

## The Importance of Basic Psychological Needs Satisfaction in Higher Education: A Systematic Literature Review

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### Abstract

This systematic literature review analyzes previous studies on basic psychological needs satisfaction in higher education. Five international databases were used in this study, including EBSCOHost, Science Direct, Scopus, Springer, and Taylor & Francis, to gather publications from 2019 to 2023 with a quantitative approach, whether cross-sectional, longitudinal, or experimental. Out of the initial 561 articles, 27 passed the screening process, which used the population, intervention, comparison, and outcome (PICO) model to create inclusion criteria. The writing guideline of this research follows The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). Results of the study showed a positive relationship between basic psychological needs satisfaction and motivation, well-being, student engagement, and academic achievement. The importance of basic psychological needs satisfaction in higher education can initiate collaboration among institutions, lecturers, and college students, leading to improved motivation, well-being, engagement, and academic outcomes.

**Keywords:** self-determination theory, basic psychological needs, higher education, motivation, academic achievement

### Abstrak

Studi tinjauan literatur sistematis berikut ini menganalisis penelitian sebelumnya tentang pemenuhan kebutuhan dasar psikologis di pendidikan tinggi. Terdapat lima database internasional yang digunakan dalam studi, termasuk EBSCOHost, Science Direct, Scopus, Springer, dan Taylor & Francis, untuk mengumpulkan penelitian-penelitian dari tahun 2019 hingga 2023 dengan pendekatan kuantitatif, baik cross-sectional, longitudinal, atau eksperimental. Dari 561 artikel awal, terdapat 27 artikel yang lolos proses penyaringan, yang menggunakan model populasi, intervensi, perbandingan, dan hasil (PICO) untuk membuat kriteria inklusi. Pedoman penulisan penelitian ini mengikuti The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA). Hasil penelitian menunjukkan adanya hubungan positif antara kepuasan dan motivasi kebutuhan psikologis dasar, kesejahteraan, keterlibatan belajar, dan prestasi akademik. Pentingnya pemenuhan kebutuhan dasar psikologis pada pendidikan tinggi dapat menginisiasi kolaborasi antar institusi, dosen, dan mahasiswa, yang mengarah pada peningkatan motivasi, kesejahteraan, keterlibatan, dan hasil akademik.

**Keywords:** teori determinasi diri, pemenuhan kebutuhan dasar psikologis, pendidikan tinggi, motivasi, prestasi akademik

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## INTRODUCTION

Basic psychological needs satisfaction is one of the main theories of self-determination theory developed by Ryan & Deci for the last three decades which discusses how a person is motivated to be a learner that keeps learning. Self-determination theory identifies three fundamental psychological needs that humans possess. These needs are autonomy, competence, and relatedness (Ryan & Deci, 2017). The need for competence refers to the desire to achieve success, while the need for autonomy is the desire to act according to one's wishes. Lastly, the need for relatedness is the desire to form close relationships with others. (Ryan & Deci, 2017). These three needs are defined as a source of encouragement or nutrients which are very important for an individual's growth, integrity, and psychological well-being. The satisfaction of these three psychological needs can give rise to intrinsic motivation in a person (Ryan & Deci, 2017).

Discussing basic psychological needs satisfaction in the educational context, Ryan & Deci (2017) explained that the satisfaction of an individual's basic psychological needs can be correlated with increased autonomous motivation, well-being, engagement in learning, and high academic achievement. Ryan & Deci (2017) also explained that the satisfaction of these three basic psychological needs might be increasing intrinsic motivation or autonomous motivation. Apart from motivation, summarizes several references from studies conducted by Conesa et al. (2022), well-being is described as an emotional balance and a feeling of positive affect and avoidance of negative affect which can be fear, depression, or anxiety. Ryan & Deci (2017) also stated that well-being is a condition of the presence of positive and less negative emotions which can impact life satisfaction. Chen & Zhang (2022) stated that there is a close relationship between basic psychological needs satisfaction and college students' academic engagement. This idea is supported by Ryan & Deci (2017), who believe that students who experience better basic psychological needs satisfaction during learning are more likely to be autonomously motivated and involved in the learning process leading to better academic achievement.

Ryan & Deci (2017) explain that the satisfaction of an individual's basic psychological needs can be correlated with increased autonomous motivation, well-being, learning involvement, and high academic achievement. Based on the statement, the hypothesis proposed in this study is that there is a positive relationship between basic psychological needs satisfaction and several other variables related to motivation, well-being, student engagement, and academic achievement, especially in the research literature in the last five years (2019-2023). A previous systematic literature review study conducted by Conesa et al. (2022) found that basic psychological needs satisfaction in the context of elementary and middle education has proved that there is a positive relationship between basic psychological needs satisfaction and the variables previously expressed.

Numerous systematic literature reviews have been conducted on basic psychological needs satisfaction. In the past, systematic reviews have been performed on various aspects of this topic, including physical activity (Texeira et al, 2018), physical education (Saugy et al, 2020), elementary and middle education (Conesa et al., 2022), elderly (Tang et al, 2020), work context (Coxen et al., 2021), adolescents with chronic illnesses (Riggenbach et al, 2019), and health interventions (Gillison et al, 2019). However, there have been no studies related to systematic literature reviews relating to the higher education context, especially on the subject of undergraduate students. Based on this gap, this study will conduct a systematic literature review on basic psychological needs satisfaction in the higher education context. According to Leow, Leow, & Ean (2023), college students face various factors that can influence their well-being and



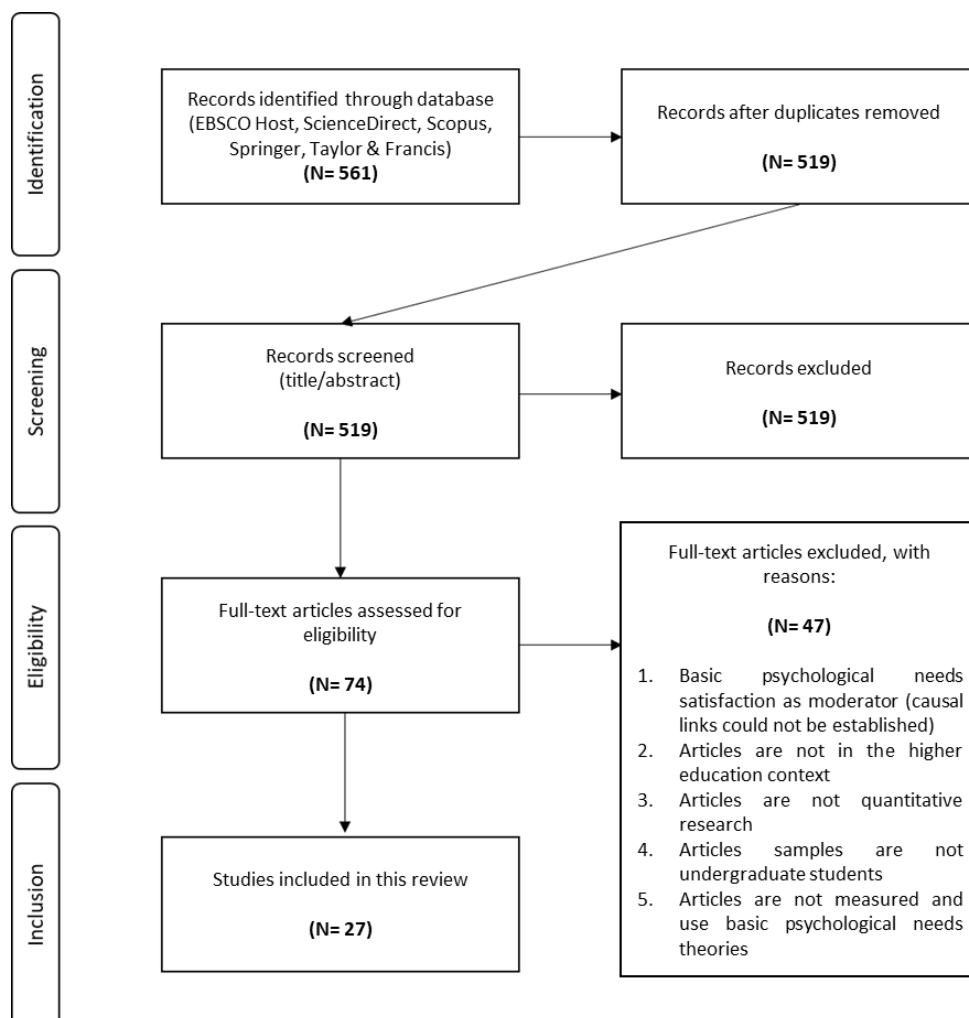
learning process, the satisfaction of basic psychological needs is important for students in higher education. Understanding how important the role of basic psychological needs satisfaction is in higher education, the findings of this study will guide college students and institutions to support students' basic psychological needs. The improvement of basic psychological needs satisfaction will lead to the improvement of their quality of life and well-being in continuing their higher education.

## METHOD

The writing guideline of this study report will refer to The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) developed by Page et al. (2021). Apart from the methodology in writing reports, the following study used the population, intervention, comparison, and outcome (PICO) model developed by Booth & Fry-Smith in creating inclusion criteria or including studies in systematic literature reviews.

### Graphics 1.

PRISMA Flow Diagram For The Systematic Literature Review



This study focuses on undergraduate students, who are the target population. The interventions are based on previous research that utilized the basic psychological needs theory to assess the satisfaction or dissatisfaction of these needs in the context of higher



education. Comparisons in this study will be made with previous research that employed quantitative research methods, such as cross-sectional, longitudinal, experimental, or interventional techniques, and utilized measurements related to basic psychological needs. The outcomes of this systematic literature review will include previous research that used measurements of basic psychological needs, both unidimensionally and multidimensionally (autonomy, competence, and relatedness), as well as relevant measurements associated with the educational context.

A systematic source search was carried out in October 2023. The database in the literature search consisted of five international databases (EBSCOHost, Science Direct, Scopus, Springer, and Taylor & Francis) with keyword searches in English: Psychological need AND need satisfaction AND college student NOT physical activity NOT physical education. There are several restrictions or limitations in filtering the search, including that the article is written in English, is a journal article, and was published in the last five years (2019-2023). Based on the search results, 561 articles were recorded using Microsoft Excel 2021 software. During the initial screening process, the PRISMA flow diagram was used to remove duplicate articles from various databases. This method helped to eliminate 42 duplicate articles. Next, the titles and abstracts of 519 articles were reviewed and 445 were removed as they did not meet the inclusion criteria. Further screening was done by reading 74 full-text journal articles that matched the title and abstract screening stages. Out of these, 47 articles were removed for various reasons as mentioned in Figure 1. After following the PRISMA flow diagram, 27 articles were selected for a systematic literature review.

**RESULT AND DISCUSSION**

There were 46 thousand participants from the 27 articles that will be processed in this study. Of the 27 articles that fit the inclusion criteria, the following studies will be categorized into four analyses: the relationship between basic psychological needs and motivation, well-being, student engagement, and academic achievement. Out of the 27 articles, 7 studies focused on the relationship between basic psychological needs and motivation-related variables, 17 on well-being, 11 on academic achievement, and only two on student engagement as shown in Table 1. The sample size of these studies was as follows: 8 studies had 1-300 participants, 11 studies had 300-600 participants, 3 studies had 600-900 participants, and 5 studies had more than 900 participants.

**Table 1.**  
 Studies Of Basic Psychological Needs And Related Variables

| <b>Authors (Year)</b> | <b>Participants</b>                         | <b>Aspects</b>   | <b>Important Findings</b>  |
|-----------------------|---|--|--|
| Davis (2022)          | 236 foreign language undergraduate students | Autonomous Motivation in Learning Languages, Intrinsic Motivation (MT) | 1. Competence correlates with autonomous motivation in language learning and intrinsic motivation (MT)<br>2. Relatedness correlates with intrinsic motivation (MT) |
| Zhou et al. (2021)    | 572 undergraduate students in China         | Self-regulation in online learning (MT)                                | Relatedness is positively correlated with online learning self-regulation (MT)   |



| Authors (Year)               | Participants   | Aspects  | Important Findings   |
|------------------------------|--|--|--|
| Luo et al. (2021)            | 227 undergraduate students                               | Intrinsic motivation, extrinsic motivation (MT)                    | <ol style="list-style-type: none"> <li>1. Perceived autonomy, competence, and relatedness are positively correlated with intrinsic motivation (MT)</li> <li>2. Perceptions of competence and relatedness are positively correlated with extrinsic motivation (AC)</li> </ol>   |
| Fedesco et al. (2019)        | 877 undergraduate students must be at least 18 years old | Interest and enjoyment (MT)<br>Final grades (AC)                   | <ol style="list-style-type: none"> <li>1. Relatedness with teachers, autonomy, and competence are positively correlated with interest/enjoyment (MT)</li> <li>2. Perception of competence correlates with high final grades (AC)</li> </ol>  |
| Nishimura & Joshi (2021)     | 68 female undergraduate students aged 19-25 years        | External motivation (MT)<br>Happiness (WB)<br>Academic grades (AC) | <ol style="list-style-type: none"> <li>1. Parental autonomy and perceived competence correlate with external motivation (MT)</li> <li>2. Basic psychological needs satisfaction and autonomy from parents are positively correlated with happiness (WB)</li> <li>3. Autonomy is negatively correlated with academic grades (AC)</li> <li>4. Competency is positively correlated with academic grades (AC)</li> </ol> |
| Hernández et al. (2020)      | 474 sports science undergraduate students                | Intrinsic motivation (MT)<br>academic performance (AC)             | <ol style="list-style-type: none"> <li>1. Basic psychological needs satisfaction is positively correlated with intrinsic motivation (MT)</li> <li>2. Basic psychological needs satisfaction correlates with intrinsic motivation which positively predicts academic performance (AC)</li> </ol>  |
| Yu & Levesque-Bristol (2020) | 30,765 undergraduate students                            | Self-determined motivation (MT)<br>academic grades (AC)            | <ol style="list-style-type: none"> <li>1. Basic psychological needs satisfaction is correlated with self-determined motivation (MT)</li> <li>2. Basic psychological needs satisfaction and self-determined motivation</li> </ol>   |



| Authors (Year)             | Participants  | Aspects   | Important Findings  |
|----------------------------|---|---|---|
|                            |   |   | positively predict academic grades (AC)   |
| Neufeld et al. (2020)      | 197 medical science undergraduate students          | Perception of stress (WB)                                     | <ol style="list-style-type: none"> <li>1. Basic psychological needs satisfaction is negatively correlated with perceived stress (WB)</li> <li>2. Basic psychological needs frustration is positively correlated with perceived stress (WB)</li> </ol> |
| Gui et al. (2023)          | 444 undergraduate students at Canadian universities | Leisure life satisfaction and academic life satisfaction (WB) | <ol style="list-style-type: none"> <li>1. Autonomy is positively correlated with leisure life satisfaction (WB)</li> <li>2. Autonomy and competence are positively correlated with academic life satisfaction (WB)</li> </ol>                         |
| Sharifi Fard et al. (2023) | 660 undergraduate students                          | Psychological well-being (WB)                                 | Basic psychological needs satisfaction directly has a positive correlation with psychological well-being (WB)   |
| Jung et al. (2020)         | 215 American and 171 Korean undergraduate students  | Satisfaction with life (WB)                                   | Support for autonomy is correlated with life satisfaction (WB)  |
| Levine et al. (2022)       | 614 undergraduate students                          | Negative affect and depressive symptoms (WB)                  | Basic psychological needs frustration is positively correlated with negative affect and depressive symptoms (WB)  |
| Teuber et al. (2021)       | 477 undergraduate students in Germany               | Depression and life satisfaction (WB)                         | <ol style="list-style-type: none"> <li>1. Competence is negatively correlated with feelings of depression (WB)</li> <li>2. Relatedness is positively correlated with life satisfaction (WB)</li> </ol>  |
| Weigold et al. (2021)      | 1013 undergraduate students                         | Psychological well-being (WB)                                 | <ol style="list-style-type: none"> <li>1. Competence and relatedness are positively correlated with psychological well-being (WB)</li> <li>2. Autonomy does not correlate with psychological well-being (WB)</li> </ol>                               |



| Authors (Year)                             | Participants                                 | Aspects  | Important Findings   |
|--|--|--|--|
| Liu et al. (2022)                          | 574 undergraduate students                   | Life-satisfaction (WB)   | Basic psychological needs satisfaction is positively correlated with life satisfaction (WB)  |
| Çınar-Tanrıverdi & Karabacak-Çelik, (2023) | 967 undergraduate students                   | Academic stress (WB)   | Autonomy, competence, and relatedness are negatively correlated with academic stress (WB)  |
| Yu et al., (2020)                          | 293 undergraduate students in southern China | Peace of mind (WB)   | Basic psychological needs satisfaction is positively correlated with peace of mind (WB)  |
| Reed-Fitzke & Lucier-Greer, (2021)         | 552 undergraduate students                   | Life satisfaction (WB)   | <ol style="list-style-type: none"> <li>1. Basic psychological needs satisfaction is positively correlated with life satisfaction (WB)</li> <li>2. Basic psychological needs frustration significantly indicates low life satisfaction (WB)</li> </ol>  |
| Davidson & Beck, (2019)                    | 1257 undergraduate students                  | Commitment to college, positive feelings (WB)                        | Basic psychological needs satisfaction is positively correlated with commitment to college and positive feelings (WB)  |
| Brockman et al., (2023)                    | 186 undergraduate students                   | Positive and negative affect (WB)                                    | Basic psychological needs satisfaction is positively correlated with positive affect and negatively correlated with negative affect (WB)   |
| Goodman et al., (2021)                     | 527 undergraduate students                   | Mindfulness and anxiety (WB)<br>Academic performance and grades (AC) | <ol style="list-style-type: none"> <li>1. Autonomy and competence are positively correlated with mindfulness and correlated with lower anxiety (WB)</li> <li>2. There is a positive correlation between basic psychological needs satisfaction and academic performance and grades (AC)</li> </ol> |
| Gülşen & Şahin, (2022)                     | 404 undergraduate students in Türkiye        | Life satisfaction (WB)<br>Academic self-efficacy (AC)                | <ol style="list-style-type: none"> <li>1. There is a positive correlation between Basic psychological needs satisfaction and life satisfaction (WB)</li> <li>2. Basic psychological needs satisfaction is positively</li> </ol>  |



| Authors (Year)           | Participants   | Aspects  | Important Findings   |
|--------------------------|--|--|--|
|                          |  |  | correlated with academic self-efficacy (AC)  |
| Law & Liu, (2023)        | 60 first-year undergraduate students in China                  | College adjustment (stress, anxiety) (WB) College adjustment (academic adjustment, and student engagement) (AC & SE) | 1. Basic psychological needs satisfaction is negatively correlated with emotional aspects of college adjustment (WB)<br>2. Basic psychological needs satisfaction correlates with college adjustment in aspects of academic adjustment which are part of learning engagement (AC & SE) |
| Wang et al., (2022)      | 3226 undergraduate students from 188 calculus classes          | Mathematics achievement (AC)   | Competence is positively correlated with achievement in mathematics (AC)   |
| Cho et al., (2021)       | 312 international graduate students from Asia                  | Academic performance (AC)  | Self-determined motivation correlates with academic performance (AC)   |
| Shirvan & Alamer, (2022) | 213 undergraduate students majoring in English in Saudi Arabia | Foreign language achievements (AC)   | Autonomy and relatedness are positively correlated with achievement in foreign language learning (AC)  |
| Liu & Flick, (2019)      | 573 accounting program undergraduate students in China         | Academic performance (AC) Student engagement in the classroom (SE)   | 1. Competence and relatedness correlate with engagement predicting academic performance (AC)<br>2. Competence and relatedness are positively correlated with student engagement in the classroom (SE)  |

*Related variables: MT is Motivation, WB is well-being, AC is academic achievement, and SE is student engagement*

The main objective of this study is to find articles related to the relationship between basic psychological needs and their relationship to motivation, well-being, student engagement, and academic achievement in students. The systematic literature review carried out in this study will discuss 27 scientific articles published in the last five years. The discussion will be divided into four discussions according to the research objectives.





The first discussion will focus on the relationship between basic psychological needs and motivation in students, which is the first research objective. Out of the 27 scientific articles reviewed in this systematic literature review, at least 7 consistently support the initial research hypothesis related to motivation. The hypothesis is supported by the finding that satisfaction of basic psychological needs has a significant influence on intrinsic motivation or autonomous motivation (Yu & Levesque-Bristol, 2020; Hernández et al., 2020; Luo et al., 2021; Davis, 2022). Additionally, specific findings related to basic psychological needs and their relationship to motivation were also found in online learning. Satisfaction of all three basic psychological needs, particularly relatedness, is positively correlated with self-regulation in online learning (Zhou et al., 2021). These findings align with the concept proposed by (Ryan & Deci, 2017), which suggests that satisfying an individual's three basic psychological needs can foster intrinsic motivation or autonomous motivation, leading to better self-regulation. Although most articles show that basic psychological needs satisfaction can stimulate the emergence of intrinsic motivation, the article developed by Nishimura & Joshi (2021), found that autonomy from parents and perceptions of competence were positively correlated with external motivation. According to Nishimura & Joshi (2021), the findings from their study show that individuals who focus on outcomes with the hope of external rewards will tend to have a sense of competence to get their desires because of these rewards, not because of their intrinsic desire to carry out an activity. This condition is related to Schunk et al (2014) that externally motivated people tend to get something externally like rewards or praise.

The second objective of this research is to find the relationship between basic psychological needs satisfaction and well-being. There were 17 articles discussing the relationship between the two. Generally, the satisfaction of basic psychological needs is linked to three key aspects of well-being, which are life satisfaction (Jung et al., 2020; Reed-Fitzke & Lucier-Greer, 2021; Teuber et al., 2021; Gülşen & Şahin, 2022; Q. Liu et al., 2022; Gui et al., 2023), negative relationship with feelings of stress or depressive symptoms (Neufeld et al., 2020; Teuber et al., 2021; Goodman et al., 2021; Çınar-Tanrıverdi & Karabacak-Çelik, 2023; Law & Liu, 2023), as well as psychological well-being and positive and negative affect (Levine et al., 2022; Yu et al., 2020; Brockman et al., 2023). These findings confirm the self-determination theory that the satisfaction of the three basic psychological needs which are nutrients for human psychology can give rise to satisfaction and well-being in life. Apart from that, these findings also consistently show that conditions of negative emotions will be negatively correlated with the satisfaction of basic psychological needs and positively correlated with the frustration of basic psychological needs, where low levels of satisfaction of these basic needs will have the potential to trigger high levels of stress (Neufeld et al., 2020), depressive symptoms (Levine et al., 2022), negative affect (Levine et al., 2022), and lower life satisfaction (Reed-Fitzke & Lucier-Greer, 2021).

In the third objective, this study finds out how the satisfaction of basic psychological needs is related to student's learning engagement. However, the findings on this third objective cannot be used as a generalization because the number of studies discussing the satisfaction of basic psychological needs with learning involvement is very limited. From the two studies found, it is known that basic psychological needs satisfaction is positively correlated with general student engagement in class (Liu & Flick, 2019; Law & Liu, 2023). This is in line with the concept of self-determination and autonomous motivation that individuals whose basic psychological needs are satisfied will tend to be involved in



an activity based on their encouragement, so this involvement can be more pronounced than involvement resulting from external encouragement. Kian & Yousoff (2015) also stated that an intrinsically motivated person is encouraged by their pleasure, interest, satisfaction, curiosity, and challenges that arise from within oneself

The fourth objective of this study is to discuss the relationship between basic psychological needs satisfaction and academic achievement. In the findings, academic achievement will be divided into two major aspects, namely academic achievement in the form of value outcomes, both general and specific (Fedesco et al., 2019; Yu & Levesque-Bristol, 2020; Goodman et al., 2021; Nishimura & Joshi, 2021; Shirvan & Alamer, 2022; Wang et al., 2022) or academic performance which indirectly also influences academic outcomes (Hernández et al., 2020; Cho et al., 2021; Goodman et al., 2021; Gülşen & Şahin, 2022; Q. Liu et al., 2022). Discussions on academic performance can be linked to the basic concept of basic psychological needs satisfaction, which includes intrinsic motivation and autonomous motivation. This is also in line with the first objective of the study, where it was discovered that individuals who are psychologically satisfied at a basic level are intrinsically motivated (Levesque-Bristol, 2020; Hernández et al., 2020; Luo et al., 2021; Yu & Davis, 2022). By achieving good academic performance and receiving intrinsic encouragement to continue growing and developing, a good final grade is a logical outcome. Additionally, a high level of satisfaction with basic psychological needs is positively correlated with student engagement, which is also a predictor of academic achievement.

## CONCLUSION

This study is a systematic literature review that investigates the relationship between basic psychological needs and their impact on motivation, well-being, student engagement, and academic achievement. The study looks at how basic psychological needs are related to autonomy, relatedness, and competence and found that when these needs are satisfied, it leads to positive outcomes in education. The analysis shows a positive correlation between basic psychological needs satisfaction and motivation, well-being, student engagement, and academic achievement. However, the study has limitations in the evidence presented, particularly regarding the student engagement variable. In conclusion, this study suggests that satisfying basic psychological needs is crucial in predicting high motivation, well-being, student engagement, and academic achievement, especially for undergraduate students.

There are some limitations and recommendations for further research on systematic literature review studies related to basic psychological needs in higher educational contexts. Firstly, there is a lack of previous articles that conducted this research. This can lead to inadequate conclusions. Future researchers can overcome this limitation by broadening the restrictions or using more database sources to find more relevant articles. With an adequate number of studies, conclusions, especially in studies that try to find several classifications, can better describe the results of each research question. Secondly, this study is limited to articles that use a quantitative approach, whether cross-sectional, longitudinal, or experimental. Future studies can conduct a broader comparative analysis by combining articles with qualitative and mixed-method methodologies in analysis. Lastly, most of the articles used in this study are self-report research, which can lead to varying results because the potential for bias will tend to be greater.



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