

**Health habits and quality of life of university students in health courses**  
**Saúde e qualidade de vida de universitários da área da Saúde**  
**Salud y calidad de vida de universitarios del área de salud**

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Exploratory and sectional study with a quantitative approach, whose objectives were to identify health habits and measure the quality of life (QoL) of university students of the health field, as well as to verify the relationship between these variables. The data collection was conducted in a public federal university of Minas Gerais, in 2012, through the National College Health Risk Behavior (NCHRB) and the World Health Organization Quality of Life-bref (WHOQOL-bref). 253 students participated, mostly female, single and with a mean age of 22.4 year. The health habits observed highlighted the need for attention regarding the health of university students. The best scores of QoL were obtained in the physical and social relations dimensions, which correlated positively with healthy habits. It was found that the better the perception of health, the better the QoL. This study made it possible to better understand the health habits and the QoL of the participants, as well as to identify the relationship between health and QoL.

**Descriptors:** Students health occupations; Quality of life; Health behavior.

Estudo exploratório, seccional, de abordagem quantitativa, cujos objetivos foram identificar os hábitos de saúde e mensurar a qualidade de vida (QV) de universitários da área da Saúde, bem como verificar a relação entre estas variáveis. A coleta de dados foi realizada em uma universidade pública federal de Minas Gerais, em 2012, por meio do *National College Health Risk Behavior* (NCHRB) e do *World Health Organization Quality of Life-bref* (WHOQOL-bref). Participaram deste estudo 253 estudantes, a maioria do sexo feminino, solteira e com média de idade de 22,4 anos. Os hábitos de saúde observados evidenciaram a necessidade de atenção à saúde dos universitários. Os melhores escores de QV foram obtidos nos domínios Físico e Relações Sociais sendo que estes correlacionaram-se positivamente com os hábitos saudáveis. Observou-se que quanto melhor a percepção de saúde dos universitários, melhor sua QV. Este estudo possibilitou conhecer melhor os hábitos de saúde e a QV dos participantes, bem como identificar a relação entre saúde e QV.

**Descritores:** Estudantes de Ciências da Saúde; Qualidade de vida; Comportamentos Relacionados com a saúde.

Estudio exploratorio, seccional, de abordaje cuantitativo, cuyos objetivos fueron identificar los hábitos de salud y mensurar la calidad de vida (CV) de universitarios del área de la Salud, así como verificar la relación entre estas variables. La colecta de datos fue realizada en una universidad pública federal de Minas Gerais, en 2012, por medio del *National College Health Risk Behavior* (NCHRB) y del *World Health Organization Quality of Life-bref* (WHOQOL-bref). Participaron de este estudio 253 estudiantes, la mayoría del sexo femenino, soltera y con promedio de edad de 22,4 años. Los hábitos de salud fueron observados y evidenciaron la necesidad de atención a la salud de los universitarios. Los mejores puntajes de CV fueron obtenidas en los dominios Físico y Relaciones Sociales siendo que estos se correlacionaron positivamente con los hábitos saludables. Se observó que cuanto mejor la percepción de salud de los universitarios, mejor su CV. Este estudio permitió conocer mejor los hábitos de salud y la CV de los participantes, así como identificar la relación entre salud y CV.

**Descriptores:** Estudiantes del área de la salud; Calidad de vida; Conductas relacionadas con la salud.

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## INTRODUCTION

**T**he World Health Organization (WHO) defines quality of life (QoL) as “[...] the person’s perception of his or her position in life, in their culture context and system of values in which he or she lives and in relation to his or her goals, expectations, standards and concerns”.

It is a broad concept, that relates the environment to physical and psychological aspects, level of independence, social relationships and personal belief aspects, according to the individuals’ perception.<sup>1</sup>

The QoL concept comprises several aspects, including health<sup>2</sup>. In the health dimension, the theme of quality of life is seen as a broad concept, based on the understanding of basic human, material and spiritual needs, with a focus on the concept of health promotion, and, in a more directed way, relates to the ability of living without diseases or to overcome the difficulties arising from them<sup>3</sup>.

University life is generally part of the life cycle of adolescents and/or young people and has particularities and characteristics that have an impact on the quality of life and health of all those involved<sup>4,5</sup>. Entering university and the new dynamics of academic life may interfere with various factors related to the student lifestyle, such as eating habits, physical activities, use of alcohol, tobacco and other drugs, sexual behavior, among others, that may compromise both their health and quality of life<sup>4,6</sup>.

University students are vulnerable to health-risk behaviors that can lead them to morbidities. A recent study with university students from northern Minas Gerais identified that the most prevalent health risk behaviors were low consumption of fruit and vegetables, no aerobic exercise and irregular use of condoms in sexual relations. In addition, the use of alcohol and illicit drugs and the involvement in fights were prevalent among male students<sup>7</sup>.

In this context, the importance of developing researches and interventions related to the various student demands, such as the monitoring of health indicators and quality of life of the students is important<sup>8</sup>.

Thus, studies focused in the health and quality of life of university students are relevant, aiming to seek evidence that might raise the awareness of students to their vulnerability, the need to adopt healthier habits, and support the implementation of actions of disease prevention and health promotion.

In this context, the present research aimed to identify health habits and measure the quality of life (QoL) of university students in the health field, as well as to verify the relationship between these variables.

## METHOD

This is an exploratory and sectional study with a quantitative approach, carried out at a public federal university in Minas Gerais. The population of this study consisted of university students in the health area and the inclusion criteria included those who were regularly registered in a graduation course in the health field and were 18 years old or older. The survey was carried out in the first half of 2012.

The sample was calculated by considering a coefficient of determination  $R^2=0,10$  in a multiple linear regression model with seven predictors, having a level of significance or error of type I of  $\alpha=0.01$ , and an aprioristic statistical power of 90.0%. The 2002 Power Analysis and Sample Size (PASS) application was used, and generated a minimum sample size of  $n=228$ . A simple random sample was done by considering a sampling loss of 20%, generating a final sample of 253 participants.

The health habits were found through the National College Health Risk Behavior (NCHRB), a questionnaire adapted and validated for Brazilian Portuguese in 2010, aimed at Brazilian university students to identify their health-related attitudes. It has 52 questions about sociodemographic data, safety and violence, suicide, tobacco, alcoholic beverage, marijuana, cocaine and other drugs, sexual behavior, body weight, food, physical activity and health information<sup>9</sup>.

From the sum of the answers to the questions of the NCHRB questionnaire, the health habits were divided into healthy habits and inadequate habits: using the safety belt

when riding in a car in the front seat; using a helmet when riding a motorcycle; riding on any vehicle in which the driver had consumed alcohol; involvement in a physical fight; attempted suicide; regular consumption of cigarettes; consumption of alcohol; consumption of marijuana, cocaine, or other types of drugs; use of condom during sexual intercourse; consumption of alcohol or drugs prior to sexual intercourse; contraceptive methods used; the practice of vomiting or using laxatives to lose or maintain weight, and the practice of exercises or sports.

QoL was evaluated by the WHO questionnaire, the World Health Organization Quality of life-bref (WHOQOL-bref). This instrument is an abbreviated version consisting of 26 questions, two questions are about the general health and the other 24 are divided into the following domains: 1) Physical: pain and discomfort; energy and fatigue; sleep and rest; mobility; activities of daily life; dependence on medication or treatments; work capacity; 2) Psychological: positive feelings; thinking, learning, memory and concentration; self-esteem; body image and appearance; negative feelings; spirituality/religion/personal beliefs; 3) Social Relationships: personal relationships; social support; sexual activity; 4) Environment: physical safety and protection; home environment; financial resources; health and social care; availability and quality; opportunities for acquiring new information and skills; participation and opportunities for recreation/leisure; physical environment (pollution/noise/traffic/climate); transportation<sup>10</sup>.

The statistical analysis was carried out using the Statistical Package for the Social Sciences (SPSS), version 17.0. Exploratory analyses of the data were carried out in a calculation of absolute and percentage frequencies for categorical variables, and measures of centrality and dispersion for quantitative variables. In order to obtain the QoL scores, the syntax provided by the WHOQOL<sup>11</sup> group was used, and the Alpha of Cronbach coefficient was used for evaluation of internal consistency.

Pearson's correlation test was used in the analysis between quantitative variables, and Spearman's correlation when one of the variables was ordinal. Correlations were classified as weak ( $0 < r < 0.3$ ), moderate ( $0.3 \leq R < 0.5$ ) or strong ( $R \geq 0.5$ )<sup>12</sup>. A multiple linear regression was used to analyze the predictors that impacted each of the four QoL domains. In the analysis, the level of significance used was 1.0%.

This research was approved by the Ethics Committee in Research with Human Beings of the institution under protocol no 2180/2011 and conducted in accordance with the ethical standards required by Resolution 466/2012 from researches involving humans<sup>13</sup>. The participants received guidance on the nature of the research, its aims, methods, possible benefits and absence of risks, information contained in the Free and Informed Consent Form (FICF). Only after the subject consented and signed the FICF the data collection performed.

## RESULTS

253 students from the following graduation courses participated: Biomedicine (8.7%); Physical Education (9.9%); Nursing (15.4%); Physical Therapy (17.0%); Medicine (27.3%); Nutrition (11.4%), and Occupational Therapy (10.3%).

Of the participants, 95.7% were single, 72.3% were female, 80.2% declared white skin colour, 67.6% were from another city and 34.4% had a family monthly income of 1 to 5 minimum wages. Their age ranged from 18 to 43 years (average of 22.4 years, SD = 3.69 years).

Regarding the overall health evaluated by the NCHRB, the students described it as excellent (24.6%), very good (43.7%), good (30.5%), and bad (1.2%). In addition, the majority of students, 92.1%, reported no chronic disease.

As for safety-related habits, 63.6% of participants reported that they always use the seat belt when riding in a car in the front seat; however, when riding in the back seat, this percentage fell to 12.3%. Helmet use while riding a motorcycle in the last 12 months was reported by 97.3% of the students. However,

only 2.5% of those who have rode bicycles in the last 12 months have worn helmets. About riding in a vehicle in which the driver (the own student or another person) had consumed alcohol, 15% reported having done it at least once, 23.3% two or three times, 5.9% four or five times, and 10.3% six or more times in the last 30 days.

The carrying of firearms or white weapons and the involvement in physical fights presented low prevalences (0.8% and 3.2%, respectively) in the sample. In relation to suicide, 5.5% reported to have seriously considered it and 0.4% had attempted suicide in the previous 12 months.

In relation to alcohol consumption, 89.7% of university students reported that they had already tried alcohol and 49.7% had their first experience with alcohol before the age of 17. 78.3% of the participants reported drinking alcohol in the 30 days prior to the study, 28.1% consumed it for one or two days, 20.9% consumed it from three to five days, 20.2% from six to nine days, 7.1% from 10 to 19 days and 2.0% from 20 to 29 days. In relation to tobacco consumption, 42.3% reported that they had tried cigarettes and 8.3% reported that they had smoked regularly at some point.

As for illicit drug use, 17.8% reported that they have used marijuana and 1.2% used cocaine at some point. The consumption of glue, aerosol, or any paint or spray to get out of reality was informed by 5.5% of the students; 3.2% have used pills or steroid injections without a prescription and no student reported having used a needle for the use of illicit drugs. The use of drugs such as LSD, PCP, ecstasy, mushrooms, amphetamine (speed), amphetamine (ice) and/or heroin was reported by 6% of participants. In the 30 days prior to the study, the consumption of marijuana was reported by 4.8% of the students, and 3.6% used it 1 or 2 times. 0.8% used 3 to 9 times, 0.4% 10 to 19 times; 0.4% used cocaine 1 or 2 times, and 0.4% used other types of illicit drugs, such as LSD, PCP, ecstasy, mushrooms, amphetamines (speed), amphetamine (ice) and or heroin, 1 or 2 times.

In relation to sexual behavior, 89% of the students reported that they have already

had sexual intercourse, and 72.4% of them had had their first relation between 15 and 20 years. In the last sexual intercourse, the most commonly used contraceptive methods were contraceptive pills (62.5%) and condoms (53.0%). 4.3% of participants reported that they did not use any method to prevent pregnancy, and 17.4% reported that they had used alcohol or drugs before sexual intercourse.

As for the eating habits on the day before the study, 23.3% of students had not consumed fruit or juice and 20.6% had not consumed greenery or cooked vegetables; 37.9% reported having consumed hamburgers or snacks at least once the day prior, and the same was true of biscuits and sweets for 50.2%.

Most university students described their weight as normal (50.2%) or slightly above normal (32.4%). To maintain or lose weight, 37.2% were on diets and 52.6% used exercise. Inadequate practices for weight loss, such as the use of laxatives or vomiting and the use of slimming pills, were reported by 1.6% of students. The practice of exercises or sports in the seven days prior to the study was reported by 56.9% of the participants.

According to the information about health care received in the university, 42.3% of the students reported having received information on the prevention of tobacco use, 49.8% on the prevention of alcohol/drugs use, 20.6% on the prevention of violence, 52.6% about accident prevention and safety actions, 6.7% about suicide prevention, 41.9% about prevention of pregnancy, 53.8% about prevention of Sexually Transmitted diseases (STD), 50.6% about preventing infections by the Human Immunodeficiency Virus (HIV) and Acquired immune Deficiency Syndrome (AIDS), 49.0% about dietary habits and nutritional aspects and 57.7% on physical activities.

In relation to QoL, 58.5% of the students assessed it as good. As for the QoL domains, the best scores were obtained in the physical (75.07) and social relations (74.70) domains, and the psychological and environment domains had lower scores (68.49 and 64.29, respectively). Table 1

presents the measures of centrality and dispersion and the Cronbach Alpha coefficient for the scores of the WHOQOL-bref domains obtained in this study.

**Table 1.** Measures of centrality and dispersion of the scores of the WHOQOL-bref domains of students of the health field, Uberaba, 2012.

Domain WHOQOL-bref	Minimum	Maximum	Mean	Median	Standard deviation	Cronbach Alpha
Physical	25.00	100.00	75.07	75.00	13.54	0.77
Psychological	25.00	100.00	68.49	70.83	14.69	0.80
Social relations	25.00	100.00	74.70	75.00	16.22	0.68
Environment	21.88	100.00	64.29	65.62	14.28	0.79

The correlation between the variable "general health description" (NCHRB) and the QoL domains (WHOQOL-bref) showed positive and significant results, being of moderate intensity with the physical, psychological and environmental domains and weak with the social relations domain.

**Table 2.** Correlation between general health description and the QoL domains of students in undergraduate courses in the health area. Uberaba, 2012.

	Domains (WHOQOL-bref)							
	Physical		Psychological		Social relations		Environment	
	r	p	r	p	R	p	r	P
<b>General health description (NCHRB)</b>	0.48	<0.001	0.43	<0.001	0.22	<0.001	0.39	<0.001

Note: r = Spearman correlation test.

According to Table 3, a weak positive and statistically significant correlation can be observed between habits considered healthy and the physical and social relations domains of QoL. As for inadequate habits, a weak, negative and marginally significant correlation was observed with the psychological domain of QoL.

**Table 3.** Correlation between QoL domains and the healthy and inadequate health habits of students in the health undergraduate courses. Uberaba, 2012.

Domains WHOQOL-bref	Healthy habits		Inappropriate health habits	
	r*	p	r*	p
Physical	0.12	0.04	-0.09	0.12
Psychological	0.09	0.12	-0.12	0.053
Social relations	0.15	0.01	-0.08	0.17
Environment	-0.03	0.62	0.006	0.92

Note: r = Pearson correlation test.

Table 4 shows the multiple linear regression analysis with the QoL domains as outcomes. The predictors were the variables gender, semester of the course, monthly family income, General Health description (NCHRB), health information received and inadequate health habits.

For the physical domain, the proportion of variance explained by the model was  $R^2 = 20.3\%$  and for the social relations domain it was  $R^2 = 6.9\%$ . The statistically significant predictor for QoL in these two domains was the description of general health. This variable had a higher

standardized regression coefficient for the physical domain,  $\beta = 0.45$ , and for the social relations domain,  $\beta = 0.25$ .

For the psychological domain, the proportion of variance explained by the model was  $R^2 = 19.4\%$  and for the environment domain it was  $R^2 = 23.1\%$ . The statistically significant predictor for the Psychological domain of QoL was description of general health while for the environment, they were, in descending order, general health and income. The variable description of General

Health presented a higher standardized regression coefficient for the psychological domain,  $\beta = 0.43$ , and for the environment domain,  $\beta = 0.35$ . The monthly family income variable showed a beta value of 0.28 for the environment domain.

Gender, course semester and health information received did not have a statistically significant relation to inadequate health habits, when controlled for the other variables.

**Table 4.** Multiple linear regression analysis for QoL domains according to students from health courses. Uberaba, 2012.

Predictors	Domain		Domain		Domain		Environment	
	Physical		Social relations		Psychological		domain	
	$\beta$	p	$\beta$	p	B	P	$\beta$	P
Gender	0.12	0.054	0.15	0.03	0.04	0.50	0.07	0.21
Course semester	0.008	0.90	0.08	0.24	-0.01	0.78	-0.02	0.64
Monthly family income	-0.10	0.11	0.06	0.32	0.01	0.81	0.28	<0.001
General health description (NCHRB)	0.45	<0.001	0.25	<0.001	0.43	<0.001	0.35	<0.001
Health information received	0.05	0.44	0.17	0.81	0.03	0.56	0.06	0.34
Inappropriate health habits	-0.18	0.77	-0.05	0.42	-0.09	0.12	0.02	0.69

## DISCUSSION

The profile of the students who participated in this study is similar to that found in other studies that describe a higher frequency of college students of federal institutions of the female sex, marital status single, and age between 20 and 24 years<sup>14,15</sup>.

As for safety-related habits, a low percentage of the students were found to use seat belts in vehicles, especially when riding in the rear seat. Helmet use was more related to motorcycles and there were reports of association of drinking and driving. A study on traffic behavior among medicine students found higher results, with 91.2% of university students using seat belts and 95.5% always wearing helmets. However, similar results

were obtained about participants who drove after drinking alcohol (54,8%)<sup>16</sup>.

Most university students in this study consumed alcohol in the 30 days prior to the research and many reported having tried it for the first time before entering university. Similar results were obtained in a survey that evaluated the prevalence of risk behaviors among college students, where it was found that 19.9% were smokers and 33.1% ingested alcoholic drinks<sup>17</sup>. Another study found that 89.4% of students were drinking alcohol and 23.6% of them use it every week<sup>18</sup>.

For many participants in this study the first-time using alcohol preceded college admission. This is an issue that deserves special attention because of the great amount

of festivities and celebrations that exist during this phase that may encourage the start or strengthen the use of alcohol<sup>19</sup>.

The use of illicit drugs was little reported in this study, and when used, marijuana was the cited the most. This result is in line with data from a research on Alcohol, Tobacco and other drugs among Brazilian university students who also identified marijuana as the most used illicit drug (20.3%)<sup>18</sup>.

The results related to the sexual behaviour of the participants corroborate with studies which showed that the onset of sexual activity was in adolescence<sup>20</sup>, as well as the use of condoms for this age group<sup>21-23</sup>. However, there have been reports of unprotected sexual intercourse and consumption of alcohol or drugs prior to the relations. In a study of vulnerability to STD and AIDS among college students, 68.8% of participants reported the use of alcoholic beverage before sexual intercourse and 4.0% reported the use of other drugs. The use of alcohol and/or drugs before sexual intercourse is a strong predictor of risk behaviour and can contribute to unprotected sexual intercourse and increase the risk of acquiring STD/AIDS<sup>20,22</sup>.

Inadequate eating habits were observed, with low fruit and vegetable consumption and high consumption of hamburgers, snacks, biscuits or sweets the day before the study. The low consumption of fruit and vegetables has also been observed in other studies, being this behavior more prevalent among university students in the north of Minas Gerais<sup>7</sup> and in the south of Bahia<sup>24</sup>.

According to the information on health care received at the university, it was found that the issues of violence prevention and suicide prevention were rarely reported. Moreover, the other themes presented percentages that can be considered low, since it is a sample of college students in the health area.

In this context, it corroborates the understanding that the actions of disease prevention and health promotion for college students should consider their knowledge and

experiences so that they become active subjects in the search for information, who, with autonomy, can seek alternative practices that help them overcome situations that cause vulnerabilities and change their habits in the direction of more healthy lifestyles<sup>25</sup>.

In relation to the QoL, most of the participants evaluated it positively, and the best scores were obtained in the physical domain. This domain evaluates the individual perceptions of pain and discomfort, energy and fatigue, sleep and rest, mobility, activities of everyday life, dependence on medication or treatments and work capacity. This may be related to the good health perception of students, as well as to the fact that most university students are young, healthy and manage to carry out everyday activities with little to no difficulty, pain, discomfort and/or prejudice in their capacity for academic activities<sup>2</sup>.

Problems were observed in the Environment domain, since it was the domain with the worst score in the perception of the participants. This fact was observed in another study with college students in the field of Health that identified low scores of QoL in this domain, in both new and senior students<sup>26</sup>. Similarly, a research with students from the first and sixth years of the medicine course found the Environment domain to be the one with the smallest scores in the evaluation<sup>27</sup>.

The Environment domain evaluates the perceptions of the physical safety and protection, home environment, financial resources, availability and quality of health and social care, opportunities to acquire new information and skills, participation and opportunities for recreation/leisure activities, physical environment and transportation. The lowest score of QoL in this domain may indicate difficulties related to university life, such as adaptation to a new city and house, separation from family members, responsibility for money and time management, among others<sup>28</sup>.

It was found that, although weak, the correlation between QoL domains and healthy habits showed that the healthier the habits students have, the better the QoL in the

physical and social relations domains. The correlation between QoL domains and habits considered inadequate suggested that as inadequate habits increase, QoL decreases in the psychological domain. It was also found that the variable description of general health correlated positively with the QoL domains, indicating that the better the perception of Health, the better the QoL of students.

This data corroborates a study conducted with foreign students of the health field that, despite using different data collection instruments, identified a significant relationship between the adoption health promoting lifestyles and quality of life, indicating that a healthy lifestyle acted as a predictor of the students' quality of life<sup>29</sup>.

In addition, the results of the multiple linear regression analysis showed that the predictor "income" has impacted the Environment domain, showing that having better financial conditions positively influenced the QoL in this domain and, also, that the predictor "description of general health" has impacted all domains of QoL, indicating that having a good perception of health has positively influenced the QoL.

The results obtained corroborate with another study in which the financial conditions of the students reflected directly on the quality of life, indicating the importance of the income to the perception of QoL, particularly regarding the satisfaction of needs<sup>30</sup>.

In addition, the perception of health has positively influenced the quality of life of university students, indicating a direct relationship between health and quality of life<sup>29</sup> and confirming the importance of monitoring indicators of health and QoL<sup>8</sup>, and the development of actions of health promotion to improve the health and quality of life of college students.

## CONCLUSION

The results of this study have highlighted the need for attention to the students health habits, particularly those related to their security, the consumption of licit and illicit drugs, sexual behavior and eating habits, on the part of all those involved in the university

context such as educational managers, teachers, professionals who work in the student assistance and, especially, of the students themselves.

The data obtained showed that the participants of this research presented better perceptions of QoL in the aspects related to the physical and social relations domains and that, in these fields, it presented direct relationships with health habits considered healthy. The health habits considered inadequate contributed to the decrease in QoL in the psychological domain. It was observed that the better the perception of health, the better the QoL. These results lead to a reflection on the direct relationship between health and quality of life, as well as on the importance of Health Promotion actions to improve the health and quality of life of university students.

The limitations of this study are the fact that it was developed in only one institution and to the impossibility of establishing causal relationships between the variables due to the sectional design. Thus, this study suggests future investigations, with multi-centric and longitudinal studies that allow for a follow-up of the students and make it possible to identify relationships between health habits and QoL of university students.

Despite its limitations, this research has made it possible to get to know better the reality of the students in question, their health habits and QoL, as well as to identify the factors that have an impact in QoL. In this context, it can contribute to the collective discussion of specific issues related to young adults and their vulnerability, and also to the development of actions aimed at preventing injury and promoting health, in order to achieve favorable responses related to the health and quality of life of university students.

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**CONTRIBUTIONS**

**Cíntia Tavares Carleto** was responsible for the design of the study, data collection, statistical analysis of the data, discussion of the results, writing and review. **Muriele Pereira Mendes Cornélio** participated in the discussion of results, bibliographic standardization, writing and review. **Giovanna Gaudenci Nardelli** participated in data collection, discussion of results, writing and review. **Eliana Maria Gaudenci** participated in data collection, writing and review. **Vanderlei José Haas** carried out the statistical analysis of the data and the review. **Leila Aparecida Kauchakje Pedrosa** guided and supervised all stages of the research and carried out the review.

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