

A Review of Empirical Research on Transformational Leadership in University Students (2014-2023)

Una revisión de la investigación empírica sobre liderazgo transformacional en universitarios (2014-2023)

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Summary

There were analyzed empirical researches on transformational leadership in undergraduate and graduate university students from Peru and abroad between 2014 and 2023. The sample consisted of 23 research articles obtained from five electronic database: ERIC, ScienceDirect, Scopus, PubMed and Alicia. The PRISMA 2020 Declaration was applied to carry out the systematic review of the proposed topic. It was found that the United States is the country from which the main authors who published the most on the subject (30.43%), 2021 was the year with the most publications (26.08%), the most used approach and design were the quantitative (69,6%) and correlational (42,86%) respectively. The most used instruments to measure transformational leadership were the Multifactor Leadership Questionnaire (MLQ) by Bass & Avolio (1990) and the Leadership Practice Inventory (LPI) by Kouzes & Posner (2012). Additionally, an overview of the psychometric properties of the instruments applied and the statistics used by the researchers of the selected studies was presented. Finally, some recommendations were provided to continue the development of the topic addressed.

Keywords: Transformational leadership; Leadership in university students; Student leaders; University students; Systematic review.

Resumen

Se analizaron estudios empíricos sobre liderazgo transformacional en estudiantes universitarios de pre y posgrado del Perú y el extranjero en el periodo 2014 al 2023. La muestra fue de 23 artículos de investigación obtenidos de cinco bases de datos electrónicas: ERIC, ScienceDirect, Scopus, PubMed y Alicia. Se aplicó la Declaración PRISMA 2020 para realizar la revisión sistemática del tema propuesto. Se encontró que Estados Unidos es el país de donde provienen los principales autores que más publicaron sobre el tema (30,43%), el 2021 fue el año con más publicaciones (26,08%), el enfoque y diseño más usado fue el cuantitativo (69,6%) y correlacional (42,86%) respectivamente. Los instrumentos más utilizados para medir el liderazgo transformacional fueron el Cuestionario de Liderazgo Multifactorial (MLQ) de Bass & Avolio (1990) y el Inventario de práctica de liderazgo (LPI) de Kouzes & Posner (2012). Adicionalmente, se presentó un panorama de las propiedades psicométricas de los instrumentos aplicados y los estadísticos usados por los investigadores de los estudios seleccionados. Finalmente, se brindaron algunas recomendaciones para continuar con el desarrollo del tema abordado.

Palabras claves: Liderazgo transformacional; Liderazgo en universitarios; Líderes estudiantiles; Universitarios; Revisión sistemática.

INTRODUCTION

For the World Economic Forum (WEF), the health crisis due to the COVID-19 pandemic and the global recession of 2020 have created highly uncertain perspectives in the world (World Economic Forum, 2020). Likewise, the WEF pointed out that leadership is one of the skills most in demand by employers. Moreover, its development in employees is valued according to the surveys with the greatest global impact (Economic Commission for Latin America and the Caribbean [ECLAC]; Organization of Ibero-American States for Education, Science and Culture [OEI], 2020).

According to Katrin Jakobsdóttir, Prime Minister of Iceland, the pandemic crisis will accelerate the agendas related to the environment, equality, and the fourth industrial revolution (International Labor Organization [ILO], 2021). In general, society presents us with challenges characterized by volatility, uncertainty, complexity, and ambiguity, known as the VUCA environment (Villa, 2020), driving the need to design and plan real and practical strategies that must consider alternative problem-solving, decision-making, and action development models (Cáceres-Reche et al., 2021). In this sense, the participation of leaders becomes crucial since they set the tone for modifying the course of events and influencing the achievement of results (Hadziahmetovic et al., 2023).

Currently, leadership is understood as the process through which influence is exerted on other individuals to achieve particular objectives (Castro, 2007). Some of the behaviors expected in a leader are the ability to adequately interpret the characteristics of the environment, the organizational environment, the subordinates, and the tasks to be performed (Trógolo et al., 2013). For Ferreiro and Alcázar (2002), today's world requires leaders who help navigate the various paths available and govern organizations that are sources of achievements in human development.

On the other hand, the absence of leadership or its ineffectiveness in organizations represents a danger for them because it damages their image, credibility, economy, and development (Schiappa-Pietra, 2015), as well as their members, a situation evidenced by empirical data. For example, a study conducted by Trógolo et al. (2013) with Argentine workers found a direct correlation between lack of leadership and burnout in the exhaustion and depersonalization dimensions. Likewise, Skogstad et al. (2007), in a study with 2,373 Norwegian workers, showed that ineffective leadership causes distress, role conflict, greater exposure to workplace harassment, and less dedication to work. Currently, there is a leadership crisis in Peru and other parts of the world, greatly evidenced by polarization, since there is no figure capable of uniting a country beyond the positions that divide it (Ronderos, 2020). Given this situation, specifically in Peru, some groups are interested in changing this situation and promoting leadership in young people; an example of this is the last University CADE 2023, where the "Democracy" theme was addressed to strengthen it (Vasquez, 2023).

Due to their work in knowledge generation and dissemination, as well as their relevant presence in society, universities are called upon to play a fundamental role in preparing the intellectual capital of a country together with its ethical formation. That is, they must generate knowledge and equip their graduates with the competencies and skills necessary for the practice of their specialty, in addition to cultivating an ethical, critical, and responsible awareness to face

national and global challenges (Tünnermann, 2011), including meeting the Sustainable Development Goals (Sustainable Development Solutions Network Australia/Pacific, 2017).

Likewise, according to the International Labor Organization and the Inter-American Development Bank (ILO, 2021), by 2030 in Latin America and the Caribbean, more than 15 million new jobs are projected to be generated, which would evidence the transition towards a sustainable economy in which leadership will be essential. This scenario raises the need to prepare human capital with skills to predict the direction of change and to cope with it. In this context, organizations increasingly expect their employees to be equipped with proactive leadership skills. That is, leaders should encourage others to prepare for change. This type of leadership is known as transformational leadership (Barut et al., 2010).

In 2023, Hadziahmetovic et al. reviewed 90 articles published between 2016 and 2022 on leadership and found that 36% of the studies addressed transformational leadership. They concluded that it is the most studied and developed theory at present regarding leadership. Its main precursor is Bernard M. Bass, who relied on the charismatic and transformational leadership approaches of House in 1977 and Burns in 1978 (Castro, 2007). Burns differentiated two types of leadership: transactional and transformational. In the first case, it is recognized as an exchange between the leader and his or her followers, in which the latter receives a value in exchange for their work or, on the contrary, receives a sanction, denoting a cost-benefit relationship. In contrast, transformational leadership promotes the emergence of the awareness of employees, who accept and commit themselves to fulfilling the organization's mission, leaving aside their individual interests to concentrate on the interests of the group as a whole (Castro, 2007).

Bass (1985, cited by Contreras et al., 2016) defines transformational leadership as leadership that motivates people to do more than they expect, and, as a result, changes occur in groups, organizations, and society, which, in turn, constitute a benefit for society. For Bass, transformational and transactional leadership are not mutually exclusive; leaders can use both types of leadership in different situations (Castro, 2007).

According to Jovanovic & Ciric (2016, cited by Sukdee, 2021), transformational leadership is the most suitable for guiding university students through their education because the following aspects are taken into account: 1) the ethical dimension of the theory, i.e., the moral basis, 2) the validity of previous studies that provide support, and 3) evidence of the practice of leaders in the educational field.

Therefore, it is considered relevant to identify in the scientific literature field studies on transformational leadership in university students. Thus, the following research question was posed: What are the characteristics of empirical research studies on transformational leadership in undergraduate and graduate university students nationally and internationally between 2014 and 2023? This report presents an analysis of the last ten years on this specific topic and identifies the trends in the studies conducted, the country and specialty of the researchers, and the research design and methodology used, among others.

METHOD

Design

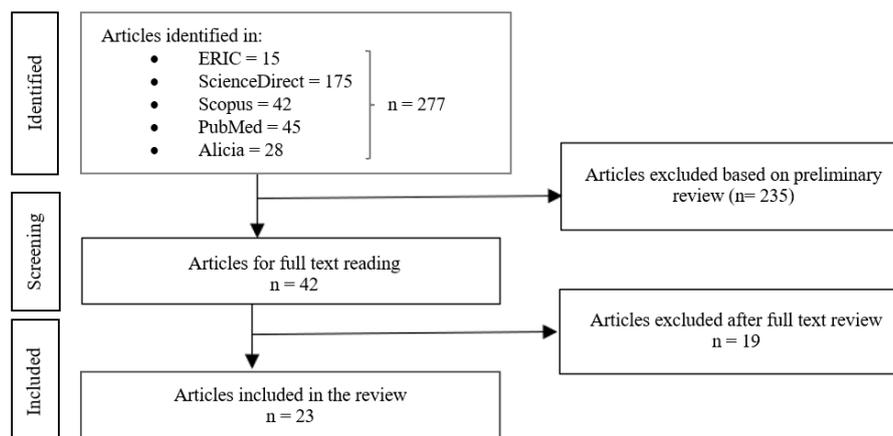
This study is of theoretical research design as it compiles the advances in a given theory and the review or update of research from primary studies (Ato et al., 2013). The type of research is a systematic review, characterized by the exhaustive review and search of the literature that includes and excludes studies based on predetermined criteria, synthesizing the results on a given topic (Cardona et al., 2018). This review presents a search of the scientific literature on transformational leadership in university students between 2014 and 2023, i.e., ten years, a reasonable time from a methodological perspective to prioritize updated information on the topic addressed (Medina et al., 2021). The updated Guide for the publication of systematic reviews, PRISMA 2020 (Page et al., 2021), was used. The criteria for selecting the articles to be used in the following review are specified below.

Procedure

The search was conducted in ERIC, ScienceDirect, Scopus, PubMed, and ALICIA databases between May and June 2023. The following keywords were used: "liderazgo transformacional en universitarios," "liderazgo en universitarios," "transformational leadership in university students," "transformational leadership in undergraduates." The combination of the following terms was also used: "liderazgo transformacional+universitarios," "transformacional leadership+university students," "transformacional leadership+undergraduates."

The articles were then selected for review using the inclusion and exclusion criteria indicated above. The details of the selection process are shown in Figure 1.

Figure 1.
Article selection flowchart



Source. Elaborated by the author.

Inclusion Criteria

a) Publication between 2014 and 2023, b) Language: Spanish and English, c) Free-access full articles, d) Articles on transformational leadership in university population (undergraduate and graduate) or organized by or in partnership with the university, e) Articles of empirical studies whether quantitative, qualitative or mixed, and f) Articles with DOI identifier.

Exclusion Criteria

In addition to the inclusion criteria, the following were considered: a) review articles, b) essays, c) book chapters, theses, manuals, and journals.

Information Analysis

The selected articles were downloaded, and then the information was collected in Excel. The following categories were used: authors, country and specialty of the main author, research design, variables studied, sample, instruments to measure leadership, and statistical analysis used.

RESULTS

A total of 277 sections were collected, to which the determined inclusion and exclusion criteria were applied, leaving 23 articles that met the required criteria (one national and 22 international). Table 1 shows the data of the selected articles according to author, title, journal, country, and language.

Table 1.

Selected articles on Transformational leadership in university students (2014-2023)

N	Author(s)/ Specialty	Year	Spanish title	Journal	Author's country /Language
1	Lamm et al./ Agricultural Education and Communication	2014	Enseñanza del liderazgo transformacional a estudiantes de pregrado en liderazgo agrícola: uso del rasgo de personalidad de amabilidad para mejorar la comprensión (Teaching transformational leadership to undergraduate agricultural leadership students: Using the personality trait of agreeableness to improve understanding)	Journal of Agricultural Education	United States / English
2	Matthew, L./ Nursing	2014	Una evaluación del liderazgo transformacional entre estudiantes de licenciatura en enfermería y enfermeras en ejercicio (An Examination of Transformational Leadership among Graduating Baccalaureate Nursing Students and Practicing Nurses)	Nurses Open Journal of Nursing	United States / English
3	Rosch, D./ Agricultural Education	2015	Efectos de las clases basadas en las experiencias de equipo en el desarrollo del liderazgo de los estudiantes de pregrado: cuando la práctica no hace la perfección (Effects of Classroom-based Team Experiences on Undergraduate Student Leadership Development: When Practice Does Not Make Perfect)	Journal of Leadership Education	United States / English
4	Perreault et al./ Psychology	2016	Fomentar el liderazgo transformacional entre adultos jóvenes: Un enfoque desde las necesidades psicológicas básicas (Fostering transformational leadership among young adults: a basic psychological needs approach)	International Journal of Adolescence and Youth	Canada/ English

5	Pascal et al./ Physical Therapy	2017	Desarrollo de liderazgo de profesionales de la rehabilitación en un país de bajos recursos: un modelo de liderazgo transformacional basado en proyectos (Leadership Development of Rehabilitation Professionals in a Low-Resource Country: A Transformational Leadership, Project Based Model)	Front. Public Health	United States and Rwanda / English
6	Devecioğlu, S./ Sports Sciences.	2018	Las orientaciones de liderazgo de los estudiantes que reciben Educación Deportiva en Turquía (The leadership orientations of the students receiving Sports Education in Turkey)	International Education Studies	Turkey/ English
7	Díaz et al./ Social Sciences and Humanities	2019	Una propuesta de evaluación de las competencias de liderazgo transformacional en los estudiantes de licenciatura. (An Approach to the Assessment of Transformational Leadership Competencies among Undergraduate Students)	Diálogos sobre Educación	Mexico/ English
8	Díaz E. R./ Administration and Business	2020	Liderazgo transformacional y equidad de género: el caso de estudiantes de posgrado (Transformational leadership and gender equity: the case of graduate students)	Revista Universidad & Empresa	Mexico/ Spanish
9	Laidlaw, L., & Din, C./ Kinesiology	2020	Explorando el aprendizaje del liderazgo en un curso de kinesiología de pregrado (Exploring leadership learning in an undergraduate kinesiology course)	The Canadian Journal for the Scholarship of Teaching and Learning	Canada/ English
10	Lisak A, & Harush R./ Administration	2021	Identidades globales y locales en la escala de balanza: Predicción del liderazgo transformacional y efectividad en equipos multiculturales (Global and local identities on the balance scale: Predicting transformational leadership and effectiveness in multicultural teams)	PLoS ONE	Israel/ English
11	Sukdee, T./ Education	2021	El desarrollo de indicadores para el liderazgo transformacional de los estudiantes de pregrado en la Universidad Nacional de Deportes de Tailandia (The Development of Indicators for Transformational Leadership of Undergraduate Students at Thailand National Sports University)	World Journal of Education	Thailand/ English
12	Fauzi et al./ Industrial Management	2021	La influencia del liderazgo transformacional en el comportamiento emprendedor de los estudiantes de Malasia (The influence of transformational leadership on Malaysian students' entrepreneurial behavior)	Entrepreneurial Business and Economics Review	Malaysia/ English
13	Lamm et al./ Agricultural Leadership, Education and Communication	2021	Programación de desarrollo de liderazgo en la educación superior: una exploración de las percepciones del liderazgo (Leadership development programming in higher education: an exploration of perceptions of transformational leadership across gender and role types)	Tertiary Education and Management	United States / English
14	Konuk, S. & Posner, B./ Administration	2021	The effectiveness of a student leadership program in Turkey.	Journal of leadership education	Turkey and United States / English
15	Tenorio, J./ University Teaching	2021	Habilidades sociales y su relación con el liderazgo en estudiantes universitarios de psicología e ingeniería (Social skills and their relationship to leadership in undergraduate psychology and engineering students)	Socialium	Peru/ Spanish
16	Lee et al./ Medicine	2022	Un análisis de ensayos de estudiantes sobre liderazgo médico y sus implicaciones educativas en Corea del Sur (An analysis of student essays on medical leadership and its educational implications in South Korea)	Scientific Reports	South Korea / English
17	Salanova et al./ Psychology	2022	El impacto de las creencias de eficacia grupal y el liderazgo transformacional en la autoeficacia de los seguidores: un estudio longitudinal multinivel (The impact of group efficacy beliefs and transformational leadership on followers' self-efficacy: a multilevel-longitudinal study)	Current Psychology	Spain/ English

18	Amjad et al./ Public Administration	2022	Una investigación empírica sobre liderazgo transformacional, empoderamiento psicológico y motivación estudiantil en universidades chinas año 2020 (An Empirical Research on Transformational Leadership, Psychological Empowerment and Student Motivation in Chinese Universities-2020 Year)	Global Journal of Political Science and Administration	China/ English
19	Howell et al./ Education	2022	Liderazgo transformacional en programas de educación superior (Transformational leadership in higher education programs)	Journal of Higher Education Policy and Leadership Studies	United States / English
20	Tortolero et al./ Education	2022	Rasgos de liderazgo predominantes en estudiantes de la Universidad Juárez del Estado de Durango (Predominant leadership traits in students of the Universidad Juárez del Estado de Durango)	Revista Iberoamericana para la Investigación y el Desarrollo Educativo	Mexico/ Spanish
21	Ghorbani et al./ Medical Sciences	2023	Liderazgo transformacional en el desarrollo de la educación transformadora en enfermería: un estudio cualitativo (Transformational leadership in development of transformative education in nursing: a qualitative study)	BMC Nursing	Iran/ English
22	Álava-Atiencie, N., & Quinde- Lituma, M./ Economics and Administrative Sciences	2023	Análisis explicativo del liderazgo transformacional en el perfil emprendedor social de jóvenes universitarios (Explanatory analysis of transformational leadership in the social entrepreneurial profile of young university students)	Educación Universitaria	Ecuador/ Spanish
23	Álamo, M., & Falla, D./ Psychology	2023	El liderazgo transformacional y su relación con las competencias socioemocionales y morales en futuros docentes (Transformational leadership and its relationship with socioemotional and moral competencies in future teachers)	Psychology, Society & Education	Spain/ English

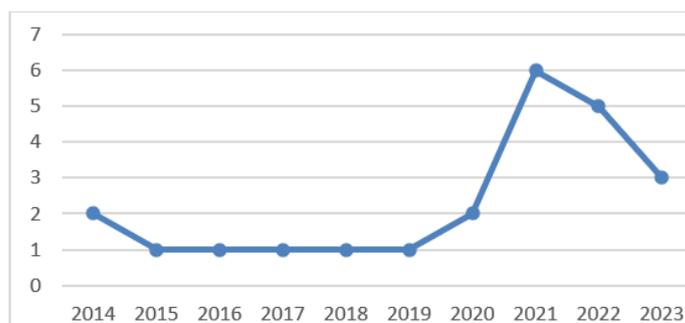
Source. Elaborated by the author.

Analysis of Articles

Articles by year of publication.

Twenty-three articles on transformational leadership with higher education students were identified for 2014-2023. Regarding the year of publication, Figure 2 shows us 2021 with six published articles (26.1%), followed by 2022 with five articles (21.7%), and 2023 with three publications (13%). It can also be seen that the data distribution remained between one (4.3%) and two articles (8.7%) between 2014 and 2020.

Figure 2.
Publications on transformational leadership in university students by year



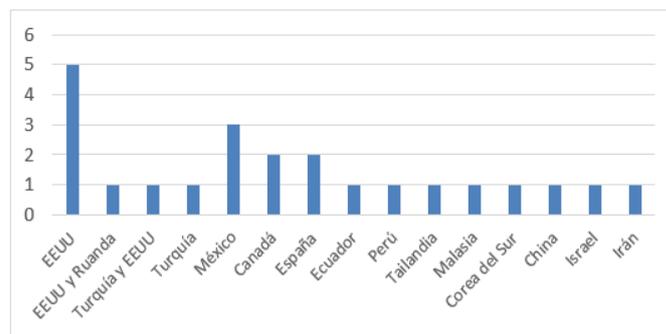
Source. Elaborated by the author.

Article by country of the main author.

Regarding the country of the main author of the publication, Figure 2 shows that the authors come from 15 different countries, which are located in Africa, North and South America, Asia, and Europe, with the United States ranking first with five articles (21.74%). It is worth noting that there are two additional publications whose one of their main authors comes from the United States, rising to 30.43%. Next, Mexico with 13.04% (3 articles). Then, Canada and Spain with 8.7% (2 articles), in addition to Turkey if we consider the article whose main authors come from the United States and Turkey. In the case of Peru and China and the rest of the countries shown in Figure 3, with only one article (4.35%).

Figure 3.

Publications on TL in university students by country of the main author



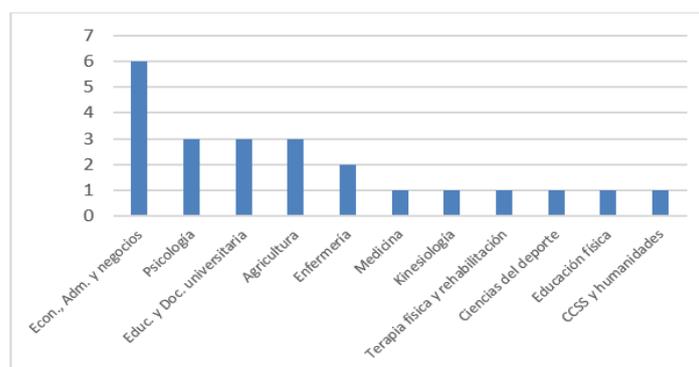
Source. Elaborated by the author.

Articles by specialty of the main author.

Figure 4 shows the distribution of the selected articles according to the specialty of the main author. As can be seen in the figure, 26% of the publications (6 cases) come from the disciplines of Economics, Administration, and Business, followed by Psychology, Education and University Teaching, and Agriculture with 13%, respectively (3 cases each). Next, Nursing with 8.7% (2 articles). Finally, six additional disciplines with one article each (4.3%). In addition, three of these disciplines are related to health (Medicine, Kinesiology, and Physiotherapy). The remaining two articles belong to the Physical Education and Social Sciences specialty.

Figure 4.

Publications on TL in university students by specialty of the main author



Source. Elaborated by the author.

Research design, variables studied, sample, instruments, and statistics

Table 2 shows the results of the publications by research design, variables studied together with transformational leadership, sample, instruments to measure transformational leadership, and statistics used in the twenty-three selected articles.

Table 2.

Articles by research design, variables studied, sample, instruments used to measure leadership, and statistical analysis used.

No.	Title in its original language	Approach / Design and type	Variables studied	Sample	Instrument to measure leadership	Validity and reliability of the leadership instrument	Statistical analysis
1	Teaching transformational leadership to undergraduate agricultural leadership students: Using the personality trait of agreeableness to improve understanding.	Quantitative, non-experimental, correlational	<ul style="list-style-type: none"> Transformational leadership. Personality trait kindness. 	Undergraduate agricultural leadership students at a southern university in the US. (n=60)	Multifactor Leadership Questionnaire (MLQ) 5X-short version by Avolio & Bass (1995).	$\alpha=.77$	<ul style="list-style-type: none"> Pearson correlational analysis. Linear regression. Multiple regression.
2	An Examination of Transformational Leadership among Graduating Baccalaureate Nursing Students and Practicing Nurses	Quantitative, non-experimental, prospective, and comparative.	<ul style="list-style-type: none"> Transformational leadership Demographic questionnaire (intervening variables): age, sex, current grade point average and type of degree program attended (for graduates), highest degree, years of experience and whether they hold a leadership position (practicing nurses). 	Graduating nursing students and practicing nurses from 4 nursing schools and 2 hospitals in New Jersey. (n=310)	Causes and Posner's Leadership Practice Inventory (LPI).	$\alpha=.93$	<ul style="list-style-type: none"> Descriptive statistics. Analysis of variance. Regression analysis
3	Effects of Classroom-based Team Experiences on Undergraduate Student Leadership Development: When Practice Does Not Make Perfect.	Quantitative, experimental, quasi-experimental.	<ul style="list-style-type: none"> Leader behavior (including transformational L). Motivation to lead. Leadership self-efficacy. 	Engineering students from a US public university who participated in the <i>pre-test, post-test</i> , and peer evaluation in 2012-2014. (n=285)	Podsakoff, MacKenzie, Moorman and Fetter's (1990) Leader Behavior Scale (LBS) that measures aspects of transformational and transactional leadership.	$\alpha=.83$ for the transformational leadership subscale and $\alpha=.79$ for the transactional leadership subscale.	<ul style="list-style-type: none"> Descriptive statistics. Paired samples <i>t</i>-tests. Confirmatory factor analysis.
4	Fostering transformational leadership among young adults: a basic psychological needs approach.	Quantitative, non-experimental, correlational	<ul style="list-style-type: none"> Leadership personality traits. Support for basic psychological needs in university. Expectations of leadership effectiveness. Transformational leadership. 	Students in biomedical sciences, psychology, health sciences, nursing, or 50 other disciplines at the University of Ottawa. (n=789)	Carless, Wearing, & Mann's (2000) Global Transformational Leadership Scale (GTL).	$\alpha=.90$	<ul style="list-style-type: none"> Descriptive statistics. Bivariate relationships. Moderate mediation analysis.
5	Leadership Development of Rehabilitation	Mixed: <i>Qualitative</i> : Interview with	<ul style="list-style-type: none"> Leadership course based on Transformational 	Physiotherapists (heads of departments and	Semi-structured interview.	Qualitative: Not applicable.	<ul style="list-style-type: none"> Qualitative: Not applicable.

	Professionals in a Low-Resource Country: A Transformational Leadership, Project Based Model.	39 physical therapists. <i>Quantitative:</i> Non-experimental, Descriptive (Knowledge test).	Leadership with a constructivist approach.	recent graduates who demonstrated leadership in their jobs in rural and urban areas) who participated in a leadership development course at a University of Rwanda Medical School. (n=71)	Pre- and post-course test (assess leadership knowledge, leadership concepts, leader attributes, and ability to write goals and develop plans).	Quantitative: The knowledge test is not subject to psychometric evaluation.	<ul style="list-style-type: none"> Quantitative: Descriptive statistics.
6	The leadership orientations of the students receiving Sports Education in Turkey.	Quantitative, Non-experimental, correlational.	Leadership Orientations-Subscales: <ul style="list-style-type: none"> People-oriented leadership. Structure-oriented leadership. Transformational leadership. Charismatic leadership. 	Physical education and sports teaching and sports management Students, and coaches of sports departments at different universities in Turkey. (n=1032)	Bolman and Deal's (1990) Leadership Orientations Survey.	The validity and reliability of the instrument was considered based on another study conducted in Turkey by Dareli (2003).	<ul style="list-style-type: none"> Descriptive statistics. K-S test. Non-parametric tests. Spearman correlation analysis.
7	An Approach to the Assessment of Transformational Leadership Competencies among Undergraduate Students.	Quantitative, Non-experimental, Descriptive, Comparative and Ex post facto.	Kouzes and Posner's (2012) transformational leadership practices: <ul style="list-style-type: none"> Modeling the way, Inspire a shared feeling vision, Challenging the process, Allowing others to act. Encourage the heart.	Undergraduate students from CETYS University in Mexico who are active participants in the FORTES program. (n=46)	Kouzes and Posner's (2012) Student Leadership Practices Inventory (S-LPI).	The validity and reliability of the instrument was considered based on data from the study conducted by Posner (2012).	<ul style="list-style-type: none"> Descriptive statistics. t-test for independent samples.
8	Liderazgo transformacional y equidad de género: el caso de estudiantes de posgrado (Transformational leadership and gender equity: the case of graduate students)	Quantitative, non-experimental, comparative.	<ul style="list-style-type: none"> 5 Kouzes and Posner's (2012) transformational leadership or exemplary leadership practices: Gender differences. 	Students of the Master's Degree in Administration and Master's Degree in Education in the city of Tijuana, Baja California, Mexico. (n=309)	Kouzes and Posner's (2012) Student Leadership Practices Inventory (S-LPI).	The reliability of the 5 dimensions of the instrument was examined, but was not specified.	<ul style="list-style-type: none"> Descriptive statistics. t-test for independent samples.
9	Exploring leadership learning in an undergraduate kinesiology course.	Qualitative	<ul style="list-style-type: none"> Perception of Leadership Learning in a course based on Transformational Leadership theory. 	Kinesiology students taking a course on learning leadership at a leading Canadian university. (n=12)	Classroom observations, anonymous response to questions, and focus groups	Not applicable.	<ul style="list-style-type: none"> Not applicable.
10	Global and local identities on the balance scale: Predicting transformational leadership and effectiveness in multicultural teams.	Quantitative, non-experimental, correlational	<ul style="list-style-type: none"> Global identity and local identity. Transformational leadership of team leaders. Leadership effectiveness. 	MBA students of 40 nationalities from 8 universities from Finland, Hong Kong, India, Israel, Spain, and USA, who participated in a project of 77 multicultural teams. (n=298)	Multifactor Leadership Questionnaire-5X (MLQ) short version by Avolio & Bass (1995).	Based on previous studies, the Idealized Influence and Inspirational Motivation dimensions were combined to form the Charisma factor ($\alpha=0.90$). Then, they performed CFAs of the other dimensions. The $\alpha=0.94$ was obtained for total TL.	<ul style="list-style-type: none"> Polynomial regression

11	The Development of Indicators for Transformational Leadership of Undergraduate Students at Thailand National Sports University.	Mixed: <i>Qualitative:</i> Development of indicators and verification of their suitability. <i>Quantitative,</i> Non-experimental, Instrumental (Evaluation of: - Accuracy standards. - Property standards. - Utility standards).	<ul style="list-style-type: none"> • Transformational leadership indicators. 	Undergraduate students at the National Sports University of Thailand. (n=450)	In-depth interview. Rating questionnaire on TL indicators.	<p>Qualitative: Not applicable.</p> <p>Quantitative: Content validity of the TL indicators on two occasions to obtain an item-objective congruence index whose values were 0.60-0.80.</p> <p>The indicators were then re-evaluated under 3 criteria by 5 experts. Finally, a TL indicator questionnaire was designed for undergraduate students at the university being studied.</p>	<ul style="list-style-type: none"> • Confirmatory factor analysis.
12	The influence of transformational leadership on Malaysian students' entrepreneurial behaviour.	Quantitative, non-experimental, exploratory, and correlational.	<ul style="list-style-type: none"> • Transformational leadership. • Psychological Empowerment (PE). • Knowledge sharing (KS) strategies. • Entrepreneurial behavior (EB). 	Undergraduate students from various engineering programs at a Malaysian university. (n=177)	Questionnaire adapted based on Avolio & Bass's (1995) MLQ Questionnaire.	The questionnaire used was previously reviewed by 2 judges for face and content validity. These data are not specified.	<ul style="list-style-type: none"> • Descriptive statistics. • Discriminant validity. • Partial least squares structural equation model.
13	Leadership development programming in higher education: an exploration of perceptions of transformational leadership across gender and role types.	Quantitative, non-experimental, comparative.	<ul style="list-style-type: none"> • Transformational leadership. • Gender differences. 	LEAD21 Leadership Development Program participants in 2015 and 2019 who are associated with the Land-Grant University System and its affiliated organizations, such as the U.S. Department of Agriculture (USDA) or Agricultural and Renewable Resources. (n=340)	Podsakoff's Transformational Leadership Behavior Inventory.	$\alpha=.77$	<ul style="list-style-type: none"> • Descriptive statistics. • Analysis of variance (ANOVA).
14	The effectiveness of a student leadership program in Turkey.	Mixed: <i>Qualitative:</i> To find parts of the program is more or less effective. Suggestions for improvement were sought. <i>Quantitative:</i> Experimental, Quasi-experimental with a Pre-test and Post-test GC.	<ul style="list-style-type: none"> • Leadership program. • Transformational leadership. 	Twenty-two primary school students from Yildiz Technical University in Turkey for both the GE and the GC. (n=44)	Student Leadership Practice Inventory (S-LPI) of Kauzes and Posner	<p><i>Qualitative:</i> Not applicable.</p> <p><i>Quantitative:</i> A meta-analysis study of the S-LPI by Posner (2010) and two other studies are mentioned. It was noted that Cronbach's alpha values exceeded 0.73.</p>	<ul style="list-style-type: none"> • Qualitative: Not applicable. • Quantitative: -Descriptive statistics. t-test for independent samples • - Bidirectional ANOVA for complex measurements.
15	Habilidades sociales y su relación con el	Quantitative, non-experimental,	<ul style="list-style-type: none"> • Social skills. • Transformational leadership. 	Psychology and engineering students in the city	MLIS scale, developed by Cárdenas (2016)	It is mentioned that the judges' discretion was	<ul style="list-style-type: none"> • Descriptive statistics.

	liderazgo en estudiantes universitarios de psicología e ingeniería (Social skills and their relationship to leadership in undergraduate psychology and engineering students)	comparative, and correlational.		of Huancayo, Peru. (n=132)	that measures transformational leadership.	validated, but it is not specified. $\alpha=.92$	<ul style="list-style-type: none"> • Pearson correlation analysis. • Linear regression. • One-factor analysis of variance.
16	An analysis of student essays on medical leadership and its educational implications in South Korea.	Mixed <i>Qualitative:</i> Analysis of the content of the essays. <i>Quantitative,</i> Non-experimental, comparative	<ul style="list-style-type: none"> • Perceptions of transformational leadership. 	Students' essays in the medical leadership course from 2015 to 2019. (n=563)	Qualitative framework developed from the thematic and content analysis.	<p>Qualitative: Not applicable.</p> <p>Quantitative: There is no psychometric instrument.</p> <p>Based on the qualitative analysis of the tests, categories are obtained for quantitative analysis using descriptive statistics and the chi-square test.</p>	<ul style="list-style-type: none"> • Qualitative: Not applicable. • Quantitative: Descriptive statistics. • Chi-square test.
17	The impact of group efficacy beliefs and transformational leadership on followers' self-efficacy: a multilevel-longitudinal study.	Quantitative. Three-wave longitudinal laboratory study.	<ul style="list-style-type: none"> • Beliefs about self-efficacy. • Transformational leadership. • Self-efficacy. 	Participants: 80% students, 11.6% full-time workers, and 8.4% unemployed. (n=456)	Validated Transformational Leadership Scale (Rafferty & Griffin, 2004)	Only the TL scale was used, not the other subcomponents. The convergent validity of the scales used in the study was evaluated, the level of composite reliability was calculated to be higher than 0.70. Discriminant validity was tested with mean variance extracted being acceptable (>0.50).	<ul style="list-style-type: none"> • Descriptive statistics. • Hierarchical linear models. • Multilevel predictors.
18	An Empirical Research on Transformational Leadership, Psychological Empowerment and Student Motivation in Chinese Universities-2020 Year	Quantitative, non-experimental, correlational.	<ul style="list-style-type: none"> • Transformational leadership. • Student motivation. • Psychological empowerment. 	Foreign and local students from Chinese universities. (n=350)	Clark's Transformational Leadership Survey (TLS), (2011).	$\alpha=.694$.	<ul style="list-style-type: none"> • Descriptive statistics. • Pearson correlation analysis. • Linear regression.
19	Transformational leadership in higher education programs.	Mixed <i>Qualitative:</i> Interviews with directors of Ph.D. programs in education. <i>Quantitative:</i> Non-experimental, Comparative (Peer review scores based on the MLQ-5x).	<ul style="list-style-type: none"> • Transformational leadership skills. • Ph.D. program. 	<p>Presidents and directors of the 5 Ph.D. programs.</p> <p>Students from 5 Ph.D. programs at public universities in Virginia enrolled for at least one year (n=30)</p>	Multifactor Leadership Questionnaire (MLQ-5x).	It is mentioned that the instrument is valid and reliable, but it is not specified. Validity was strengthened by providing the research team with the opportunity to provide rating rubric feedback.	<ul style="list-style-type: none"> • Descriptive statistics. • Peer-reported mean scores. • One-sample t-test.
20	Rasgos de liderazgo predominantes en estudiantes de la	Quantitative, Non-	<ul style="list-style-type: none"> • Leadership styles, including 	First-to-fifth semester Economics,	Student leadership questionnaire,	Validity is indicated based on the study by	<ul style="list-style-type: none"> • Descriptive statistics.

	Universidad Juárez del Estado de Durango (Predominant leadership traits in students of the Universidad Juárez del Estado de Durango)	experimental, descriptive	transformational leadership.	Accounting, and Administration students of Universidad Juárez del Estado de Durango, Mexico. (n=66)	adapted and validated in Spanish samples by Molero, Recio and Cuadrado (2010) of the Multifactor Leadership Questionnaire by Bass and Avolio (1990).	Molero et al. (2010). Only the Charisma and Individualized Consideration of TL dimensions and the Contingent Reward of transactional leadership dimension are applied based on the results of Ramirez and Sgambatti's (2008) study in university students. $\alpha=.905$	
21	Transformational leadership in development of transformative education in nursing: a qualitative study.	Qualitative	<ul style="list-style-type: none"> • Experience on the implementation of educational programs based on transformational leadership 	Participants (9 are students: 3 Ph.D. students, 2 Master's degree students and 4 undergraduate students), 11 teachers and 4 educational directors. (n=24)	In-depth semi-structured individual face-to-face interviews and field notes.	Not applicable.	<ul style="list-style-type: none"> • Not applicable.
22	Análisis explicativo del liderazgo transformacional en el perfil emprendedor social de jóvenes universitarios (Explanatory analysis of transformational leadership in the social entrepreneurial profile of young university students)	Quantitative, non-experimental, correlational	<ul style="list-style-type: none"> • Transformational leadership style. • Entrepreneurial profile. 	Students from 12 schools who have been in university for at least two years. (n=856)	Multifactor Leadership Questionnaire (MLQ, 5X abbreviated), by Avolio et al., (1999).	Exploratory factor analysis using the Extraction Method Principal Component Analysis to test scale reliability and structure. Reliability internal consistency by composite reliability, variance extracted and Cronbach's alpha (0.574-0.903).	<ul style="list-style-type: none"> • Descriptive statistics. • Exploratory factor analysis. • Multiple linear regression.
23	El liderazgo transformacional y su relación con las competencias socioemocionales y morales en futuros docentes (Transformational leadership and its relationship with socioemotional and moral competencies in future teachers)	Quantitative, non-experimental, correlational	<ul style="list-style-type: none"> • Transformational leadership. • Social-emotional competencies. 	Prospective teachers aged between 17 and 63 at the University of Cordoba, Spain. (n=395)	Multifactor Leadership Questionnaire (MLQ) by Bass and Avolio (1995).	$\alpha=.088$ Confirmatory factor analysis (CFA) showed an excellent fit.	<ul style="list-style-type: none"> • Descriptive statistics. • Confirmatory factor analysis. • Student's t-test. • Pearson correlation analysis. • Linear regression.

Source. Elaborated by the author.

Regarding the research approach, most of the articles (69.6%, 16 cases) are quantitative, followed by publications with a mixed approach (21.7%, 5 cases), and finally qualitative (8.7%, 2 cases).

For the research design, only quantitative studies (16) and the quantitative part of research with a mixed approach (5) were considered, i.e., 21 articles. Among the non-experimental studies, the majority (42.86%, nine articles) is correlational, aimed to explore the relationships between variables to predict or explain their behavior (Ato et al., 2013). Next, we found comparative

(23.81%, five articles) and descriptive (9.52%, two articles) studies. Then, we found an instrumental and longitudinal article with 4.76%, respectively. Likewise, we found the experimental design, standing out the quasi-experimental type, which amounts to 14.29% (3 articles).

Concerning the variables studied in the 23 articles selected, first, we have the studies that highlight the interest in studying Transformational Leadership either self-assessed by the student (Alamo & Falla, 2023; Amjad et al., 2022; Fauzi et al., 2021; Howell et al., 2022; Konuk & Posner, 2021; Lamm et al., 2021; Lamm et al., 2014; Perreault et al., 2016; Salanova et al., 2022); or a team (Matthew, 2014), Leader Behavior (Rosch, 2015), Leadership Practices (Diaz et al., 2019; Diaz, 2020), Leadership Orientation, Leadership Styles, and Motivation to Lead (Alamo et al., 2023; Devecioğlu, 2018; Ghorbani et al., 2023). Second, we can group the research by Leadership Self-Efficacy, Efficacy Expectations, Leader Efficacy, and Self-Efficacy Beliefs (Lisak & Harush, 2021; Perreault et al., 2016; Rosch, 2015; Salanova et al., 2022). A third group of publications is grouped into the Perception of taking a course or program to foster TL, Perception of learning from a course, and Evaluation of the effectiveness of a program based on TL (Ghorbani et al., 2022; Konuk & Posner, 2021; Laidlaw & Din, 2020; Pascal et al., 2017). A fourth classification is composed of gender difference studies (Diaz, 2020; Lamm et al., 2021). Other variables found are psychological empowerment (Amjad et al., 2022; Fauzi et al., 2021), entrepreneurial behavior/entrepreneur profile (Alava-Atiencie & Quinde-Lituma, 2023; Fauzi et al., 2021), social skills/socioemotional competencies (Alamo & Falla, 2022; Tenorio, 2021), and personality (Lamm et al., 2014; Perreault et al., 2016). Finally, there are understudied variables such as global and local identity (Lisak & Harush, 2021), support to psychological needs (Perreault et al., 2016), knowledge sharing strategies (Fauzi et al., 2021), Student motivation (Lee et al., 2022), and TL indicator production (Sukdee, 2021), which is an instrumental study.

Regarding the sample, 65.22% of studies (15 articles) employed undergraduate students, and 13.04% of studies (three articles) used undergraduate students and other age groups (mainly employees). Likewise, 8.70% of studies (two articles) employed master's degree students. Finally, one study used undergraduate and graduate students, another employed recent graduates, and another used Ph.D. students, amounting to 4.35% of the studies (one article per age group).

Considering the instruments used in quantitative research, they are diverse, mostly psychometric, standing out in the first place Bass & Avolio's Multifactor Leadership Questionnaire (MLQ) (1990; see Lamm et al., 2014; Lisak et al., 2021; Fauzi et al., 2021; Howell et al., 2022; Tortolero et al., 2022; Alava et al., 2023; Alamo et al., 2023) with 33.33% (7 articles). In second place, Kouzes & Posner's Leadership Practice Inventory (LPI) (2012; see Matthew, 2014; Díaz et al., 2019; Díaz, 2020; Konut & Posner, 2021) with 19.05% (4 articles) and, in third place, Podsakoff et al.'s Leader Behavior Scale (1990, see in Rosch, 2015; Lamm, 2021) with 9.52% (2 articles). In addition, among the psychometric instruments are Bolman and Deal's Leadership Orientations Survey (1990, in Devecioğlu, 2018), Carless et al.'s Global Transformational Leadership (GTL) (2000, in Perreault et al., 2016), Clark's Transformational Leadership Survey (TLS) (2011; Amjad et al., 2022), Transformational Leadership Scale validated by Rafferty & Griffin (2004, in Salanova et al., 2022) and Cardenas' MLIS Scale (2016, in Tenorio, 2021) of Peruvian origin with 4.76% (1 article) in each case. Likewise, there is a TL Indicator Questionnaire, which was elaborated by Sukdee (2021). Finally, Table 2 shows that

other tools or strategies were produced to measure transformational leadership, such as Knowledge Tests (Pascal et al., 2017) and Essay Analysis (Lee et al., 2022).

It should be noted that in the method section of the articles, the authors indicated the psychometric properties of validity and reliability of the instruments selected (standing out those that measure transformational leadership), although not all of them in the same way. Below, we will only provide an overview of the first two instruments applied because they were the most widely used. In the case of Bass & Avolio's MLQ, in the studies indicated above, more information is available on reliability, which was obtained through Cronbach's Alpha, whose values range from 0.574-0.94, or that were used in other research by other authors; similarly, this happened with validity. However, less information is provided in this regard. Few articles point out face validity, as well as exploratory and confirmatory factor analysis. In the case of the LPI of Kouzes & Posner, something similar happened as in the MLQ, but with fewer data in this regard; one of the articles indicated an Alpha of 0.93 (Matthew, 2014). In general, the information available in Table 2 shows some data obtained by the same authors in the psychometric tests used, whose alpha values fluctuate between 0.694-0.92.

Table 2 shows that the research objectives are consistent with the statistics used and the results obtained in the 21 articles, both quantitative studies and the quantitative part of the mixed approach. Descriptive statistics were used in 80.95% of the publications (17 articles) to present the characteristics of the sample and the initial results by frequencies, percentages, mean, deviation, and, to a lesser extent, asymmetry. Among the comparative studies, we found the use of the t-test for independent samples (14.29%, 3 cases), non-parametric tests (4.76%, 1 case), one-way analysis of variance (ANOVA) (14.29%, 3 cases), and two-way ANOVA (4.76%, 1 case).

As indicated, a considerable portion of the studies was correlational, which is consistent with the statistics used, such as Pearson correlation (14.29%, 3 cases) and Spearman correlation (4.76%, 1 case), as well as other techniques, such as simple linear regression (19.05%, 4 cases) and multiple linear regression (9.52%, 2 cases). Other procedures such as the Partial Least Squares Structural Equation Model, Hierarchical Linear Models, Multilevel Predictors, and Polynomial Regression were also used. Regarding quasi-experimental studies, t-tests for paired or related samples were used.

DISCUSSION

The purpose of this study was to analyze research published in indexed journals in the last ten years (2014-2023) on transformational leadership in university students. From a search process, 23 articles were identified, to which various criteria were applied to systematize the main results.

Regarding the year of publication, it was observed that there was uninterrupted scientific production during the decade analyzed, with an increase in studies from 2021 onwards, coinciding with the occurrence of the COVID-19 pandemic crisis and the return to the new normality. This result is consistent with the study conducted by Muñoz-Chávez et al. (2022), who examined the transformational leadership-linked competencies to face the COVID-19 contingency in Mexican university teachers. According to Contreras et al. (2016) and Hadziahmetovic et al. (2023),

transformational leadership is one of the most widely used leadership approaches due to its adaptability to crisis management. Therefore, there has been more research on this theory in the last decades. In addition, there is interest in developing transformational leadership in the educational sphere at various levels, such as university (Li, 2022).

Regarding the authors of the articles, they came from 15 countries on different continents, with the United States being the country from which the main authors published the most on the subject, ranking first with 30.43%. This shows that this country still maintains its hegemony in research. This finding was similar to that found by Hadziahmetovic et al. (2023) in a systematic review of leadership styles. On the other hand, it is strange that China did not stand out even though it conducted systematic reviews on the subject as compared to the United States and Canada (Li, 2022). This situation is possibly because the transformational leadership scientific production has been oriented towards acting leaders in the organizational field and educational management, but to a lesser extent in university students. Based on the above, it is suggested that Peruvian researchers continue to conduct empirical studies and that the latter be published in high-impact indexed journals to have a greater international presence and that studies be disseminated not only through university repositories or the ALICIA platform of Concytec.

As for the origin discipline of the studies, 26% of publications come from researchers in Economics, Administration, and Business, followed by Psychology, Education and University Teaching, and Agriculture with 13%, and Nursing with 8.7%. Likewise, six additional disciplines were found, with 4.3%. This finding corroborates that leadership is a transversal skill in demand in any profession, as stated by ECLAC/OEI (2020).

Regarding the research approach, most of the articles (69.6%) are quantitative, then there are the publications with the mixed approach (21.7%) and finally the qualitative ones (8.7%). This result was similar to the studies of Hadziahmetovic et al. (2023) and Li (2022), whose predominant approach was quantitative. For Ugalde and Balbastre (2013), quantitative research has advantages such as it offers a structured view, especially because of the techniques used to collect data to study the phenomenon of interest and facilitates the inference of results in large populations, allowing their generalization. Therefore, it is recommended to expand the production of experimental studies, especially in testing the effectiveness of programs conducted in universities to promote the development of transformational leadership in undergraduate and graduate students in their university education to prepare them to be agents of change in a society increasingly characterized by a VUCA environment, which demands competent and ethical leaders.

The articles reviewed studied several variables in addition to transformational leadership in university students, which were classified into six groups because they presented an element that united them. Details of the findings can be found in the Results section. Likewise, Li (2022), found in a review study of articles on transformational leadership in China that several variables worked together with the main research variable were oriented to the educational context, especially in the management of schools.

As for the instruments used in quantitative research, there is a diversity of tools, standing out the Multifactor Leadership Questionnaire (MLQ) by Bass & Avolio (1990) and the Leadership

Practice Inventory (LPI) by Kouzes & Posner (2012), whose psychometric properties had been studied in the same research or data were available from the adaptations made in the countries where the instruments were administered. Similarly, Li (2022) found that one of the most widely used psychometric instruments was the Avolio & Bass MLQ and provided details about its validity and reliability. However, Cronbach's Alpha values were higher (0.890-0.971) in Li's (2022) study compared to the results in this study (0.574-0.940). Nevertheless, both studies report adequate validity and reliability indices of the MLQ. In this sense, it is recommended to continue researching the psychometric properties of the existing instruments, in addition to promoting the design of new instruments, either from psychometric or qualitative approaches.

Likewise, an overview was provided of the statistics used in the articles analyzed under the quantitative approach, which were in line with their respective objectives and research designs. A similar situation is seen in the study conducted by Li (2022), which shows the importance of the use of statistics to produce various research topics in transformational leadership, especially in university students. In addition, researchers must be trained not only in statistics but also in the management of the qualitative and mixed approach, whose proportion of studies analyzed was lower compared to the quantitative approach. This situation was also present in the studies conducted by Li (2022) and Hadziahmetovic et al. (2023). Therefore, further research using the qualitative and mixed approach is recommended.

In general, it is concluded that the review on transformational leadership in university students provides useful information to researchers, academics, and university education managers to broaden and deepen the topic, as well as to design programs and strategies to develop leadership competence in students as part of their training, with a positive impact on society.

Finally, two limitations were identified in reviewing the selected articles. First, the period selected (2014-2023). Although it provides with recent information, a scarce number of studies were found. From an optimistic view, this situation represents an opportunity to further develop the topic in the university population. The second limitation was language because articles were selected in English and Spanish, both languages spoken by a considerable number of people in the world; however, reports in Portuguese were excluded, a language spoken in Brazil, where there is a significant scientific production in Latin American and Caribbean journals indexed in the Journal Citation Report (JCR), with 50.4% of presence according to Ronda-Pupo (2021). However, the findings presented provide valuable information on the topic analyzed.

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