct perspectives and methods (Bautista et al., 2023). However, based on the results of the reviewed studies, the influence of certain factors on graduate students' well-being was clearly demonstrated. The results showed that work-life imbalance, negative relationships or lack of support from peers, advisors, faculty members, or research/academic community, and lower sense of belonging/identification prominently influence graduate students' well-being in a negative manner.

Moreover, the findings from studies conducted during the COVID-19 pandemic provide critical insights into how external crises can exacerbate existing challenges for graduate students. For instance, the pandemic amplified feelings of isolation, blurred boundaries between work and personal life, and heightened stress levels, especially among female students who faced additional caregiving responsibilities. These results highlight the importance of proactive institutional support during times of uncertainty, such as providing virtual peer mentoring programs, ensuring access to mental health resources, and fostering a sense of community through online platforms.

Based on the results of the reviewed studies, few implications for practice that can positively affect graduate students' well-being can be made. First of all, the higher education institutions should create a positive climate that demonstrate dedication for ensuring students' and other key figures' well-being and also increase their sense of belonging and motivation. Students must have access to supportive infrastructure and resources on campus in case they need any help or guidance for sustaining their mental health or well-being. Both faculty members and students should be provided relevant information on well-being for ensuring positive relationship among peers and advisors. Program evaluation forms/surveys can be filled in by students regularly to identify students at risk and also to assess student-peer and student/advisor interactions. The institutions and advisors need to acknowledge that work-life imbalance negatively affects students' well-being and increases negative symptoms, such as anxiety, physical illness, or stress. The universities should offer students support systems so that students can improve their time management skills, or can better regulate their work/academia and personal life roles and responsibilities.

Moreover, additional precautions for international graduate students can be taken. For instance, international students should be aided with cultural adaptation resources on and off campus so that they can better adjust to an unfamiliar place and/or culture. International students should be provided with additional language proficiency resources. These students can be also assigned to a peer-mentor, so that their social integration can be ensured. The advisors of international students should be informed about students' culture, in order to eliminate any possible communication breakdowns or misunderstandings. Likewise, international students should be informed about the host country's culture and rules and regulations of the university, in order to learn about program requirements and eliminate any wrong assumptions. Finally, the higher education institutions in general and advisors in particular should present various opportunities to all students that they can seek guidance and help, in times of uncertainty or difficulties, such as during the pandemic.

It is also possible to make few suggestions for future research. The results of the systematic review revealed that although many of the studies focus on well-being, the studies lack operational definitions of the concept. Likewise, the results revealed inconsistency among measures of well-being. A framework that is utilized for exploring graduate students' well-being can help developing a strong measure for the phenomenon. The results of the review also showed that many studies only focus on a narrow aspect of graduate students' well-being. However, well-being, acknowledged as a multifaceted

concept, can be investigated from a wider perspective to obtain in-depth and more holistic understanding of the concept in the future empirical studies.

While reviewing the literature, articles in Turkish were also searched using Turkish keywords in databases covering Turkish studies. However, this search did not identify any studies from the Turkish context published in peer-reviewed journals after 2020. Given the culture specific nuances of well-being, which is crucial to gain a deeper understanding of graduate students' well-being in Türkiye, further research could be conducted in the Turkish context. Such studies could explore how cultural norms, academic structures, and advisor-student dynamics unique to Türkiye influence graduate student well-being. Additionally, comparative studies between Turkish and international contexts could offer valuable insights into how cultural differences shape the well-being experiences of graduate students.

This systematic review is not without limitations. First, some relevant research may have been inadvertently excluded due to variations in terminology. For example, while searching for articles, the keywords used in English abstracts included 'well-being,' 'well being,' and 'wellbeing'; however, other studies that examine graduate students' well-being may have used alternative terms, such as 'wellness.' To minimize this limitation, the researcher searched for these keywords in abstracts rather than only in titles or keywords, as abstracts typically provide more detailed descriptions. This approach allowed the researcher to capture different variations of the term and access relevant articles. Likewise, the search for articles was conducted only in English and Turkish languages; therefore, it is possible to miss any other empirical studies conducted in other languages. Moreover, this review searched for the articles in databases that offered open access to the articles; therefore, some articles might be falsely excluded due to the accessibility or selection of databases. Despite these limitations, the systematic review provides a comprehensive foundation for future studies and practical interventions aimed at enhancing graduate students' well-being.

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