

Doctoral Student's Psychological Well-Being: A Scoping Review

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Abstract

Doctoral students are a group that is prone to experiencing mental health problems during their study period which provides an overview of their psychological well-being. Generally, the psychological problems that arise in this group are anxiety, depression, and some physical problems. This study basically aims to understand the psychological well-being of doctoral students through an analysis of the concepts related to psychological well-being, how it is measured, and what factors are often connected and influence it. The method used is scoping review with PRISMA-Scr 2020. Articles were obtained from 4 databases namely Scopus, EBSCO, Web of Science, and ScienceDirect. There were 9 articles that were filtered based on certain inclusion and exclusion criteria. The results of this study found that the most frequently used concept to describe the psychological well-being of doctoral students is the subjective well-being of Diener (1984) and Ryff (1989). In addition, the presence/absence of psychological problems is also used as a basis for describing their psychological well-being. Psychological health measurement usually uses SWLS and SPANE from Diener and a psychological health questionnaire from Ryff. Some of the factors identified as related to psychological well-being are relationships with supervisors, research self-efficacy, perfectionism, achievement orientation, and family support. In addition, impostor syndrome and psychology capital (PsyCap) function as mediator variables.

Keywords: psychological well-being, doctoral student, doctoral program, Ph.D. student.

In recent years, the focus on the psychological well-being of doctoral students has significantly increased (Kumar & Kaur, 2019; Müller et al., 2022; Yang & Bai, 2020). This heightened attention is not only due to the growing number of students pursuing doctoral degrees but also because mental health issues within this group are becoming more apparent. Doctoral students face a variety of challenges throughout their studies, including the need to

enhance their skills and complete a significant academic milestone, known as the dissertation, which requires them to conduct scientific research (Ma, 2019; Sorrel et al., 2020). These challenges, both personal and interpersonal, often do not have positive effects and can even threaten their psychological well-being (Cesar et al., 2018; Ismail et al., 2019; McGee et al., 2019).

The discovery that the number of doctoral students withdrawing or failing to complete their

studies is increasing has further raised concerns about their mental health and psychological well-being (Devos et al., 2017; Moate et al., 2019). A large-scale study conducted in Belgium with 3,659 doctoral students found that 51% of them were at risk of psychological stress (Levecque et al., 2017). Another study in the United States revealed that 91% of 2,279 research participants indicated that this group was six times more likely to experience anxiety and depression compared to other populations (Anttila et al., 2015). Good psychological well-being not only helps doctoral students navigate their studies successfully but also becomes a critical factor influencing dropout rates in this group. Therefore, it is essential to understand the factors associated with and affecting their psychological well-being so that a model can be developed to enhance the psychological well-being of doctoral students (Sunny et al., 2020; Zhao et al., 2021).

Psychological well-being is not only a concept that is difficult to operationalize, but it also overlaps with several other concepts. Ryff (1989) conceptualized psychological well-being into six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Carrero et al., 2020; Ling et al., 2022). Meanwhile, Diener et al. (2023) used the term subjective well-being to describe an individual's overall satisfaction with life. Other scholars have explained psychological well-being by examining the presence or absence of psychological issues in an individual. This complexity certainly complicates the measurement of this concept if the underlying theory is not operational. Generally, the measurement tools for psychological well-being currently in use are based on the constructs that underlie them, leading to varying results in the depiction of this concept (Arslan & Wong, 2023; Liu, 2023; Theodora et al., 2023).

The growing body of literature on doctoral students' psychological well-being suggests that the intersection of personal, academic, and environmental factors plays a crucial role in

shaping their overall mental health (De Jesus et al., 2023; Jin et al., 2023). Recent studies emphasize the importance of supportive academic environments, including effective mentorship, as critical elements that can mitigate the adverse effects of the academic pressures faced by doctoral students (Hradsky et al., 2022; St Clair et al., 2019). Additionally, the integration of psychological support services within academic institutions has been increasingly recognized as a necessary measure to address the mental health needs of this population. The development of targeted interventions, such as resilience training and stress management programs, tailored specifically for doctoral students, is essential for fostering an environment that not only supports academic success but also promotes holistic well-being. As the academic demands continue to intensify, future research should focus on longitudinal studies that examine the long-term impact of these interventions, thereby contributing to the creation of sustainable strategies for enhancing the psychological well-being of doctoral students (Fraboni et al., 2023; Moustafa et al., 2024).

METHODS

The use of qualitative methodology in this study is instrumental in uncovering the depth and complexity of doctoral students' psychological well-being (Creswell, W. John & Creswell, 2018). Through methods such as in-depth interviews, focus groups, and thematic analysis, qualitative research enables the capture of rich, detailed data that highlights the subjective experiences and emotional landscapes of doctoral students (Yin, 2013). This approach allows for the exploration of nuanced issues such as the impact of supervisory relationships, the challenges of balancing academic pressures with personal life, and the strategies students employ to maintain mental health. By integrating these qualitative insights into the systematic scoping review, the study not only provides a

comprehensive overview of existing research but also adds depth to our understanding of how different factors interact to influence the well-being of doctoral students. This methodological approach is particularly relevant in addressing the gaps in current literature, offering a more holistic perspective that combines both quantitative data and qualitative narratives, thereby contributing to more effective interventions and support mechanisms tailored to the unique needs of doctoral students. This study employs a systematic scoping review (ScR) based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. Articles were collected from four databases: Scopus, EBSCO, Web of Science, and ScienceDirect. The keywords used were "psychological well-being

AND doctoral student OR PhD student OR postgraduate student OR doctoral program.

Inclusion and Exclusion Criteria:

Table 1 Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Language	English	Non-English
Article Type	Empirical research articles	including literature reviews and meta-analyses

This study does not filter articles based on the publication year or research area, as the objective is to examine the development of the concept of psychological well-being in the context of doctoral students.

Table 2 Inclusion and Exclusion Criteria for Each Database

Database	Filter	Search Terms	Initial Results	Final Result
Scopus	Document Type: Article	"psychological well-being" AND "doctoral student*" OR "phd student*" OR "postgraduate student*" OR "doctoral program"	80	64
EBSCO	Source Type: Academic Journal	"psychological well-being" AND "doctoral student*" OR "phd student*" OR "postgraduate student*" OR "doctoral program"	52	35
Web Of Science	Document Type: Article	"psychological well-being" AND "doctoral student*" OR "phd student*" OR "postgraduate student*" OR "doctoral program"	83	66
ScienceDirect	Article Type: Research Article	"psychological well-being" AND "doctoral student" OR "phd student" OR "postgraduate student" OR "doctoral program"	545	390

RESULT AND DISCUSSION

Literature Identified

In an effort to comprehensively understand the psychological well-being of doctoral students, the researcher has compiled and analyzed 1,000 relevant prior studies using the VOSviewer software, which allows for the visualization of research networks based on data processed from the Publish or Perish database. This study aims to identify key patterns, conceptual relationships, and existing research gaps related to the psychological well-being of

doctoral students. The use of VOSviewer provides the capability to map the complex research landscape, connecting various themes such as academic stress, supervisory relationships, work-life balance, and individual factors like resilience and motivation. Through this approach, the study not only offers a historical overview of the research field but also lays a strong foundation for developing more effective intervention models to support the psychological well-being of doctoral students in the future.

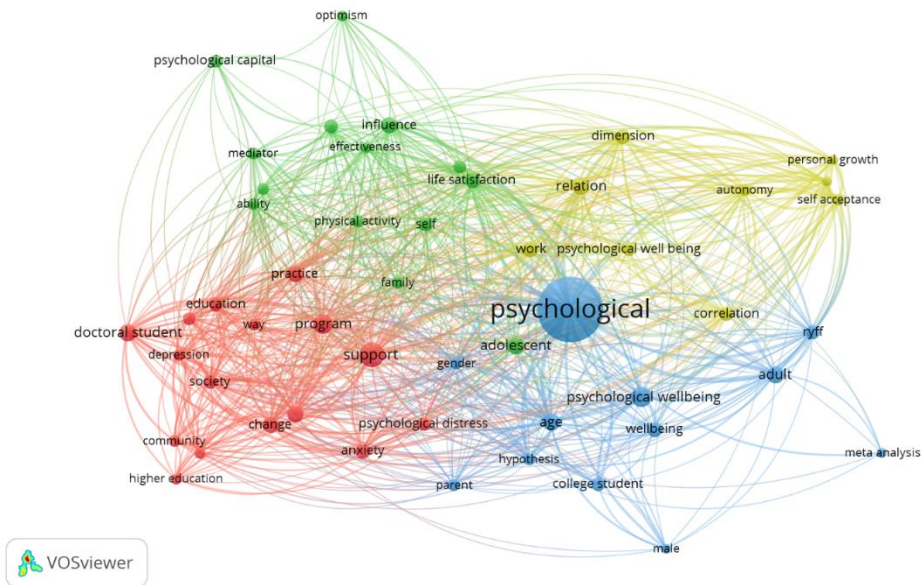


Figure 1 Network Analysis of Prior Studies on Doctoral Student's Psychological Well-Being

The visual network analysis generated through VOSviewer regarding the psychological well-being of doctoral students reveals a complex structure with several closely interconnected clusters. The term "psychological" occupies a central position, with strong connections to other important concepts such as "support," "wellbeing," and "anxiety," indicating the deep interaction between social support, well-being, and anxiety in influencing the psychological condition of doctoral students. Clusters containing terms like "depression," "stress," and "doctoral student" highlight the close link between academic pressure and the mental health risks faced by doctoral students. On the other hand, concepts like "autonomy," "self-acceptance," and "personal growth" in smaller but significant clusters underscore the importance of individual aspects in psychological well-being, supporting Ryff's theory of psychological well-being, which

consists of six dimensions. The complex relationships between these variables reflect the multifactorial nature of psychological well-being and the need for a holistic approach in supporting doctoral students, encompassing social support, personal development, and stress management.

This network also suggests potential research areas that have not been deeply explored, such as the role of "psychological capital" and "optimism" in enhancing resilience against academic challenges. The visual network analysis generated through VOSviewer regarding the psychological well-being of doctoral students reveals a complex structure with several closely interconnected clusters. The term "psychological" occupies a central position, with strong connections to other important concepts such as "support," "wellbeing," and "anxiety," indicating the deep interaction between social support, well-being, and anxiety in influencing the psychological condition of

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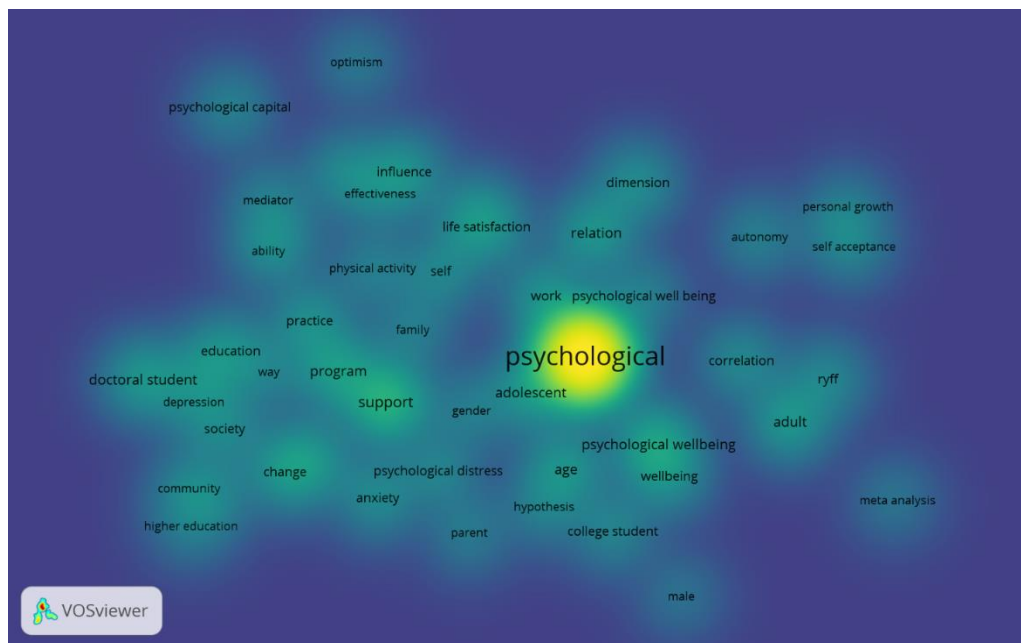


Figure 2 Density Analysis of Prior Studies on Doctoral Student's Psychological Well-Being

The visual density analysis of the network generated using VOSviewer related to the psychological well-being of doctoral students shows that the concept of "psychological" serves as the central gravity point for various relevant concepts, underscoring the significance of psychological factors in the well-being of doctoral students. High-density points close to "psychological," such as "support," "wellbeing," and "anxiety," indicate that these elements are

highly interconnected and have a significant impact on students' well-being. The presence of terms like "doctoral student," "depression," and "stress" in relatively dense areas emphasizes the significant psychological challenges faced by doctoral students, while less frequent but important clusters like "self-acceptance," "personal growth," and "autonomy" highlight personal dimensions that also affect their well-being. This analysis confirms that the

psychological well-being of doctoral students is a multifaceted phenomenon influenced by various contextual and individual factors, and a more comprehensive approach is needed to support them in coping with academic pressures and maintaining optimal mental health.

The initial search yielded 708 articles using the keywords Psychological Well-Being AND Doctoral Student* OR PhD Student* OR Postgraduate Student* OR Doctoral Program. After filtering by document type and language, 555 articles remained. Following the removal of duplicates, both manually and with the aid of

software, 529 articles were left. Further screening using the predefined inclusion and exclusion criteria resulted in 24 articles. These remaining articles were then meticulously reviewed in detail, leading to the final selection of 9 articles that will be examined and utilized in this study.

Figure 3 provides a detailed overview of the record screening method using PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only.

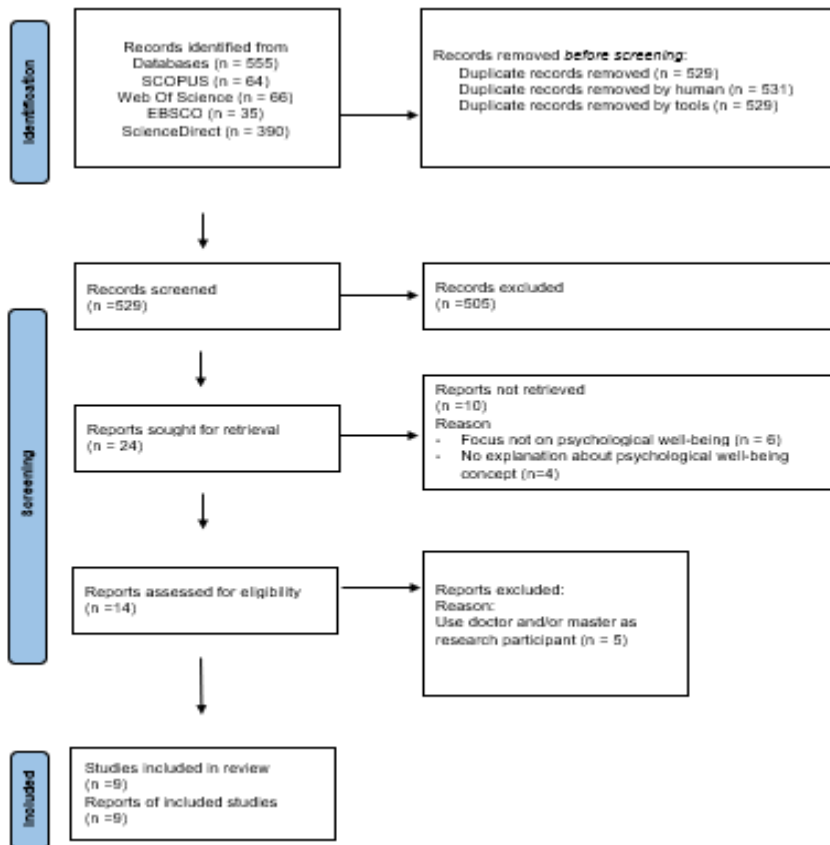


Figure 3 PRISMA-ScR flow diagram

The Concept of Psychological Well-Being

From the analysis of nine articles, several concepts attempting to explain psychological well-being were identified. Most of the studies describe well-being within the framework of subjective well-being as proposed by Diener (2023), who defines it as a state where an individual feels generally satisfied with their life. Additionally, there is the concept of psychological well-being from Ryff (1989), which is translated into six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Another concept utilizes the term mental well-being, as used by McCray & Joseph-Richard (2021), who cite Mind.org.uk, defining it as an individual's overall mental state, including their feelings and how they handle daily situations. Meanwhile, Jackman & Sisson (2022) adopt the definition of psychological well-being proposed by Houben et al. (2015) as a state characterized by good psychological adjustment and the absence of maladaptive adjustment. On the other hand, Sverdlik et al. (2020) explain the concept of well-being more in terms of the presence or absence of psychological issues within an individual. This explanation is based on Conway, et.al (2011) assertion that the concept of psychological well-being is often difficult to operationally define and relies on individual interpretation. These differing concepts and explanations are indeed one of the limitations in research involving the concept of psychological well-being (Gibson & Hicks, 2018; Schmidt & Hansson, 2018).

Measurement of Well-Being

Due to the differing underlying concepts and explanations, the measurement of psychological well-being found in these articles also varies. Articles utilizing Diener's (1984) concept typically measure well-being using the Satisfaction With Life Scale (SWLS), often

combined with the Scale of Positive and Negative Experience (SPANE) (Chattu et al., 2020; Howell & Demuynck, 2023; Rasskazova et al., 2020). Meanwhile, studies grounded in Ryff's (1989) theory of Psychological Well-Being employ the Psychological Well-Being Scale, which consists of 42 items measuring six dimensions of psychological well-being. Other studies use self-reports based on the presence or absence of physical and psychological issues to determine an individual's psychological well-being (Kurnia, 2005; Raharjotri, 2017).

Factors Related To Psychological Well-Being

From the review of the nine articles, several factors were identified as being related to or predictive of an individual's psychological well-being. Some factors appear in more than one article, such as the relationship with the supervisor, which is found to be a strong predictor of doctoral students' psychological well-being (Byrom et al., 2022; Haider & Dasti, 2022; McCray & Joseph-Richard, 2021; Nielsen et al., 2017; F. Zhang et al., 2022). Additionally, Haider & Dasti (2022) and Jackman & Sisson (2022) discuss other factors influencing doctoral students' psychological well-being, including research self-efficacy. The concept of perfectionism is also linked to psychological well-being, where individuals with maladaptive perfectionism are more prone to stress and dissatisfaction with life, while those with adaptive perfectionism experience the opposite (Hicks et al., 2022; Moate et al., 2019). Another finding from Byrom et al. (2022) indicates that doctoral students with a strong achievement orientation, family support, and sufficient sleep tend to have better mental well-being. Beyond variables directly related to psychological well-being, there are also mediating variables such as psychological capital (PsyCap) (Nielsen et al., 2017) and impostor syndrome (Sverdlik et al., 2020).

Table 3 Review Results of the 9 Articles Meeting the Criteria

No	Year	Author	Title	Main Findings
1	2014	Young et al	Success Factors or International Postgraduate Students' Adjustment-Exploring the Roles of Intercultural Competence, Language Proficiency, Social Contact and Social Support	<ol style="list-style-type: none"> 1. Language proficiency and social contact are correlated with academic achievement, psychological well-being (PWB), and satisfaction with life in a new environment. 2. The correlation between language proficiency and satisfaction with life in the new environment is not significant.
2	2017	Nielsena et al	The Influence of Instructor Support, Family Support and Psychological Capital on The Well-Being of Postgraduate Students-A Moderated Mediation Model	<ol style="list-style-type: none"> 1. The relationship between instructor support and subjective well-being (SWB) is mediated by psychological capital (PsyCap). 2. When family support is low, instructor support significantly enhances subjective well-being through PsyCap.
3	2019	Randall et al	Doctoral Student Perfectionism and Emotional Well-Being	<ol style="list-style-type: none"> 1. Adaptive perfectionism is associated with lower stress levels, fewer negative emotions, and greater life satisfaction. 2. Maladaptive perfectionism is linked to higher stress, more negative emotions, and lower life satisfaction. 3. Non-perfectionism falls between the two.
4	2020	Byrom et al	Predicting Stress and Mental Wellbeing Among Doctoral Researchers	<ol style="list-style-type: none"> 1. Family support, good general health, sleep patterns, and low self-depreciation are strong predictors of mental well-being and low stress levels. 2. Students who are confident about their future career and well-prepared for their studies have lower stress levels. 3. Achievement-oriented students tend to have better mental well-being.
5	2020	Sverdlik et al	Phd Imposter Syndrome-Exploring Antecedents, Consequences, And Implications for Doctoral Well-Being	<ol style="list-style-type: none"> 1. Perceived belongingness negatively affects impostor syndrome. 2. Impostor syndrome can lead to increased depression, stress, and physical health problems.
6	2021	McCray & Joseph Richard	Doctoral students' well-being in United Kingdom business schools- A survey of personal experience and support mechanisms	<ol style="list-style-type: none"> 1. Negative mental well-being is often viewed as a personal problem. 2. There is support from supervisors, but very little input on managing mental well-being. 3. Some students feel they lack information on available resources to help with mental well-being issues.
7	2022	Haider & Dasti	Mentoring, Research Self-Efficacy, Work-Life Balance and Psychological Well-Being of Doctoral Program Students	<ol style="list-style-type: none"> 1. Mentoring strengthens research self-efficacy and work-life balance, thereby enhancing psychological well-being. 2. Reasons for discontinuing studies include administrative issues, poor supervision, work-life imbalance, and other personal problems.

				3. Delays in research are often due to management issues, supervision, work-life balance, and other technical problems
8	2022	Jackam & Sisson	Promoting Psychological Well-Being in Doctoral Students A Qualitative Study Adopting A Positive Psychology Perspective	Seven themes that are believed to improve psychological well-being during the doctoral education process: 1. accomplishments 2. intrinsic rewards 3. self-efficacy 4. comprehension and understanding; 5. supervisor support 6. wider support network 7. self-care and lifestyle
9	2022	Zhang et al	Social Predictors of Doctoral Student Mental Health and Well-Being	1. Mentoring in the second year, certainty of choice in the third year, and academic development along with a sense of belonging in the fourth year are positive predictors of high psychological well-being. 2. Demographic characteristics are not related to well-being levels. 3. Mental well-being is negatively associated with publication outcomes and research self-efficacy.

This study did not filter by year or study area, as the primary objective was to examine the development of research related to the concept of psychological well-being among doctoral students. However, out of the 529 initially captured articles, only 14 aligned with the study's concept and context (Kokotsaki, 2023; Muro et al., 2022; S. Zhang et al., 2022). Ultimately, only 9 articles met the criteria, as the other 5 also included master's level participants. The articles span the years 2014, 2017, 2019, 2020, 2021, and 2022. Notably, there is a gap between 2014 and 2017, indicating a lack of focus on this area of research during that period, possibly due to the lower number of doctoral students at the time.

Moreover, the majority of the studies are concentrated in Europe, particularly the UK, and the United States. None of the 9 articles pertain to research in Asia, suggesting a significant opportunity for exploration in that region. Of the 9 articles, 7 (77%) employed quantitative methods, while the remaining 2 used qualitative approaches, indicating a lack of interest in exploring the dynamics of psychological well-being in the doctoral student context. Most of these articles recommend conducting

longitudinal studies and involving more diverse populations to achieve a more in-depth understanding and broader generalizability.

CONCLUSION

From this scoping review, several conclusions were drawn. First, The concepts of psychological well-being among doctoral students need to be clearly operationalized, given the overlap among different concepts. Second, The measurement of psychological well-being in doctoral students also varies, depending on the underlying concept. Third, Commonly associated factors with psychological well-being in doctoral students include relationships with supervisors, research self-efficacy, perfectionism, the drive to succeed, and family support. Additionally, mediating variables such as impostor syndrome and psychological capital (PsyCap) were identified. Fourth, Research on the psychological well-being of doctoral students is predominantly conducted in Europe and the United States, primarily using quantitative methods.

LIMITATIONS OF THE STUDY

This study has several limitations. First, the data used were sourced from only four databases, while articles from other sources might provide different insights. Second, the analysis and interpretation were conducted by a single

researcher, which may introduce subjectivity in drawing conclusions. Third, the inclusion criteria used were designed to narrow the search area, which also limits the number of articles that might provide necessary information. Fourth, the keywords used did not cover all concepts similar to psychological well-being.

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