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REVIEW ARTICLE

University student behaviors prone to health risks: a conceptual analysis

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Abstract *The objective was to analyze the concept of university student behaviors prone to health risks, delineating its attributes, antecedents, and consequences. This study involved a conceptual analysis using an integrative literature review with searches conducted in the MEDLINE/PubMed, Scopus, PsycInfo, LILACS, BDENF, and IBECS databases. A total of 135 full-text articles were analyzed. University student behaviors prone to health risks were defined as a tendency to voluntarily adopt harmful habits that negatively impact health and well-being, characterized by voluntary, unfavorable, negative, and/or destructive aspects. They are manifested by the influence of several factors: personal and individual development, relational, family, psychological, socioeconomic, environmental, educational, extracurricular, behavioral, and healthcare. These contribute to risk behaviors such as inadequate dietary habits, unstable physical activity, toxic substance use, risky sexual practices, excessive use of digital technologies, compromised learning processes, violence, compromised mental health, dangerous driving, inadequate sleep habits, deviant conduct, and impaired concern for health. The elucidation of the concept allowed identification of the elements that compose this phenomenon, and established an initial understanding of the construct.*
Key words *Health risk behaviors, Universities, Students*

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Introduction

Health risk behaviors, such as smoking, alcohol consumption, physical inactivity and unhealthy eating habits, have been associated with experiences at university, perhaps extending further into adulthood, leading to consequences like development of chronic, non-transmissible health conditions, important in the public health sphere, among which one may point out hypertension, diabetes, neoplasms and chronic respiratory diseases[1-5].

According to this perspective, the university is materialized as a space of social production in constant transformation, presenting potential for promotion of health, as well as a propensity for adoption of risk behaviors on the part of the actors that compose it: administrators, staff, teachers and students. Therefore, the construct finds space for disputes in understanding between biologicism and the broadened concept of health, anchored in the transversality of care in different contexts and in the valorization of well-being and quality of life, as factors that directly and/or indirectly produce effects on the learning process, and on the effectiveness of healthy, sustainable environments[6].

To this end, it should be noted that university experience, in principle, is marked as a period of transformations and ruptures, above all when there is association between the completion of high school, in which attributions, skills, institutional norms, and family and social bonds are modified for training follow-up[7]. It is also observed that, due to heterogeneity at university, it is possible for there to be groups that do not enter in an obligatory manner after completion of the previous educational phase, which favors the plurality of experiences recognizable in these spaces.

With regard to the relationship between the educational environment and behaviors prone to health risks, there are outstanding changes related to the requirements to adjust rules, enjoy good relations with peers and superiors, seek prominence in academic development, undergo excessive study workloads, face demands to achieve institutional goals, adapt to the new academic reality, different sleep routines, as well as the need for organization of time and study strategies, among others[8]. These demands may be presented as stressors, given they require a behavioral transition from the university student in a timely manner, often not achieved, generating self-demands, mental stress and physical symptoms[9,10].

The university environment, therefore, is manifested as an influencer of the adoption by university students of behaviors prone to health risk, taking into account reflections of experiences in administrating one's own life, and personal and future expectations. Among the justifications for this are the search for stress relief, dealing with life problems, self-acceptance, desire for a high-level personality, and pressure from peers (colleagues, family members and teachers, for example)[11].

In view of this, it is important to understand that human behaviors are mediated by motivational and contextual stimuli, so that motivation starts from a multifaceted construct related to autonomy and self-determination, which can be based on behavior as a product of pleasure and personal desires, and on the association among self-determined regulatory styles. In the panorama of university health behavior, one perceives a predominance of self-determined motivation, given the individual's predisposition to adaptation according to the situation, pressure or reward[12].

Risk-prone health behavior can also be characterized as: toxic substance abuse; failure to act to prevent health problems; failure to achieve a sensation of ideal control; minimization of changes in state of health; non-acceptance of change in the state of health; and smoking[13]. It is related to social anxiety; inadequate social support; low self-efficacy; inadequate understanding of health information; stressors; negative perception of recommended health care strategies; and a negative perception of health professionals[13].

Although university student behaviors prone to health risks are a construct of recognized interest in national and international studies, it is observed that there is a prevalence of studies with an approach to risk factors, overcoming the propensity to adopt risk behavior, the polysemy employed to treat its concept, and the need to elucidate the concept of risk-prone health behavior to effectively support institutional, public health and education policies, as well as actions to promote health.

From this perspective, realization of an analysis of its concept is justified, with a view to elucidating it, delineating its essential components, with the purpose of supporting decision-making, standardizing the language of construct adoption, as well as fostering attention and health care for university students.

Thus, it was aimed to analyze the concept of university student behaviors prone to health

risks, delimiting their antecedents, attribute and consequences.

Methods

The study is of the analysis of concept type, developed according to the Walker and Avant methodological precepts, whose purpose is to evaluate, distinguish and elucidate the representative elements that offer support for a concept[14].

For this purpose, eight pre-established stages were undergone[14], namely: 1) selection of the concept of university student behaviors prone to health risks; 2) delimitation of the objective of refining the concept and elucidating its constituents; 3) identification of the utilization of the concept through an integrative literature review; 4) determination of the attributes employed in the literature as illustrators of the concept; 5) elaboration of the model case to describe the utilization of the concept; 6) construction of additional cases as a possibility of exemplification of the conceptual limit; 7) identification of antecedents and consequences of the concept through an integrative review of the literature; and 8) definition of the empirical references of the concept studied.

The same concept can be expressed by a multitude of word combinations. The analysis of this concept is fundamental to identify the meanings underlying these different expressions[14]. To identify the possible uses of the concept, as well as the antecedents, attributes and consequences, it was opted to make an integrative review of the literature. It is noteworthy that the attributes consist of terms repeatedly recorded in the literature, which illustrate the essence of the concept, characterizing what composes it and what does not. At the time, the antecedents and consequences were implied in the temporality of the concept of the phenomenon, understood as the events necessary, a priori, for its occurrence, and for the subsequent results manifested, respectively[14].

The operationalization of the integrative literature review[15] arose from the creation of a research question according to the PICo mnemonic strategy, P being population: university students; I - intervention: does not apply; Co - context: behaviors prone to health risks. Thus, the following guiding question was determined: "What is the definition of the concept, university student behaviors prone to health risks, their attributes, antecedents and consequences?".

The search in the literature took place between September and November 2023, via access to the Comunidade Acadêmica Federada (CAFe) [Federated Academic Community] of the Portal de Periódicos da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) [Portal of the Periodicals of the Higher Education Coordination for Personnel Improvement], in the databases of the National Library of Medicine and Institutes of Health (MEDLINE/PubMed), Scopus and PsycInfo. For the databases, Latin American and Caribbean Health Sciences Literature (LILACS) databases, Nursing Databases (BDENF) and Spanish Bibliographic Index in Health Sciences (IBECS), the search was performed via Biblioteca Virtual de Saúde (BVS) [Virtual Health Library].

The search strategy was organized through connection of representative descriptors of the phenomenon identified in the descriptors in Health Sciences (DECS) and Medical Subject Headings (MESH), articulated according to boolean operators AND and OR. The final equation formulated was ("Health Risk Behaviors" OR "Comportamento de risco à saúde") AND ("Students" OR "Estudantes" OR "Universities" OR "University Students"), adjusted to each search source, conforming to the particularity of these.

Productions available in full were included virtually with approximation to the definition and/or characteristics of university student behaviors prone to health risks. The following publications were excluded: those without any connection with the theme of interest, studies unavailable virtually, repeated/duplicate, and those of the commentary type, literature reviews, editorials, dissertations and theses. In order to contemplate greater scope regarding the phenomenon, no temporal and idiomatic limit was established.

The search results were saved in *.csv format and transferred to Rayyan (https://www.rayyan.ai/) for paired blind screening between two totally independent researchers. At the time, the researchers assessed their studies by classifying them according to inclusion, doubt (perhaps) or exclusion. The cases in conflict were solved by consensus, that is, involving consultation of a third researcher.

The identification, screening and inclusion steps were summarized according to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA)[16] (Figure 1).

The organization of information was based on the reading of the selected articles, recognition of the use of the concept of health behavior likely to expose university students to risk, recognition of the essential characteristics of

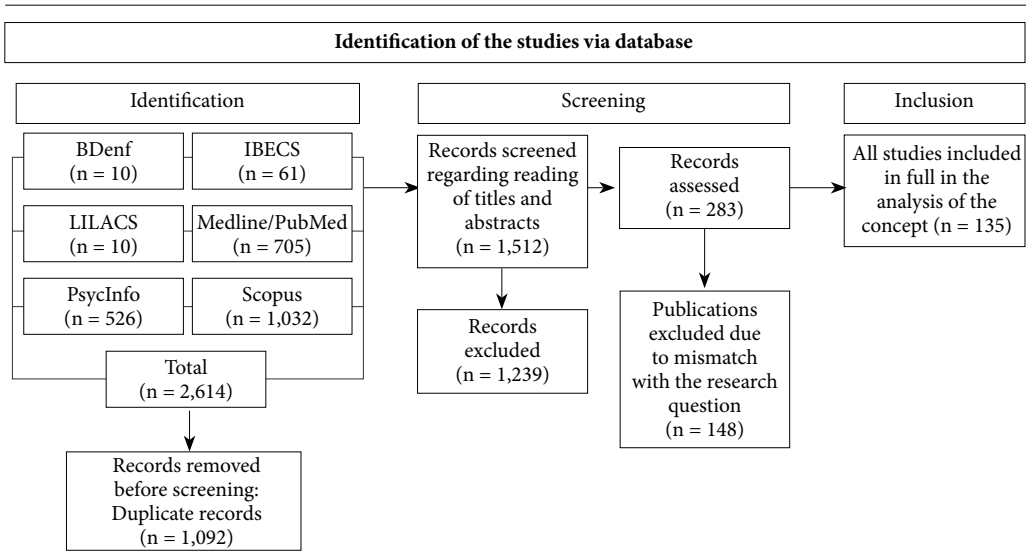

Figure 1. Flowchart of the identification process of studies via databases to analyze the concept of behaviors prone to health risks. Iguatu, Ceará, Brazil, 2024.

Source: Authors.

the concept, and classification of these as attributes, antecedents and consequences. The classification of the essential characteristics of the concept was carried out by three independent researchers, as conducted by the prior, integrative review of the literature.

Data were organized in a Microsoft Office Excel 2016 electronic spreadsheet, covering the year of publication, country of origin, population, study type, evidence level, concept attributes, antecedents and consequences. The evidence level considered the classification of the study type as level I – evidence of systematic reviews and/or meta-analyses of randomized clinical trials; level II – evidence of a clinical trial with randomization, controlled and well delineated; level III – evidence of studies well-delineated, controlled and without randomization; level IV – evidence of cohort or control case studies; level V – evidence of systematic reviews of descriptive and qualitative studies; level VI – evidence of descriptive and/or qualitative studies; and level VII – evidence of opinions of authorities or reports of specialist committees[17].

The data were analyzed from descriptive statistics regarding the absolute and relative frequency, and summarized in an infographic, considering the characteristics of the studies, and tables, contemplating the attributes, antecedents and consequences. In the end, a conceptual model was created that visually represented the relationships among the essential elements of the health behavior concept of interest.

Then, a model case, a borderline case and an opposite case, which aimed at enabling comparisons and contrasts of the concept analyzed, were constructed, elucidating what the concept was, what it was not, and the application of its constitutive elements. Respectively, a model case demonstrated a situation of application of the concept, with its background, attributes and consequences; a borderline case presented a situation in which there were characteristic and confusing elements of the concept, that is, not belonging; and, finally, the contrary illustrated a context that did not correspond to the concept in question, in fact, opposing it.

Regarding the formulation of empirical references, the concept attributes were considered, establishing, based on the literature, the operational definitions that detailed their manifestation.

As it was a study based on published scientific articles, the ethical and legal rights of authorship through authorial reference were ensured, thus precluding the need for appreciation by a research ethics committee.

Results

Health risk behavior has been increasingly covered in the scientific literature over the last 40 years, featuring mainly cross-sectional observational studies (94.81%) with level VI evidence (95.5%) and contemplating university students in general (81.48%), without limitation to a particular area of knowledge or undergraduate course. Regarding locality, most research on the subject (31.85%) has been concentrated in the USA, while 12 studies (8.8%) have been identified in Brazil.

The characterization of the studies is illustrated in Figure 2, presenting the period, evidence level, study type, place of publication, and population of participating university students

The selection of the concept, behaviors prone to health risk was determined by the peculiarities proper to the academic period of undergraduates and the university context, their increasing exposure to situations, scenarios and possibilities of adopting behaviors that, when recurrent and intense, contributed to the manifestation of risk to health, well-being and quality of life.

The refinement of this concept is supported by its polysemy and broad approach focused on risk behaviors, without contemplating the propensity to adopt these behaviors, understood as the set of influences preceding them that tend to lead to adoption of such behaviors.

Investigation of behaviors prone to health risks aims to recognize the components that precede their manifestation, representing the propensity to risk (antecedents); delimit the constitutive elements that characterize it (attributes); identify the primary risk behaviors

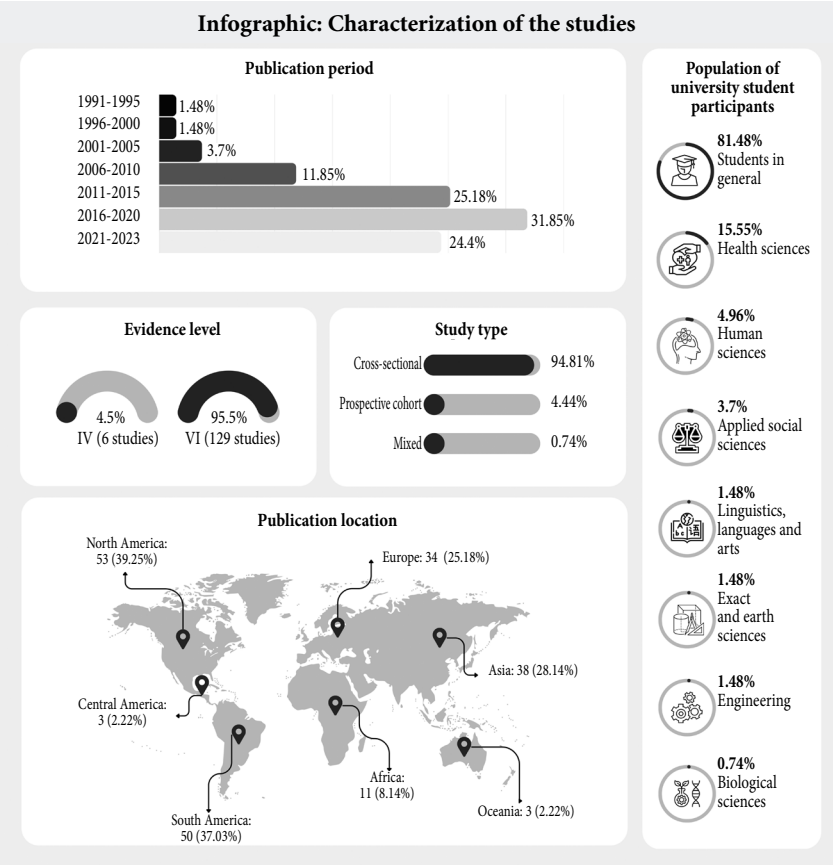

Figure 2. Infographic characterization of the studies included in the analysis of the concept of university student behaviors prone to health risks. Iguatu, Ceará, Brazil, 2024 (n = 135).

Source: Authors.

to which university students are exposed (consequences); and provide applications that aid different health areas, such as care, administration, teaching and research.

Table 1 summarizes the antecedents, attributes and consequences of the concept, and the absolute and relative frequency of presence in the studies analyzed. The data can be consulted in full in the attached material, contemplating the articles analyzed and the previous characteristics, attributes and consequences extracted from them.

Table 1. Background, attributes and consequences of university student behaviors prone to health risks. Iguatu, Ceará, Brazil, 2024.

Concept component	n(%)
Antecedents	
Personal Development	
Curiosity regarding experimentation; identity development; motivation; difficulty in self-regulation; low self-comprehension levels; greater freedom; greater autonomy; greater independence; damage to the development of cognitive behavioral and emotional skills; and adaptation to the university context.	38 (28.14)
Individual	
Lack of skills to prepare food; low self-efficacy for physical activity; impulsiveness; lack of perspective of the future; tiredness/fatigue/exhaustion; organizational difficulties; negative perceptions of the school/university; tension; self-efficiency; low self-discipline; and negative influence of media and internet.	18 (13.33)
Relational	
Peer influence; peer norms and values; inadequate social support; need to socialize; ethnic identity; and need for peer approval.	44 (32.59)
Family	
Low family support; life distant from parents; decreased parental control; parental psychological control; lack of parental support on school issues; and parents' expectation.	31 (22.96)
Psychological	
Psychological distress; anxiety; depression; isolation; loneliness; hopelessness; low self-compassion; low life satisfaction; feeling of insecurity; feeling of helplessness; low self-esteem; sadness; introversion; need for self-affirmation; insufficient self-confidence; boredom; low sense of control; traumatic situations; and stress.	47 (34.81)
Socioeconomic	
Low socioeconomic levels; government regulations; decrease in perceived social capital; and religion.	34 (25.18)
Environmental	
Normalization of these behaviors in the academic environment; competitive academic environment; low access to physical exercise practices; low availability of healthy foods (fruits and vegetables); convenient access to unhealthy foods; and staying for a long time.	23 (17.03)
Formative	
Time management; increased academic requirements; increased academic demands; concern for maintaining good academic performance; desire for approval in selection processes; constant pressure to become good professionals; low academic performance; reduction in attendance; evasion; and absenteeism.	42 (31.11)
Extracurricular	
Work responsibilities; participation in other social activities; and greater participation in extracurricular activities.	7 (5.18)
Behavioral	
Drug taking; alcohol consumption; inadequate eating habits; prolonged time watching screens; damage to heritage; violence and injury; tobacco consumption; and inadequate sleep patterns	17 (12.59)
Healthcare	
Erroneous orientation; lack of ability to make healthy decisions; failure to act to prevent health problems; low offer of preventive strategies; inadequate understanding of health information; and coping strategies.	10 (7.40)

it continues

Table 1. Background, attributes and consequences of university student behaviors prone to health risks. Iguatu, Ceará, Brazil, 2024.

Concept component	n(%)
Attributes	
Negative, harmful and destructive attitudes	5 (3.75)
Recurrence or intensity	6 (4.44)
Voluntary	1 (0.74)
Controllable	1 (0.74)
Direct or indirect effect	5 (3.70)
Damage or impairment of health	12 (8.88)
Risk to oneself and others	1 (0.74)
Increased risk of damage: physical (injuries and/or diseases), emotional, economic or social	9 (6.66)
Influence of low knowledge level and unfavorable attitudes	1 (0.74)
Excessive concern about health	1 (0.74)
Obstacle to achieve learning potential and progress in general	1 (0.74)
Damage that can cause death	2 (1.48)
Consequences	
Inadequate eating habits	
Unbalanced diet; obesity; food restriction; skipped meals; does not drink milk; high fast food consumption; consumes soft drinks and/or processed juices; consumption of saturated fat, refined carbohydrates, salt; and inappropriate consumption of fruits.	70 (51.85)
Unstable physical activity	
Inadequate physical activity; and sedentary lifestyle.	68 (50.37)
Toxic substance consumption	
Alcohol consumption; tobacco consumption; illicit drug takings; abuse of medications freely available or restricted by prescription; taking stimulating substances (amphetamines, caffeine and energy products); tranquilizers; intoxication and overdose.	118 (83.70)
Excessive use of digital technologies	
Prolonged time spent watching screens; and intensive use of internet and social media.	9 (6.66)
Risky sexual practices	
Unsafe sexual activity; sex with drug taking; multiple partners; ineffective contraception; unprotected sex and risk of sexually transmitted diseases.	54 (40)
Compromised learning	
Low involvement; low academic performance; memory impairment; persistent cognitive deficits; decreased concentration; reduction of academic well-being; academic problems; and reduction of attentiveness.	15 (11.11)
Violence	
Sexual aggression; material damage to own property and/or of others; general aggressiveness; and committing injuries.	26 (19.25)
Compromised mental health	
Suicide; suicide attempt; suicidal thought; depression; food binging; anxiety; low mental well-being/psychological suffering; mental exhaustion; emotional exhaustion; loneliness; suicidal ideation; mental disorders/mental suffering; non-suicidal self-inflicted injury; lack of future expectation; low degree of happiness; low satisfaction with life; low body satisfaction; and irritability.	34 (25.18)
Dangerous driving conduct	
Driving under the influence of alcohol and/or drugs; and traffic accidents.	23 (17.03)
Inadequate sleeping habits	
Voluntary sleep deprivation, altered sleep pattern, agitated sleep, waking up at night, disturbing dreams, insufficient/short sleep, insomnia, poor quality sleep.	28 (20.74)
Impaired care of health	
Little appreciation of leisure; low self-care; weight control; rare seeking of support services; harmed oral health; non-acceptance of change in health status; insufficient sun protection; and a compromised health state.	20 (14.81)
Deviant conduct	
Involvement with gambling; carrying weapons; and cheating in tests/exams.	9 (6.66)

Source: Authors.

Thus, the concept is constituted of antecedents gathered from 11 domains, of which the psychological (47; 34.81%), relational (44; 32.59%) and formative (42; 31.1%) are the most frequent. The recurrence or intensity of the manifestation of these antecedents, whether voluntary, negative, unfavorable and/or destructive, leads to direct or indirect harm to the health, well-being and quality of life of university students, along with potential for lethality.

Among the attributes, the aspects of harm or health impairment (12; 8.88%), increased risk of injury and/or disease (7; 5.18%), and recurrence or intensity (6; 4.44%) are more prevalent in the studies analyzed. In turn, the consequences of consumption of toxic substances (118; 83.70%), inadequate eating habits (70; 51.85%), and unstable physical activity (68; 50.37%) were the most frequent, characterized as the most common risk behaviors in the population of interest.

In this sense, the antecedents were delimited as the elements that predispose university students to the adoption of risk behaviors, while attributes gather together the characteristics that delimit these behaviors. Finally, the consequences can be understood as the risk behaviors themselves, adopted and manifested by university students via influence of the antecedents.

As it is a construct, the behaviors can be analyzed from the perspective of a continuum, arising from stimulation of the propensity to take risks present in motivational, contextual and structural (background) factors, leading to contemplation of behaviors that predispose the health of university students to risks (attributes), and reaching risk-level behavior(s) (consequences).

These components and their articulations are illustrated in the conceptual model (Figure 3) of such risk behaviors, presenting the definition of this concept developed from the studies analyzed.

Better understanding of the concept is associated with the creation of fictitious cases related to everyday situations, capable of being manifested by the phenomenon of interest. Thus, the borderline and opposite case models were prepared, following a methodology that aims to explore the limits and possibilities of the concept under study.

The analysis of the model case shows us that the concepts are not static. Rather, they are multidetermined social factors, and may present variations in different contexts.

Model case: university student behaviors prone to health risks

L.L.P., 21, female, attending the second semester of Mechanical Engineering in a Federal Institute. As an undergraduate, far from parental control and curious to have new experiences, she made friends with other females in her study group. However, although she participated at all times with her colleagues, she felt inferior in relation to both the beauty standards and the academic level, which led her to recurring episodes of sadness, introversion and dissatisfaction with life. Whenever possible she took illicit drugs to escape reality, skipped meals to control her weight, and spent long hours on the computer studying to match her colleagues' academic prowess. To keep as slim as she desired, she sought information on social networks without sharing it with friends, family and/or health professionals, adopting restrictive diets that made her weak and tired. This tiredness extended her periods of sleep, causing an increase in the number of classes missed, and thus a reduction in her academic performance, even with her home studies. At the end of the semester she failed most of the exams, which directly influenced her dissatisfaction with life, levels of happiness and mental well-being.

The model case explains the possibility of a situation experienced by university students, contemplating the attributes of the concept of university student behaviors prone to health risks, as well as the manifestation of antecedents and consequences of the construct.

In the situation, there is a tendency to adopt intense, recurring habits, harming health and well-being, which are adopted voluntarily, but exert negative, unfavorable and/or destructive impacts on learning, as well as cause physical, emotional, economic and social damage (attributes).

The propensity for adoption of this risk behavior comes from family and social influences, and personal and individual, relational, formative, psychological, behavioral development, and level of concern to maintain one's good health (antecedents). Such influences are in line with manifestation of behaviors considered risky for university students, such as inadequate dietary habits, toxic substance consumption, compromised mental health, inadequate sleeping habits, abuse of technologies, lack of care when health is impaired, and deteriorated learning, presented by the person in the aforementioned fictitious model case.

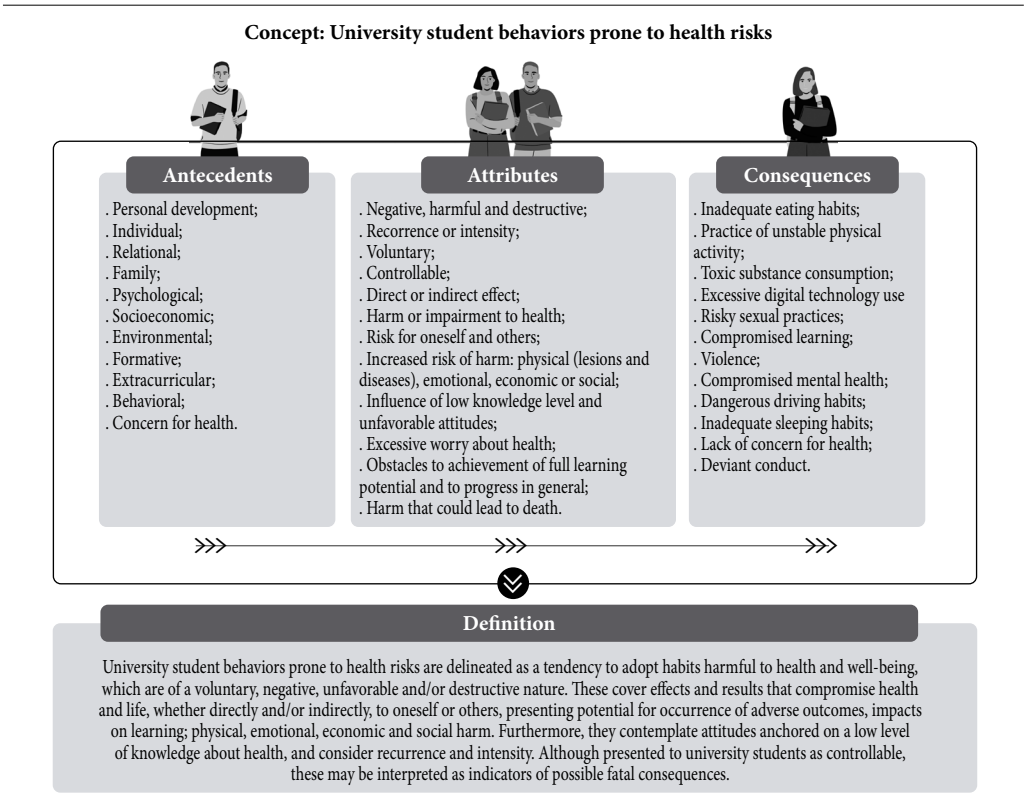

Figure 3. Conceptual Model of university student behaviors prone to health risks. Iguatu, Ceará, Brazil, 2024.

Source: Authors.

Borderline university student behaviors prone to health risks

M.F.L.P., 19, male, was a student in the 7th period of the degree course in Medicine, and would start activities as an intern at the University Hospital of the Metropolitan Region where he studied. To do so, he would have to leave his parents' home and live in a student residence. At the time, in the face of intense hopelessness that he would be able to complete the course, given his family's socioeconomic difficulties, lack of parental support for his studies, and difficulty believing in his own potential, he began to take stimulating substances to reduce his hours of sleep so as to have enough time to maintain good performance in his curricular and extracurricular activities. Lack of access to proper food and difficulty preparing meals led to increased fast-food consumption. At weekends, recognizing the need to socialize, and, due to insistent invitations from fellow residents, he used to go to nightclubs, where he would drink, vape, and, afterwards, hitch lifts back with drivers under the influence of alcohol.

The borderline case, as well as that of the model, addresses a situation of application of the concept, without, however, contemplating all its attributes. In the situation reported, there was recognition of antecedents of hopelessness, living away from parents, lack of self-confidence, low family support, low socioeconomic level, concern for maintaining good academic performance, low availability of healthy food, lack of skills to prepare meals, along with influence of peers and a need to socialize. It also described negative, harmful and destructive attitudes, as well as recurrence or intensity of the actions, the voluntary character, subject to control and risk for himself and others, which were characterized as some of the attributes of the concept, along with inadequate dietary habits, toxic substance consumption, dangerous driving and inadequate sleeping habits as consequences.

Opposite case – university student behaviors prone to health risks

M.S.D.L., 20, male, was a Law degree student and liked having a very organized routine to achieve weekly goals. He enjoyed parental support for his studies, practiced physical activity regularly, had a healthy diet, cooked on Saturdays to have ready meals all week, and tried to sleep at least eight hours per night. He was organized to have extracurricular activities in the afternoon, and study in the evening. He dedicated at least one moment of the day to leisure, and, whenever had a doubt related to health, he sought the campus health care team or the professionals at the Basic Health Unit in the district.

This case portrayed a non-concept situation, where the essential characteristics presented differed totally from those expected in the concept, their attributes, antecedents and consequences. In this sense, the fictitious university student presented conduct contrary to university student behaviors prone to health risks, which are more consistent with healthy behaviors and general health promotion.

The definitions of empirical references, the last stage of the conceptual analysis, enabled the best description of the attributes, aiding understanding of how they are manifested operationally (Chart 1).

Discussion

Although widely addressed in the literature, the phenomena related to the behavior and health of university students have semantic ambiguities, especially with regard to risk behavior and risk propensity. To this end, conceptual analysis is presented as a strategy to elucidate meanings of concepts employed in a polysemic manner in contexts, time and similar situations, adapting their utilization and optimizing the work processes[18].

Risk behavior, mostly emphasized in scientific publications, represents the subsequent period interrelated to risk-prone health behavior, given a continuum of health decisions that end with falling ill and even death. They are underlined as attitudes and long-term behavioral patterns that interfere and impair the health of university students[19], these being represented as consequences of this study.

In a distinct manner, the risk propensity is delineated as the phase that precedes risk behavior, whose peculiarities direct and tend to make the university student adopt habits that inflict health and quality of life, and bear potential for illness. In this sense, this concept is based on predisposition to risky practices, albeit voluntary and controllable, with negative and damaging health effects.

Elucidating the constituents of university student behaviors prone to health risks is unveiled as important given it is intrinsically related to the adoption of risk behaviors, analyzed from a fragmented perspective, relating the factor to a particular situation, normally that of disease. In Brazil, for example, researches on the theme are intended to assess risk behavior for transmissible chronic diseases, risk behavior with body dissatisfaction and food disorder, or sexually transmitted infections, among others, without, however, contemplating the university students propensity to adopt these behaviors[20-23].

Valuing the studies that seek to know, identify or relate risk behaviors in certain situations or diseases in university students, reflects the need to transcend delineations that reduce illness among university students to contextual experiences and the adoption of risk behaviors. What is expected is an enlarged view of the health-disease-care process, the interrelationships that influences this process, and the understanding that experiencing university does not limit or exclude influences from other life dimensions, such as family, socioeconomic, relational, environmental aspects, and personal development.

Thus, the view of a conceptual model that defines university student behaviors prone to health risks, and states its constituents provides potential to aid understanding of university experience as moments marked by diverse changes in everyday life that directly or indirectly influence well-being, the quality of life and health of individuals, such as academic activity overload, scarcity of free time, high levels of tiredness and stress[23]

Conceptual analysis enables evolution of knowledge, qualification of the work process related to the expansion of the spectral view of the object, and the possibility of assisting other studies[24].

In the case of the antecedents of the concept studied, these can be understood as the behaviors and attitudes that predispose the adoption of risk behaviors. In this sense, the psychological dimension that comprises, among others, situations of psychological suffering, sadness, low self-esteem, anxiety and depression, is consolidated in the literature as the major predisposing factor in risk behavior. This note may

Chart 1. Empirical definitions of the attributes of university student behaviors prone to health risks. Iguatu, Ceará, Brazil, 2024.

Attributes	Empirical definitions
Negative, harmful and destructive attitudes	Adoption of habits considered harmful to health, with adverse impacts on individuals, their relationships, society and the environment.
Recurrence or intensity	Adoption of habits considered harmful to health, with adverse impacts on individuals, their relationships, society and the environment.
Voluntary	Of one's own volition.
Controllable	Ability to direct, modify or regulate behavior according to one's needs or intentions.
Direct or indirect effects	Causal process where an effect can happen immediately or through a series of intermediate effects.
Harmful or prone to compromise health	Situation, condition, event, illness, injury or circumstance that may cause health damage.
Risk for oneself or others	Acts that may negatively reflect on the health, well-being and quality of life of university students or other individuals who interact.
Increased risk of damage: physical (lesions and/or disease), emotional, economic or social	Greater probability of manifesting illness and/or injuries, as well as damage to the emotional, economic and social dimensions of life.
Influence of scant knowledge, and unfavorable attitudes	Behaviors arising from absence of appropriate and timely information, as well as unfavorable decisions regarding health.
Excessive concern for health	Situation of excessive concern for health with negative reflections on this.
Obstacles to achieving potential learning level and to progress in general	Reduction of cognitive, psychomotor and/or affective abilities related to academic and extracurricular activities.
Harm that could be fatal	Situation directly or indirectly lethal.

Source: Authors.

be related to the centrality of the mindset and emotions in human processes, influencing and being influenced directly by the other dimensions identified[25].

Such a perspective can be explored by reflection of the relational dimension on the psychological dimension, in which relational conflicts, prominent competition and the need for inclusion increase the occurrence of mental disorders such as academic stress, anxiety and depressive states[26].

In the relational context, the development of partnerships in an environment of new experiences, experimentation, freedom and autonomy assumes a facilitating role of adaptation and socialization, while causing predisposition to health risk behaviors, especially those socially normalized. This connotation finds support in the representation of peers as models of influence, providing opportunities and pressure for adoption of behaviors, principally those related to toxic substance abuse, grouping of prevalent consequences recognized in the literature[2].

In the academic area, higher education brings with it a scope of attributions and responsibilities that demand university students to manage time, commitment and effort in the learning process. Thus, activity overload submits university students to various worries, especially those related to academic performance[26], and these may trigger subordination of healthy eating habits[1] and increased illicit drug consumption[27] as a form of approximation to the situation.

Although addressed less frequently in the studies analyzed, the importance of contemplating the other dimensions preceding the phenomenon in the health practices, in the formulation of public policies and in studies seeking a better understanding of behaviors prone to health risks is highlighted, as they also contribute to their manifestation.

Regarding the attributes that define the university student behaviors prone to health risk, it is necessary to recognize that this is characterized by the adoption of negative, harmful and

destructive attitudes. However, it is necessary for there to be increased continuity or intensity, be of a voluntary character, subject to control, represent risk to themselves and others, and prevent them from achieving potential levels of learning and general progress[2,28,29].

Advancing in the face of the identification of the most prevalent characteristics that involve the concept of this study in the university population, such as health impairment, increased risk of injury and/or diseases, and their recurrence or intensity, it is necessary to consider vulnerability and the health risks of university students in a significant manner[30].

In this line of argument, student health is therefore a current issue that needs to be understood from the interaction among the demands inherent to higher education and the social, economic and personal aspects, it being necessary to consider the attributes that explain behaviors prone to health risks.

Thus, acting with a view to promoting university students' health is presented as a possibility to reduce adoption of these behaviors, prevent risks, and provide individual and collective empowerment to take better decisions and advocate for good health[31].

It is urgent to strengthen the university context as a health promoter, considering the current perspectives of the academic reality. In its conceptual matrix, health promotion consists of a field of theories and practices that materializes as the foundation of the new health paradigm, seeking to overcome that care based essentially on the biomedical, hospital model. Thus, it proposes development of actions that consider and contribute to social participation, as well as articulation between research and the reality of the health services and communities[31,32].

The university environment weaves influences on the well-being and health of the individuals, with a possibility of assuming health promoting behavior and/or diminishing risk propensity. Behaviors adopted in the university period may be perpetuated and contribute to development of chronic illness conditions. Thus, adopting the university as a space for health intervention and aiming to make it a health promoter space is imperative[2].

The consequences of the elaborated conceptual model represent the risk behaviors to which university students are exposed, and may be prone to adoption, covering inadequate eating habits, unstable physical activity, toxic substance consumption, excessive use of digital technologies, risky sexual practices, compromised learning, violence, compromised mental health, dangerous driving, inadequate sleeping habits, lack of concern for health issues, and deviant conduct.

The set of risk behaviors pointed out adversely affects the health and well-being of university students to a greater or lesser degree, with reflections on the learning process, which raise or lower the indicators of educational retention, attendance and absenteeism/ evasion[33,34].

It is key to underline that behaviors prone to health risks are mostly distributed in interrelational flows, such that each predictor presents potential to trigger several behaviors simultaneously, as well as arise from these[35]. For example, one may point out: stress resulting from lack of time to perform necessary tasks may drive anxiety behavior, increase fast-food consumption, expose the individual to toxic substance abuse, modify sleep patterns, among other behaviors predisposed to manifestation of stress.

A study involving 974 university nursing students provided evidence that these behaviors directly contributed to the high prevalence of risk factors for non-transmissible chronic diseases, highlighting the need for educational programs in order to reduce these factors. Such findings make these actions urgent, since lifestyle is one of the most important determinants of student health[36].

Given this complexity, it has stimulated discussion about the need to adapt to health promotion, considering its connections with academic success and the optimization of the transition to the world of work. In this sense, a health-promoting university has the potential to contribute to reduction of the adoption of university student behaviors prone to health risks. It is a movement of construction of a learning space and organizational culture directed to health, capable of reducing the barriers to healthy behavior utilizing the public and/or environment as a scenario for dissemination of health information[37].

Considering the polysemy involved in the adoption of the concept, university student behaviors prone to health risks, as well as the importance of investing in health promotion in universities as a movement with international repercussions, the elucidation of this concept in this study demonstrates possibilities of contributing to: a) professional performance, especially of university health teams, such as those found in the federal network of institutes of education, science and technology, and in primary health care; b) provision of assistance for effective de-

cision-making by education, health and social assistance administrators, directing care to the constituents of the phenomenon; c) support for formulation of institutional and public policies that match the recognized, evidence-based realities; and d) pointing out possibilities for researchers to investigate better, such as interrelationships among the antecedents, attributes and consequences, recognition of grouping in clusters, structuring of causal chains and identification of confusing and mediating variables; among others.

The adoption of the controlled search term, health risk behavior, may be presented as a limitation of this study, given the desire to study a phenomenon related to this, that of propensity to risk, but without possessing any representation as a controlled search term. However, this decision is justified in view of the desire to expand the possibilities of search and the reduced number of studies that properly adopt the term, behaviors prone to health risks. Another limitation that can be pointed out consists of recognition that the majority of the studies are cross-sectional, which makes it impossible to identify causal flows among the constituents of the concept.

Conclusion

Conceptual analysis has allowed recognition of university student behaviors prone to health risks, such as the predisposition to adoption of behaviors harmful to well-being and health that feature a voluntary, negative, unfavorable and/or destructive character.

In this scenario, it was evidenced as a complex phenomenon that contemplates[11] antecedents related to personal, individual, relational, family, psychological, socioeconomic, environmental, formative, extracurricular, behavioral and health care attitudes. In addition, there are 12 attributes corresponding to characteristics that indicate a university student has behavior identified as prone to health risks, and thus 12 consequences derived from the occurrence of the concept.

Therefore, the analysis of this concept converges to an initial appropriation of the construct with a view to providing directions and utilization in concrete actions, such as care, administration and research, enabling professional nuclei to identify dimensions for individual and/or interprofessional intervention.

In conclusion, considering the contextual character of the phenomenon, the need to update the concept in the future is underlined in view of the specificities and constant modification of the academic profile, university, teaching and factors that predict it.

Collaborations

PLF Mota, LDS Machado, and NS Brito participated in the conception, planning, revision, and writing of the study. GMF Paiva, PL Leite, AM Bezerra, and MS Farias contributed to the revision and writing of the study.

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Data availability statement

The data sources adopted in the research are indicated in the article's body. Supplementary material is available at: https://doi.org/10.48331/SCIELODATA.S3ER2R.

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