

**ANXIETY, DEPRESSION, STRESS, EMOTIONALITY AND AGGRESSIVITY - FACTORS THAT MAY INFLUENCE IRRATIONAL ALCOHOL CONSUMPTION AND RISKY SEXUAL BEHAVIOR**

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**Abstract**

**Objectives.** This literature review aimed to reveal the relationship between psychological factors such as anxiety, depression, stress, emotionality and aggression on the one hand, and irrational alcohol consumption and risky sexual activity on the other hand, in students (19-25 years) and adjacent age groups.

**Material and methods.** The study was conducted by analyzing the literature published between 2010 and 2020. The search was conducted in Romanian and English, in 9 international publications, by the following key phrases and terms, separately or in combination: anxiety, depression, stress, emotionality, aggressiveness, alcohol consumption, drinking motives, binge drinking, sexual behavior, risky sex.

**Results.** Applying repeated exclusion criteria, 31 articles remained in the analysis. Among these, risk behaviors were rarely analyzed in connection with psychological factors. Most studies that investigate risky behaviors regarding alcohol consumption and sexual activity, address them according to gender, educational level, age groups. Women were more prone to anxiety and depression, but also to show more psychological aggression compared to men who showed more physical aggression, even in sexual activity. Researches included aggression as a behavioral trait, and emotionality has been used as a variable in studies to validate standardized tools. Irrational alcohol consumption has been significantly associated with risky sexual activity and various forms of aggression.

**Conclusions.** The risk of manifesting and developing depressive and anxiety symptoms is higher in victims of aggression, in people with risky sexual activity, and in consumers of irrational alcohol. In students and young people, stress has high values, contributing to the tendency towards risky behaviors. It is necessary to promote successful coping strategies and mechanisms, both in individual and group level, as well as the development of prevention strategies and therapeutic procedures to improve the listed risk behaviors.

**Keywords:** anxiety, depression, aggression, alcohol consumption, sexual activity.

## Introduction

The mental balance of people is a condition of normal life as important as physical or somatic health.

The number of people suffering from anxiety, depression, and stress is constantly increasing worldwide, and young people, teenagers or even children do not seem to have a higher protection factor than adults or the elderly. Research shows that students are a social category highly exposed to high levels of stress, anxiety, and depression (Bryan, Baker, & Tou, 2017; Tutino, Shaughnessy, & Ouimet, 2018; McDougall, Langille, Steenbeek, Asbridge, & Andreou, 2019), and this can lead to aggressive behaviors towards the intimate partner (Davis et al. 2012; Agardh, Tumwine, Asamoah, & Cantor-Graae, 2012b) or in other situations.

Regarding of risky sexual behavior, there is less research and their strategies differ a lot. The prevalence and transmission of HIV/AIDS and syphilis are still to the attention of the authorities and have been monitored at the level of limited research (Monu et al., 2020), but also of institutions with long-term decision-making and action, such an example being the European Center for Disease Prevention and Control (2019). The results showed that there are parts of the population that are very poorly informed about risky sexual behavior.

The association between risky behaviors and psychological factors occurs most often in scientific studies with medical themes, associated with diseases (Guruprasad, Ramakrishnan, & Shah, 2015), dysfunctions such as infertility (Yang et al., 2017; Lalinec-Michaud & Engelsmann, 1984), unhealthy diet (Ahmed, Al-Radhwan, Al-Azmi, & Al-Beajan, 2014), or special social contexts (Foli, South, Lim, & Hebdon, 2012; Hebdon, Foli, South, & Lim, 2012).

Alcohol is one of the most consumed and dangerous psychoactive substances. In the United States, Stahre, Roeber, Kanny, Brewer and Zhang said in 2010 that one in ten deaths at the age of 20-64 was due to excessive alcohol use. In 2019, new information emerged, showing that although for teenagers and some young people it was forbidden to buy alcohol, 24% of 8<sup>th</sup> graders had already tried alcohol, as well as 77% of students and 85% of young people (19-28 years) (Schulenberg et al., 2019).

The 2019 World Health Organization report stated that Romania does not have a written national policy on alcohol consumption (World Health Organization, 2019) and no monitoring system on this behavior, although it is ranked 7<sup>th</sup> among European countries and ranked 9<sup>th</sup> in the world with 12.6 l annual per capita alcohol consumption (World Health Organization, 2018). Worldwide, the same source reports that there are three million deaths due to alcohol consumption each year, and 40% of alcohol consumers experienced at least one heavy drinking event per month.

Rada and Ispas (2016), following a study conducted on 1539 young people in Romania, aged between 18 and 30, in 2013 and 2014, argued that heavy episodic/occasional drinking - binge drinking - is a phenomenon that has attracted the attention of researchers in recent years on both adolescence and early youth. The same idea was taken over by Aluja, Lucas, Blanch, and Blanco (2019) in a study conducted on 668 young people in the same age range.

Starting from all this and partially knowing the effects that psychological imbalances can produce personally or in community, the present study aims to broaden the field of knowledge by connecting the results of several scientific studies and to identify areas that require further study.

## Material and methods

Depression and anxiety are among the most common imbalances in the mental system and often prove to be the cause of risky behaviors for people both individually and in the community. Either stress reaches at post-traumatic or acute clinical levels, or is manifested in the form of transient symptoms, it accompanies the life and activity of most people affecting their quality. The present analysis is the scientific base for the study of psychological factors involved in risky behaviors among

students in Romania. It reveals the state of information accessed in 2020 on the psychological factors such as anxiety, depression, stress, emotionality, and aggressivity in relation to alcohol consumption and sexual activity, especially behaviors considered risky. The research directions of the analysis carried out aimed at: identifying relationships between anxiety, depression, stress, aggressivity, and emotionality in students (19-25 years) and adjacent age groups; exploring the influence of psychological factors associated with risky behaviors regarding alcohol consumption and sexual activity; identifying the need for further research on the influence of anxiety, depression, stress, aggressivity, and emotionality on risky behaviors.

The analysis of the literature was done starting from two directions simultaneously. The first direction of literature analysis followed psychological factors, aiming in particular the relationships between anxiety, depression, stress, aggressivity, and emotionality. The second direction of analysis focused on risky behaviors, tracking alcohol consumption, sexual activity, and harmful physical activity.

A larger volume of publications on this topic was studied, but only materials from verified sources that provided consistent information on the topic were selected for inclusion in the analysis. The primary purpose of the present analysis was to explore the existing volume of information on the influence of personality factors on risky behaviors, and into the background aimed to identify less researched areas, but with the potential to provide relevant information for education, public health policies and psychotherapy.

The next plan of research questions was based on the analysis of specialized studies and their results:

How psychological factors such as anxiety, depression, stress, aggressivity, and emotionality and risky behaviors are defined and characterized? What are the relationships between anxiety, depression, stress, aggressivity, and emotionality explored in students?

What are the influences between the psychological factors mentioned and alcohol consumption and/or harmful sexual activity? Are there also influences of risky behaviors on psychological factors, among students and young people?

What aspects of the relationship between the psychological factors and the risky behaviors mentioned are less researched and could bring valuable information for decision-makers and psychotherapists?

The present research is an analysis of the literature on the relationship between psychological factors such as anxiety, depression, stress, aggressivity, and emotionality, on the one hand, and potentially harmful behaviors related to alcohol consumption and sexual activity, on the other hand.

The study was conducted through the systematic analysis of the scientific literature, published between 2010-2020, including correlation between personality factors and risky behaviors. The process consisted of stages of search, selection, and systematic analysis of scientific articles in relation to the set of indicators and criteria detailed below.

The indicators that formed the basis of the analysis of the research results presented in the selected articles were as follows: a) The presence of some personality factors measured in students and the relations between them; b) The existence of correlations between personality factors and risky behaviors; c) The existence of significant correlations between harmful forms of alcohol consumption and sexual activity.

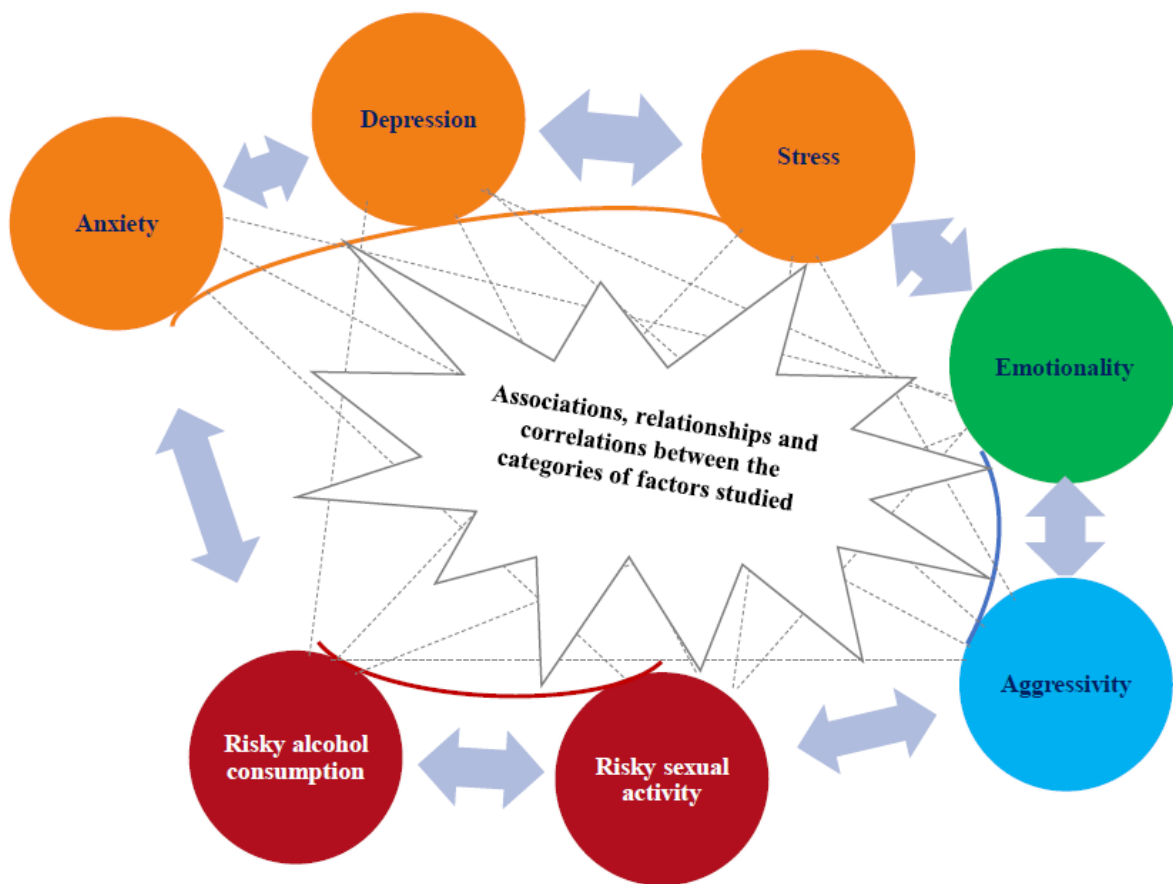
The search for study publications was done in English and Romanian, the search process was done in the following databases: Sage Journals, APA, BioMed Central, US National Library of Medicine, Journal of Studies on Alcohol and Drugs, ELSEVIER, SpringerLink and ScienceDirect, after the following key phrases and terms, taken separately or in combination: anxiety, depression, stress, emotionality, aggressivity/aggressiveness, alcohol consumption, drinking motives, binge drinking, sexual behavior, risky sex.

The searches were performed between November 2019 and October 2020.

From the results of the online search, 551 titles and abstracts were reviewed, of which were retained for the analysis of the full publication those that simultaneously met the following criteria: the article was published in the period 2010-2020; presented quantitative or qualitative research results relevant to the purpose of this research (study topic included: anxiety, depression, stress, emotionality, aggressivity, risky sexual behavior, risky alcohol consumption, or a combination thereof), at least one variable measured such behavior; the studies were published in journals or other scientifically verified publications. Figure 1 illustrates the way the concepts in the study were analysed and the relationships between them.

**Figure 1.**

*Levels of analysis of the literature according to the relationships between the factors studied*



Applying the selection criteria in a first stage, 93 public articles were retained for the analysis of the text. In the next stage, 29 studies were eliminated and which, although they corresponded to the search for keywords and conceptual constructs, were either strictly medical (not psychological), or revealed rather demographic information (translation of the concept of gender, by the word sex). In the third stage, a number of 33 articles were eliminated, the results of which did not provide information relevant to the objectives of the present study. Thus, 31 scientific research articles remained in the final stage, in order to be deepened. A summary of the main elements of analysis for each article is included in Tables 2, 3, 4, and 5. Of the 31 remaining articles in the analysis, 3 dealt with risky behaviors (on alcohol consumption and sexual activity), 11 reported results for the prevalence and implications of psychological factors, and 17 studied both psychological factors and risky behaviors.

## Results

The table below shows the distribution of research topics in the total number of articles included in the analysis.

**Table 1**

*Distribution by topics of interest of the studied articles*

		Psychological factors				
		Anxiety	Depression	Stress	Emotionality	Aggressivity
No association with risky behaviors		9	11	4	3	2
Risky behavior	Alcohol consumption	3	4	0	0	3
	Sexual activity	6	11	3	1	5
	Total	18	26	7	4	10

In the research studied, risky behaviors were rarely analyzed in connection with psychic components of personality/psychological factors. However, there is scientific concern in this regard. Ngo et al. published in 2018 the results of a survey of 735 young people, according to which 27.2% of respondents had exercised physical violence in couple, and 16.5% sexual violence in couple. The results did not show gender differences in the presence of anxiety, nor were they conclusive whether it precedes behavioral violence or vice versa. Shwartz, O'Rourke, and Daoud (2020), however, in a study of 1,055 women in Israel, aged 18-48, on the relationship between postpartum depression and intimate partner violence, found that unplanned pregnancy increases the risk of violence of the intimate partner as well as that of postpartum depression. Significant associations have been found between different risky behaviors such as irrational alcohol consumption and potentially harmful sexual activity (Davis et al., 2012; Choudhry, Agardh, Stafström, & Östergren, 2014), but less in relation to psychological components.

In a multimodal, predominantly qualitative study, Lloyd, af Klinteberg, and DeMarinis, (2017) claimed that in Sweden, after 2004, young people were the largest group of psychiatric patients. In Australia, 20% -25% of young people between the ages of 12 and 25 were estimated to suffer from mental health problems as published in 2019 by Masters, Zimmer-Gembeck, and Farrell, in a study conducted on 391 Australian students. Similar estimates have been made for Western Europe and the United States. Predominant symptoms of anxiety and depression were found more in adolescent girls than in boys, more in women than in men (Masters et al. 2019; Lloyd et al., 2017; ul Haq, Irum Sajjad Dar, Aslam, & Mahmood, 2018). Lloyd et al. (2017) conducted a study on 53 women between the ages of 21 and 25 who were in treatment or waiting within a psychotherapy clinic, and found that participants with high scores on depression had a negative concept about themselves and the lack or inability to use existential resources (concept about self and world, religion, ontological security, etc.).

ul Haq et al. published in 2018 the results of a study conducted in 2017 on 361 students at Punjab University in Lahore, India. Exploring the levels of anxiety, depression and stress related to various demographic factors, they found that male participants were more anxious, depressed and stressed compared to female, students who reported parents with medium and high educational instruction had fewer symptoms and stated that there were higher levels of anxiety where the participant's father was educated below the high school level.

Defined as *anticipation of danger* and characterized by *muscle tension, alertness, necessary to prepare for an expected danger*, as well as through *avoidance - cautious behavior* (American

Psychiatric Association, 2016, p.189), anxiety is one of the most common conditions. Unlike fear, long-term anticipations of anxiety refer to negative events, which are usually (not exclusively) psychological in nature (Lovibond & Lovibond, 1995). For the present research, articles containing any of the following categories were searched and analyzed: social anxiety disorder/social phobia, agoraphobia, generalized anxiety disorder, nonspecific anxiety disorder, combinations thereof, symptoms or manifestations whether evaluated clinically or only in research purpose.

"Depression seems to be a state characterized mainly by a low level of self-esteem and initiative, associated with the perception of a low probability of achieving significant personal goals for the individual" (Lovibond & Lovibond, 1995, p. 31). In the present study were included all forms of depression according to the American Psychiatric Association (2016, p. 155-188), but also specific symptoms or manifestations.

Mutalik, Moni, Choudhari, and Bhogale, in a study published in 2016, in which they explored depression, anxiety and stress in students in Bagalkot, India, found high levels in all three measured parameters. In Canada, it has been estimated that 8% of people over the age of 18 will experience depression at some point in their lives. Also, 60% of respondents to a study of University of Alberta students reported depressive symptoms (McDougall et al. 2019). The same study mentioned above, published in 2018 by ul Haq and his collaborators, showed that the symptoms of depression and stress have higher values in students living with family than those living alone or with friends and that those coming from illiterate mothers have higher levels of anxiety also.

According to the longitudinal study published in 2019 (Carney et al., 2019) and conducted on 662 soldiers over 18 years of age in the United States, infected with HIV, found that those with clinically diagnosed depression reported the lowest condom use in sexual intercourse with new partners compared to those with mild depressive symptoms. Depression seems to be an important factor in choosing risky behaviors in students as well. It may influence the decision to drop out of university, as mentioned by McDougall et al. in 2019, in a study conducted on 6,639 Canadian female students under the age of 30. "Young adults are more vulnerable to depression and stress being in a period of transition of identity formation" (ul Haq et al., 2018, p. 1). Other researchers have concluded that depression is the most common mental disorder in students.

From a wider range of disorders, the general term of stress "can be conceived as a persistent state of hyperactivation that reflects the difficulty of coping with the difficult demands of life" (Lovibond & Lovibond, 1995, p. 32). Psychological disorder increasingly present in postmodern society, stress, in its various forms, accompanies the individual at all stages of age. For the present study, attention was paid to all forms of stress included in studies on young people (18-25 years), teenagers or adults.

Post-traumatic stress disorder and depression have been associated with intimate partner violence in men in South Africa as well as in developed countries, as Breet, Seedat, and Kagee mentioned in an article published in 2019. The article is the result of a cross-sectional study conducted on 221 HIV/AIDS survivors. Psychological imbalances and poor mental health can be risk factors for aggressivity. Irritability and anger, as symptoms associated with post-traumatic stress disorder, may increase the likelihood of committing intimate partner violence (Breet et al., 2019). The same study revealed that men who reported more severe symptoms of post-traumatic stress reported 3 times more sexual coercion (committed), while women who reported more severe symptoms of post-traumatic stress disorder were 3 times more likely to commit psychological aggression.

Ahmed et al., in a study published in 2014, conducted on 407 students at the University of Kuwait, over the age of 18, found that stressed female students had a significantly higher tendency than boys to choose unhealthy food.

As an infinitum continuum, the psychological factor emotionality designates the dynamics of the person's affective spectrum, polarizing from "emotional stability, or, at the opposite pole, a person's neuroticism" (Fahrenberg, Hampel, & Selg, 2001, p. 45).

The increased risk of psychological pathology has been associated with emotional disorders (Masters et al., 2019). Emotionality has also been described as "the ease with which emotions are aroused", defining negative emotionality as the experience of the generally negative environment of individuals interacting with other people (Wolff & Baglivio, 2017, p.5). Analyzing a database of 27,720 juvenile delinquents who completed the sanctioning service in Florida, Wolff and Baglivio found that hostile childhood experiences are activated in the form of negative emotionality. Moreover, they said about children with a predominantly negative perception of others and the environment and those whose (negative) emotions are easier to activate, that they were more likely to engage in antisocial and therefore risky behaviors.

Aggressivity refers to that personality factor characterized either by self-control or by "a high level of spontaneous aggressivity, (...) a general state of hostility towards others and towards the events they face" (Fahrenberg et al., 2001, p. 32).

Although exposure to violence, as a control, may not differ by gender, a 2005 study of 1,220 students in Uganda (Agardh et al., 2012.b) found that symptoms of mental imbalance could be expressed differently. This was relevant in a broader conceptual context, with women experiencing more sexual violence and men experiencing more physical aggressivity. Brett et al. in 2019 showed that when analyzing the tendency to act aggressively, men are more prone to physical aggressivity while women are more prone to psychological aggressivity. In Romania, following a study of 869 respondents between 18 and 75 years old, Rada (2014) found that psychological abuse of men against women was the most common type of reported violence, and 35% of respondents had witnessed parental violence during childhood.

A study carried out in Romania between 2014-2015 among 836 young people aged 19-23 years living in a romantic relationship revealed that men perceived significantly higher levels of aggressiveness in couple than women. The most surprising result showed that "men were three times more exposed to forced sexual intercourse than women" (Faludi, 2018).

In teenagers, experiencing and committing violence in a cogeneration context (with colleagues and/or couple) amplifies the risk of internalizing symptoms, as found by Garthe, Sullivan, and Behrhorst (2018), in a study conducted on 1,087 teenagers in disadvantaged areas of the United States of America, achieved through the education system.

Only one of the reviewed and studied studies concerns aggressivity as a personality factor (Fahrenberg et al., 2001), the vast majority considering aggressivity as a type of behavior (aggressivity, violence; physical or mental). Lloyd et al. (2017) found that participants with high scores on depression also recorded high scores on inhibiting aggressivity.

For most states, the mental health of citizens has become one of the priority directions of public health policies. Even in some African countries, the national strategic health plan contains aspects of mental health, as shown by Agardh, Cantor-Graae and Ostergren (2012a).

The present study considered the following potentially harmful behaviors: irrational alcohol consumption, risky sexual activity and sedentary lifestyle, later extended to the dimensions of physical activity.

Alcohol consumption is one of the factors with a great influence on the social group and society in general. Kilwein and Looby in 2018 reported reasons for socializing for alcohol consumption, following a study of 108 students, aged 18 to 24, in the central-western United States. The research was supported a year later by Looby, Bravo, Kilwein, Zimmerman and Pearson in 2019, who found similar conclusions, conducting a research on 2,039 students from 10 universities in the United States, with an average age of 19.79 years. The influence of colleagues/ cogeneration rather than parents was also reported by Rada and Ispas (2016).

Understanding the risks associated with sexual activity requires both a psycho-social and a psycho-medical approach. The definition of sexual health according to the World Health Organization: "A state of physical, emotional, mental and social well-being in relation to sexuality;

it is not merely the absence of disease, dysfunction or infirmity" (Glasier, Gülmezoglu, Schmid, Moreno, & Van Look, 2006, p. 1596).

In order to determine the sexual quality of a person's life, it is necessary to consider the subjective interpretation of personal experiences and satisfaction. Tutino et al., in a study of 306 students (boys), published in 2018, concluded that sexual arousal could be the most sensitive dimension of sexual functionality in the presence of mental health deficiencies. Another finding of the study was that mental health difficulties may have a greater impact on men's sexual function and quality of life compared to frequency. "Sexual victimization and depression are common in university campuses, especially for women" (McDougall et al., 2019, p. 1).

Risky alcohol consumption is viewed both in terms of the potential harm to human individuals and the destruction of goods that may result from it. Its measurement is made both quantitatively based on an international standard related to culture - Standard Unit of alcohol and as a frequency. Exceeding 4 standard units for women and 5 standard units for men on a single occasion is considered dangerous.

The standard unit (US) of alcohol consumption is also controversial, especially in relation to the country/culture in which the research is carried out: in France - contains 10 g of pure alcohol, as explained by Costa et al. (2020) in a study conducted between 2016-2018, in France, on 179 subjects over 18 years of age. In Romania, Ministry of Health, National Institute of Public Health, National Center for Health Assessment and Promotion and Sibiu Regional Center for Public Health (Ministerul Sănătății, Institutul Național de Sănătate Publică, Centrul Național de Evaluare și Promovare a Stării de Sănătate și Centrul Regional de Sănătate Publică, Sibiu, 2019) established the standard unit of alcohol consumption at 12 g of pure alcohol. Both episodes of excessive drinking and sexual risks are behaviors with specific traits, related to culture (Petrova et al., 2019).

Carney et al. found in a study published in 2019 on 662 active HIV-infected soldiers in the United States that consumption of alcohol is a high-risk factor for respondents with recent onset of depressive symptoms. They concluded that there is a linear relationship between daily alcohol consumption and the increased risk of engaging in harmful sexual behaviors.

Like other researchers, Choudhry et al., in 2014, concluded, based on a cross-sectional study conducted on 1,954 students in Uganda, that a possible explanation for the association of alcohol consumption with sexual activity and having multiple sexual partners would be that individuals who believe that alcohol will make them less agitated, more sexually uninhibited, and those who are more at ease in a potentially sexual situation are more likely to drink before a possible sexual interaction in certain social contexts (in a bar, at a meeting, or party).

In some circumstances, the risks associated with sexual activity can be multiple and are studied according to national priorities or contexts. Maina, Orindi, Osindo, and Ziraba (2020), in a study conducted in 2017, on 606 girls aged 10-14 in Kenya, included in the definition of sexual activity, as non-penetrative sexual activities: kissing, holding hands, touching or caressing and spending time together.

Like sexual activity, risky sex is defined in several forms: sexual intercourse with two or more partners in the last 12 months (Choudhry et al., 2014) or even in the last 3 months (Carney et al., 2019); inconsistent condom use with new partners (Carney et al., 2019, Choudhry et al. 2019, Agardh et al. 2012a); sexual assault and/or coercion (Davis et al. 2012; Choudhary, Smith, & Bossarte, 2012); commercial and intergenerational sex (Choudhry et al., 2014).

Analyzing the gender difference, Breet et al. (2019) found that boys had a tendency almost 2 times higher (42.9%) than girls (23.8%) to commit sexual coercion. At the same time, Tutino et al. (2018) found that mental health difficulties can have a greater impact on men's sexual functionality and quality of sex life.

McDougall and colleagues (2019) associating risky sex with psychological characteristics found that 6.8% of study participants, female students under 30, were victims of unconsented sex



during university courses. Moreover, they were 2.1 times more likely to be at risk of depression than those who had not experienced sexual victimization.

## Discussions

Looking to identify relationships between anxiety, depression, stress, aggressivity, and emotionality in students (19-25 years old), the following questions were used: How are the psychological factors such as anxiety, depression, stress, aggressivity and emotionality and risky behaviors defined and characterized? What are the relationships between anxiety, depression, stress, aggressivity, and emotionality explored in students?

It was found that the definition of personality factors was mostly common and was based in particular on the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2016). Most of the studies found addressed either separately or comparatively anxiety, depression, and stress (Mutalik et al., 2016; ul Haq et al. 2018; Tutino et al., 2018; Bryan et al., 2017; Agardh et al. 2012a) and there are many studies that address these issues in relation to intimate partner violence (Yavuzer, Albayrak, & Kılıçarslan, 2019; Ngo et al., 2018; Agardh et al., 2012b).

The exploration of the influence of psychological factors associated with risky behaviors on alcohol consumption and sexual activity was conducted by looking for answers to the questions: What are the researched influences between the mentioned personality factors and alcohol, sexual activity and harmful physical activity? Are there also influences of risky behaviors on psychological factors? The answer to the second question was negative: none of the studies included in the analysis investigated how the behavior influences the psychological factors.

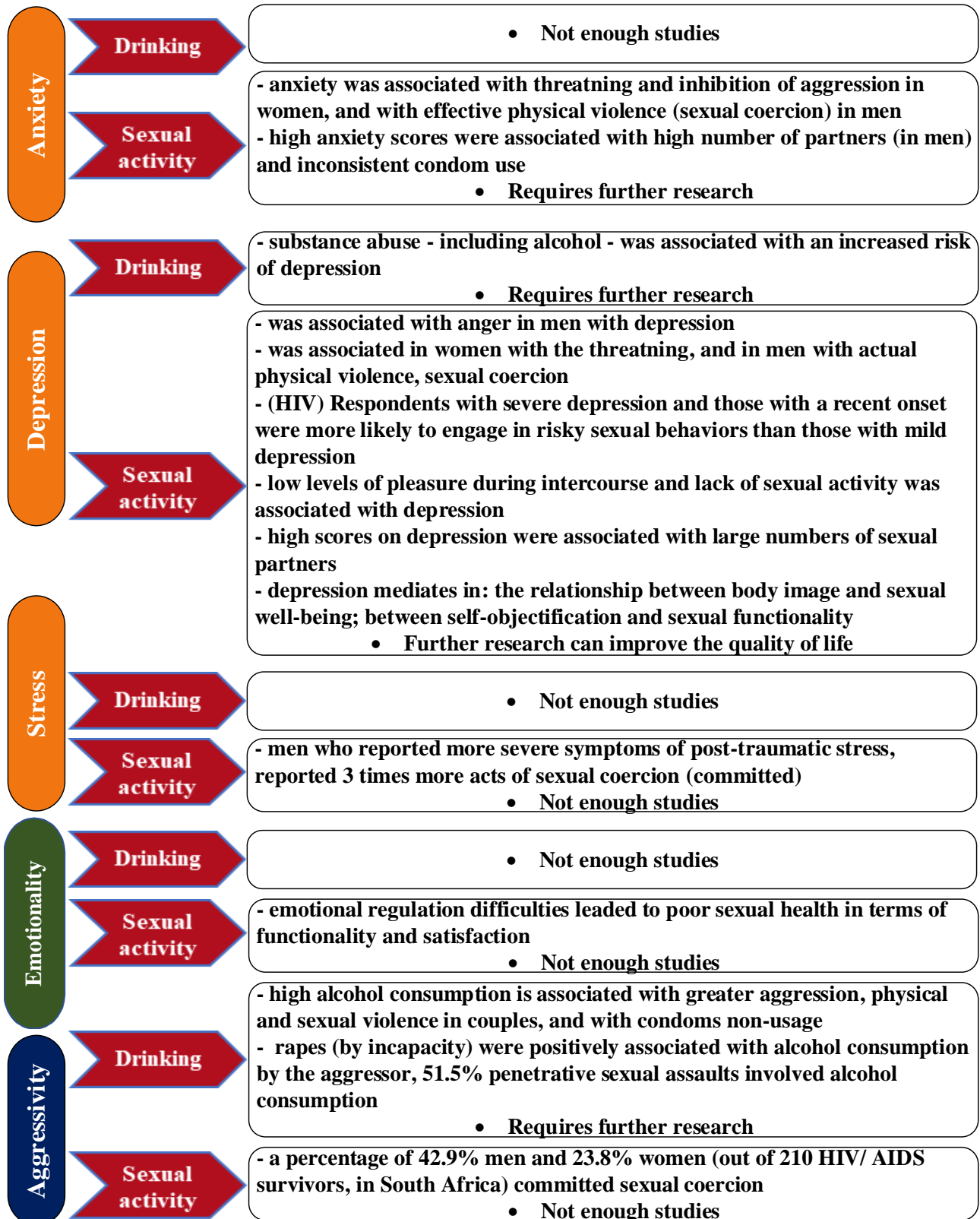
The most common factor is the aggressivity factor as being investigated in relation to risky behaviors regarding alcohol consumption and sexual activity (Ngo et al. 2018; Davis et al. 2012; Agardh et al., 2012a, 2012b; Breet et al., 2019), but very often in research on psychological factors such as depression and anxiety there are also variables on potentially harmful sexual activity (Kalina et al., 2011; Tutino et al., 2018; Breet et al., 2019; Rada, 2020) and sometimes irrational alcohol consumption (Choudhry et al., 2014; Carney et al., 2019; Agardh et al., 2012a; McDugall et al., 2018).

In order to identify the need for further research on the influence of anxiety, depression, stress, aggressivity and emotionality on risky behaviors, it was studied what aspects of the relationship between psychological factors and the risky behaviors mentioned are less researched and could bring valuable information for decision-makers and psychotherapists. It was found that although there is interest in these associations, the age stages have not yet been studied separately, and in terms of students there are still questions whose answer may influence age-specific educational and therapeutic strategies (Figure 2).

In tables 2, 3, 4, 5 after the Acknowledgments section the analysis of the studies discussed in this article can be consulted by categories as follows: studies that had students as subjects, studies that investigated both psychological factors and risky behaviors, studies that investigated psychological factors unrelated to risky behaviors and studies that investigated only risky behaviors in students.

**Figure 2.**

*Analysis of the need to deepen and conduct studies on the correlation between risky behaviors and psychological factors*



**Conclusions**

There are few studies that simultaneously investigate psychological factors and risk behaviors in students, most researching their prevalence. Anxiety and depression are very common and prevalent conditions in students. It was observed that the effects of mental imbalances are consistent and due to them mental health is one of the priorities of health policies. At the same time, although stress is one of the most common and widespread challenges of the 21<sup>st</sup> century, it does not benefit from in-depth studies on the psychological and behavioral repercussions.

Female subjects seem to tend to experience more anxiety and depression, but also to show more psychological aggressivity compared to male subjects who showed more physical aggressivity, even in sexual activity.

Emotionality as a psychological factor was mostly examined in studies aimed at validating psychodiagnostic tools and less to survey the population or correlate it with other personality or behavioral factors.

Aggressivity has been included in studies most often as a behavioral component (expressive) and not as a psychological factor.

According to the analyzed studies, the mental health difficulties generated sexual dysfunctions (especially in men) and predisposed to risky behaviors for health. Irrational alcohol consumption has been significantly associated with risky sexual activity and various forms of aggression.

Irrational alcohol consumption and risky sexual activity have been mostly investigated as distinct elements or in terms of physical effects on people. They have rarely been associated with personality factors.

Following the research direction coming from risky behaviors to imbalances of psychological factors, it was found that the risk of manifestation and development of symptoms and disorders such as anxiety and depression is higher in victims of aggressivity, people with risky sexual activity and those who consume alcohol irrationally.

The main limitation of the study is that it included insufficient databases in the analysis.

In the subsequent analyzes would be useful to identify articles, studies addressing successful coping strategies and mechanisms at an individual and group level, the development of prevention strategies applicable to teenagers and young people and therapeutic procedures to improve the listed risky behaviors.

**Table 2**

*Analysis of studies that had students as subjects*

References	Sample	Methodology	Psychological factors
1. Bryan et al., (2017).	537 US volunteer students, (18-60) average 21.75 years, 74.7% women, managed online (extra course credits).	Cross-sectional study Brief Symptom Inventory-18 (BSI-18), The Daily Drinking Questionnaire, The Rutgers Alcohol Problem Index (RAPI), The Authenticity Inventory-3 (AI-3), The Three-Item Loneliness Scale (TILS)	anxiety, depression
<i>Conclusions and findings</i>			
Loneliness correlates positively with poor mental health, anxiety and depression.			
2. McDougall et al., (2019).	6939 students under 30, Maritime Canada	Online cross-sectional study, 20-25 minutes, 44 multiple-choice items, + Center for Epidemiologic Studies	depression

References	Sample	Methodology	Psychological factors
		Depression (CES-D12),	
<i>Conclusions and findings</i>	A percentage of 36.7% of students are at risk of depression		
3. Ngo et al., (2018).	735 young people (18-25 years old, average 21.5) 270F and 465M	Ahimsa Project, Revised Conflict Tactics Scales (CTS-2), Alcohol Use Disorders Identification Test–Consumption (AUDIT-C), Five Factor Mindfulness Questionnaire–Short Form, Brief Symptom Inventory	anxiety, aggressivity
<i>Conclusions and findings</i>	No gender differences in anxiety. It is unclear whether anxiety precedes aggressivity (mental behavior) or vice versa		
4. Pelletier, Lytle, and Laska, (2016).	441 students under 35 (Body Mass Index of 20-35kg/m2), community colleges Minnesota, USA	Cross-sectional study Shorr height boards (Irwin Shorr, Olney, MD) and Tanita scales (Tanita TBF-300A Body Composition Analyzer, Arlington Heights, Cohen Perceived Stress Scale,	stress
<i>Conclusions and findings</i>	High levels of stress have been associated with a high prevalence of overweight and obesity.		
5. Agardh et al., (2012a).	980 students (80% of the total university), Uganda	Cross-sectional study self-administered questionnaire (132 items) + Hopkins Symptoms Checklist-25 and Symptom Checklist-90	anxiety, depression, anger
<i>Conclusions and findings</i>	High scores in anxiety are associated with high number of partners (M) and inconsistent use of condom (M). High scores in depression (15% M, 16% F) associated with a large number of sexual partners (F, M), Sexual activity can be related to anger, a strong element in men with depression.		
6. Agardh et al., (2012b).	1220 students, University of Mbarara, Uganda (under 23 years and over), average 23 years, 64.6% M, 35.4% F	Cross-sectional study self-administered questionnaire (132 items), English language, + Hopkins Symptom Checklist (HSCL-25) and Symptom Checklist-90 (SCL-90)	anxiety/depression
<i>Conclusions and findings</i>	Poor mental health is (anxiety and depression) associated in women with threats, and in men with effective physical violence. Women have higher scores in depression, but the relationship between depression and violence is similar (F, M). Sexual coercion has been significantly associated with poor mental health (F, M)		
7. Cazan, and Truța, (2015).	341 (260F, 81 M) Romanian students, (average age 20.65)	Validation study (cross-sectional) The Adolescent Resilience Scale, The Student-life Stress Inventory (SSI); The Satisfaction with Life Scale,	stress, emotionality
<i>Conclusions and findings</i>	Stressors worked as mediators between resilience, reaction to stress and life satisfaction. Emotional regulation has a mediating effect on reactions to stress.		
8. Mutalik et al., (2016).	118 students (42% M) in the first year, 18-25 years (average 21)	Cross-sectional study Depression, Anxiety and Stress Scale (DASS 21), General Health Questionnaire 28 (GHQ 28)	anxiety, depression, stress

References	Sample	Methodology	Psychological factors
<i>Conclusions and findings</i>			
	High levels of depression, anxiety and stress were identified.		
9. ul Haq et al., (2018).	361 students, Punjab University, Lahore, Pakistan	Cross-sectional study self-administered questionnaire: demographic data + DASS-21	anxiety, depression, stress
<i>Conclusions and findings</i>			
	Male participants had higher levels of anxiety, depression and stress compared to female participants. Students with educated parents had fewer symptoms. High levels of anxiety, depression and stress were found where the mother was illiterate. The level of anxiety is higher where the father is educated below the level of high school graduation. Symptoms of depression and stress have higher values in students living with family than those living alone or with friends (anxiety does not differ).		
10. Yavuzer et al., (2019).	904 students (average 25 years) volunteers different specializations Anatolia (Turkey) 65.7% F, 34.3% M	Cross-sectional study Self-Theory Scale, KAR-YA Aggression Scale (KAR-YA AS), Beck Depression Inventory, UCLA Loneliness Scale (UCLA)	depression, aggression
<i>Conclusions and findings</i>			
	Loneliness leads to the development (exacerbation) of depression. Depression is a positive predictor of aggressivity in young adults.		

**Table 3**

*Analysis of studies that researched both psychological factors and risky behaviors*

References	Sample	Methodology	Psychological factors	Behaviors approached through the risk dimension
1. Davis et al., (2012).	225 young men, 21-35 years old, single, volunteers,	Cross-sectional, quantitative study Eligibility conditions, laboratory, male operator, consent, computer application: drinking calendar and history questionnaire, Modified Sexual Experiences Survey (MSES),	aggressivity	alcohol consumption, sexual activity
<i>Findings (psychological factors)</i>				
	Very consistent association between alcohol consumption and lack of condoms in sexual assault. Men who have high expectations about the effect of alcohol on risky sex and aggressivity are most likely to commit sexual assault without a condom under the influence of alcohol.			
<i>Findings (behaviors)</i>				
	Alcohol consumption considerably reduces condom use. Incapacitated rapes are positively associated with alcohol consumption by the aggressor. 51.5% of penetrating sexual assaults involved alcohol consumption and lack of condoms. Very consistent association between alcohol consumption and lack of condoms in sexual assault.			
2. Garthe et al., (2018).	1087 young people (51% M), 7 <sup>th</sup> grade, ethnic and racial diversity, disadvantaged communities, USA	Secondary data analysis + cross-sectional study (computer-assisted interview + teachers' reports on anxiety and depression in adolescents. The Problem Behavior Frequency Scale,	anxiety, depression, aggressivity	sexual activity

References	Sample	Methodology	Psychological factors	Behaviors approached through the risk dimension
		adapted Safe Dates aggression scale, Behavioral Assessment System for Children (BASC)		
<i>Findings (psychological factors)</i>	Teenagers in the category violence against their peers and couples had higher levels of anxiety than those in the class minor violence. The coincidence of violent relationships (eg: colleagues aggressivity and victimization, violence against colleagues and peers), substantially increase the risk of depressive symptoms in young adolescents.			
<i>Findings (behaviors)</i>	Not relevant.			
3.McDougall, et al., (2019).	6939 female students under 30, Maritime Canada	Online cross-sectional study, 20-25 minutes, 44 multiple-choice items, + Center for Epidemiologic Studies Depression (CES-D12), reminders and incentives, informed consent	depression	alcohol consumption, sexual activity
<i>Findings (psychological factors)</i>	A percentage of 36.7% of the participating female students reveled a risk of depression.			
<i>Findings (behaviors)</i>	Risk behaviors and substance abuse have been associated with an increased risk of depression. A percentage of 6.8% were victims of non-consensual sex during university courses. The risk of depression was found to be 2.1 times higher than in non-victims.			
4. Ngo et al., (2018).	735 young people (18-25 years, average 21.5) 270F and 465M	Cross-sectional, quantitative study Ahimsa Project, Revised Conflict Tactics Scales (CTS-2), Alcohol Use Disorders Identification Test – Consumption (AUDIT-C), Five Factor Mindfulness Questionnaire - Short Form, Brief Symptom Inventory	anxiety, aggressivity	alcohol consumption
<i>Findings (psychological factors)</i>	No gender differences in anxiety. 27.2% committed physical violence in a couple, 16.5% committed sexual violence in a couple.			
<i>Findings (behaviors)</i>	A percentage of 58.6% of the particiapnts reported alcohol consumption. High alcohol consumption is associated with higer aggressivity of physical violence as of sexual violence in couple, also.			
5. Shwartz et al., (2020).	1055 women Arab (248) and Jewish (807) Israel, 18-48 years (6 weeks - 6 months from birth)	Cross-sectional study female interviewers, trained, Arabic / Hebrew, private rooms, Edinburgh Postnatal Depression Scale (EPDS), + specific questions	depression, stress	sexual activity
<i>Findings (psychological factors)</i>	A percentage of 10.3% of participants showed postpartum depression (20.7% Arabs, 7% Jews), 36% exercised violence against their intimate partner. Increased chronic stress produces an indirect effect on postpartum depression.			
<i>Findings (behaviors)</i>	Unplanned pregnancy increases the risk of intimate partner violence and postpartum depression.			

References	Sample	Methodology	Psychological factors	Behaviors approached through the risk dimension
6. Tutino et al., (2018).	306 men, students Ottawa, Canada, 17-47 years old (average 19.97) who reported sexual activity alone or with a partner in the last 4 weeks	Cross-sectional online study, online, consent, questionnaire packet, ASI-3 Difficulties in Emotion Regulation Scale (DERS;) Depression Anxiety Stress Scales (DASS), Male Sexual Function Index (MSFI), Sexual Quality of Life Scale – Male Version (SQoL-M) and Sexual Experiences Questionnaire (SEQ), offset by course credits,	anxiety, stress, emotionality	sexual activity
<i>Findings (psychological factors)</i>	Greater sensitivity to anxiety leads to more difficulties in emotional regulation). Emotional regulation moderates the relationship between sensitivity to anxiety and anxiety symptoms. High mental stress (suffering) leads to poor sexual results. Men with high sensitivity to anxiety and maladaptive emotional regulation skills: are more likely to develop symptoms of anxiety and depression, more likely to experience sexual difficulties with functionality and satisfaction.			
<i>Findings (behaviors)</i>	The same factors that make you mentally vulnerable (sensitivity to anxiety, difficulties in emotional regulation) lead to difficulties in sexual health. Psychological risk factors were associated with greater difficulties in sexual arousal, orgasm (F, M) and desire (M). Mental health difficulties can have a greater impact on men’s sexual function and quality of sex compared to frequency.			
7. Vencill, Tebbe, and Garos, (2015).	426 heterosexual women, over 18 years old	cross-sectional study General Internalization subscale of the Sociocultural Attitudes Toward Appearance Scale (SATAQ-3), Surveillance subscale of the Objectified Body Consciousness Scale (OBCS;), Depression subscale of the Depression Anxiety Stress Scale-21 (DASS-21), Zung Self-Rating Depression Scale (SRDS;), Center for Epidemiological Studies-Depression Scale–Revised (CESD-R), The Body Exposure during Sexual Activities Questionnaire (BESAQ), Sexual Quality of Life Questionnaire-Female (SQoL-F)	anxiety, depression	sedentary lifestyle/ physical activity
<i>Findings (psychological factors)</i>	Image anxiety is a mediator in the relationship between body surveillance and sexual well-being. Depression is a mediator in: the relationship between body surveillance and sexual well-being, between self-objectification and sexual functionality.			
<i>Findings (behaviors)</i>	Image anxiety during sexual activity is negatively associated with sexual physical functionality. Participants more involved in body monitoring had a higher tendency to experience depression and image anxiety specific to sexual activity.			

References	Sample	Methodology	Psychological factors	Behaviors approached through the risk dimension
8. Agardh et al., (2012a).	980 students (80% of the total university), Uganda	Cross-sectional, quantitative study self-administered questionnaire (132 items) + Hopkins Symptoms Checklist-25 and Symptom Checklist-90	anxiety, depression, anger	alcohol consumption, sexual activity
<i>Findings (psychological factors)</i>	High anxiety scores associated with large number of partners (M) and inconsistent condom use (M). High scores in depression (15% M, 16% F) were associated with a large number of sexual partners (F, M). Sexual activity has been linked to anger, a strong element in men with depression.			
<i>Findings (behaviors)</i>	Strong effect of the high frequency of episodes of excessive drinking, as a measure of mental health control in terms of sexual activity and the large number of partners. High scores in anxiety associated with large number of partners (M) and inconsistent use of condom.			
9. Agardh et al., (2012b).	1220 students, University of Mbarara, Uganda (under 23 years and over), average 23 years, 64.6% M, 35.4% F	Cross-sectional, quantitative study self-administered questionnaire (132 items), English language + Hopkins Symptom Checklist (HSCL-25) and Symptom Checklist-90 (SCL-90)	anxiety, depression, aggression	sexual activity
<i>Findings (psychological factors)</i>	Poor mental health (anxiety and depression) has been associated with women with threats, and in men with actual physical violence. Women have higher scores in depression, but the relationship between depression and violence is similar (F, M). Sexual coercion was significantly associated with poor mental health (F, M).			
<i>Findings (behaviors)</i>	A percentage of 31.1% of respondents experienced sexual coercion (regardless of gender), a significant association between experiencing sexual coercion and exposure to violence.			
10. Breet et al., (2019).	210, South Africa, peri-urban, HIV/AIDS survivors	Cross-sectional, quantitative study self-report questionnaire, Conflict Tactics Scale – Revised (CTS2), Beck Depression Inventory – Second Edition (BDI-II), PTSD Symptom Scale – Self-Report (PSS-SR), English / Afrikaans / isiX-hosa language, rewarded with voucher to the supermarket,	depression, stress, aggression	sexual activity
<i>Findings (psychological factors)</i>	A percentage of 48% manifested moderate-severe depression (M, F). Women who reported symptoms of moderate-severe depression tended to report 4 times more physical aggressivity (committed). Men who reported more severe symptoms of post-traumatic stress reported 3 times more sexual coercion (committed). Women who reported more severe PTSD symptoms were more than 3 times more likely to commit psychological aggressivity. 44.4% M and 39.3% F committed physical aggressivity, 52.4% M and 46.4% F committed psychological aggressivity			
<i>Findings (behaviors)</i>	A percentage of 42.9% male and 23.8% female committed sexual coercion.			



References	Sample	Methodology	Psychological factors	Behaviors approached through the risk dimension
11. Carney et al., (2019).	662 active soldiers (over 18 years old) infected with HIV, USA	Longitudinal study informed consent, self-reported multiple measurements Center for Epidemiological Studies Depression (CES-D 2006-2010) + Sexual risk behavior surveys (RBS 2015)	depression	alcohol consumption, sexual activity
<i>Findings (psychological factors)</i>	A percentage of 57% of the participants reported mild symptoms of depression, 26% recent onset, 17% severe depression (90% undiagnosed). Participants with clinically diagnosed depression (10%) reported fewer condom use with new sexual partners than undiagnosed ones. Those with newly onset depression and severe depression use fewer condoms with new sexual partners (and more than 2 in the last 3 months) than those with reduced depressive tendencies.			
<i>Findings (behaviors)</i>	A linear relationship was found between daily alcohol consumption and increased risk of engaging in harmful sexual behaviors. Respondents with severe depression and those with recent onset were more likely to engage in risky sexual behaviors than those with mild depression.			
12. Choudhary et al., (2012).	61187 adults USA, (over 18 years old), 48.75% M, 51.25% F,	Cross-sectional, quantitative study Behavioral Risk Factor Surveillance System (BRFSS) questionnaire	anxiety, depression	sexual activity
<i>Findings (psychological factors)</i>	A percentage of 5% were victims of sexual assault, of which: 8.37% manifested anxiety disorder, 18.82% diagnosed depression, 28.28% diagnosed depression and anxiety.			
<i>Findings (behaviors)</i>	A percentage of 5.3% stated that they were victims of sexual abuse (88.84% F). Anxiety and depression had significantly higher values in victims of sexual assault.			
13. Kalina et al., 2011).	3725 (limited to 2318) students, 13-16 years (51% F), schools – towns in Slovakia	Cross-sectional, quantitative study, questionnaires addressed in 2 consecutive hours (90 minutes). Self-esteem (Rosenberg); Psychological well-being (GHQ-12)	anxiety, depression	alcohol consumption, sexual activity
<i>Findings (psychological factors)</i>	Older boys who reported having more frequent sex had higher levels of positive self-esteem, higher levels of psychological well-being (for those who reported low numbers: higher scores were reported in depression/anxiety, social functioning problems)			
<i>Findings (behaviors)</i>	A percentage of 48.2% (108) reported sexual activity after drinking alcohol, 37.5% without a condom at the last report, sometimes followed by unwanted pregnancy. Of total respondents, 33.9% (224) had first sexual intercourse, after at least one month of relationship, 19.6% had > 4 partners; Reported effects: sexually transmitted diseases, unwanted pregnancy.			
14. Maina et al., (2020).	606 girls, 10-14 years old, Nairobi, Kenya	Longitudinal study (secondary stage) face-to-face interview with trained operators, women, parental consent	depression	sexual activity
<i>Findings (psychological factors)</i>	A percentage of 60% of girls have reported at least one symptom of depression in the last 12 months. Girls with depressive symptoms were more likely to have sexuality in the pattern “experienced”.			

References	Sample	Methodology	Psychological factors	Behaviors approached through the risk dimension
<i>Findings (behaviors)</i>	A percentage of 13% out of the participants reported naive or experienced sexual experience.			
15. Rada, (2020).	601 geriatric patients in a institute, 55-93 years old (average 67.32)	Cross-sectional study informed consent, The Geriatric Depression Scale long form (GDS), ++	depression	sexual activity
<i>Findings (psychological factors)</i>	Association between those who report sedentary lifestyle and depression were found.			
<i>Findings (behaviors)</i>	Not relevant.			

**Table 4**

*Analysis of studies that researched psychological factors unrelated to risky behaviors*

References	Sample	Methodology	Psychological factors
1. Bryan et al., (2017).	537 US volunteer students, (18-60), average 21.75 years, 74.7% women, managed online (extra course credits).	Cross-sectional, quantitative study Brief Symptom Inventory-18 (BSI-18; Derogatis, 2000), The Daily Drinking Questionnaire, The Rutgers Alcohol Problem Index (RAPI), The Authenticity Inventory-3 (AI-3), The Three-Item Loneliness Scale (TILS)	anxiety, depression
<i>Findings (psychological factors)</i>	Loneliness positively correlates with poor mental health, anxiety and depression.		
2. Dobson, Ahnberg Hopkins, Fata, Scherrer, and Allan, (2010).	High-risk adolescents (high score on severe depression but no major depressive disorder or current or past manic episode), Calgary, Alberta, and Canada. 25- "Coping with stress", 21- "Let's talk"	Cross-sectional, quantitative study Center for Epidemiological Studies–Depression Scale (CES-D), Computerized Diagnostic Interview for Children and Adolescents for DSM-IV, Mood and Anxiety Symptom Questionnaire (MASQ), Rosenberg Self-Esteem Scale (RSES)	anxiety, depression
<i>Findings (psychological factors)</i>	The CBT protocol as well as the "Let's talk" protocol reduce the severity of depressive and anxiety symptoms in high-risk adolescents and increase self-esteem.		
3. Bonsaksen and Lerdal, (2012).	18 (12M, 6F) hospitalized psychiatric patients (average 7-8 months of treatment), Oslo, Norway, average age 43.7 years.	Cross-sectional, quantitative study The Global Assessment of Functioning Scale (GAF), International Physical Activity Questionnaire (IPAQ), The World Health Organization Quality of Life – BREF	anxiety, depression

References	Sample	Methodology	Psychological factors
		(WHOQOL-BREF), The Hospital Anxiety and Depression Scale (HADS)	
<i>Findings (psychological factors)</i>	Patients with different diagnoses of schizophrenia reported higher levels of depression and anxiety. General levels of physical activity were low and did not seem to relate to quality of life. Patients with different diagnoses of schizophrenia were more physically active and reported a lower quality of life.		
4. Lloyd et al., (2017).	53 F, 21-25 years (average 22.7), outpatient psychotherapy clinic, Sweden	Multi-modal study, predominantly qualitative, semi-structured interview. Quantitative: Karolinska Scales of Personality (KSP), Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research, Structural Analysis of Social Behaviour-Self-Concept (SASB),	anxiety, depression, aggressivity
<i>Findings (psychological factors)</i>	High anxiety. Tendency to depression. Participants with high scores in depression had a negative conception of themselves and a lack or inability to use existential resources. Inhibition of aggressivity.		
5. Wolff and Baglivio, (2017).	27720, (21% of juvenile delinquents who completed Community sanction service), Florida	Data analysis, centralized community sanction service database, Full Community Positive Achievement Change Tool (C-PACT)	anxiety, depression, emotionality
<i>Findings (psychological factors)</i>	(Anxiety and depression were included in the negative emotionality). About 50% of the observed effects of adverse childhood experiences are indirectly activated by negative emotionality. Children with a more negative perception of others and the environment and those whose (negative) emotions are easier to activate are more likely to engage in antisocial behaviors.		
6. Cazan and Truța, (2015).	341 (260F, 81 M) Romanian students, different faculties (average age 20.65)	The Adolescent Resilience Scale, The Student-life Stress Inventory (SSI); The Satisfaction with Life Scale	stress, emotionality
<i>Findings (psychological factors)</i>	Stressors acted as mediators between resilience, reaction to stress, and life satisfaction. Emotional regulation has a mediating effect on stress reactions.		
7. Masters et al., (2019).	391 students (56% F), Australia, grades 6-8 (monitored up to 9-11)	Longitudinal, quantitative study parental consent, questionnaire applied 4 times, kept 3 (for each year) last year was completed online. The Social Anxiety Scale for Adolescents (SAS-A), The Short Mood and Feelings Questionnaire (SMFQ), The Difficulty in Emotion Regulation Scale (DERS),	anxiety, depression, emotionality
<i>Findings (psychological factors)</i>	Early emotional disorders associated with symptoms of anxiety and subsequent depression, instead associated with emotional disorders. There is a process of emotional problems in adolescents, in the transition from early to middle adolescence. Lack of emotional clarity, non-acceptance of emotional responses, difficulties in controlling impulses, limited access to emotional regulation strategies, and difficulties in engaging in goal-oriented behaviors		

References	Sample	Methodology	Psychological factors
8. Mutalik, et al. (2016), May	118 students (42% M) in the first year, 18-25 years (average 21)	Informed consent, Depression, Anxiety and Stress Scale (DASS 21), General Health Questionnaire 28 (GHQ 28),	anxiety, depression, stress
<i>Findings (psychological factors)</i>	The level of anxiety was found to be higher than that of depression, followed by stress (DASS 21). Female respondents had higher levels of emotional distress than male respondents (GHQ 28).		
9. Soleimani et al., (2017). October-November 2015	399 teenagers (14-19 years old), Qazvin, Iran	Cross-sectional, descriptive study, Revised Child Anxiety and Depression Scale (RCADS), Iranian Adolescents Risk-taking Scale (IARS),	anxiety, depression
<i>Findings (psychological factors)</i>	Anxiety and depression significantly predict the occurrence of risky behaviors, along with: having smoking friends, suicidal ideation, and strong suicidal ideation.		
10. ul Haq et al., (2018).	361 students, Punjab University, Lahore, Pakistan	Cross-sectional study self-administered questionnaire: demographic data + DASS-21	anxiety, depression, stress
<i>Findings (psychological factors)</i>	Male participants had higher levels of anxiety, depression and stress compared to female participants. Students with educated parents had fewer symptoms. Symptoms of depression and stress have higher values in students living with family than those living alone or with friends (anxiety is no different). The illiterate mother correlates with high levels of anxiety, depression, stress. The level of depression is higher where the father is illiterate. The level of anxiety is higher where the father is educated below the level of high school graduation.		
11. Yavuzer et al., (2019).	904 students (average 25 years) volunteers, different specializations Anatolia (Turkey) 65.7% F, 34.3% M	Transverse sturgeon Self-Theory Scale, KAR-YA Aggression Scale (KAR-YA AS), Beck Depression Inventory, UCLA Loneliness Scale (UCLA)	depression, aggression
<i>Findings (psychological factors)</i>	Loneliness leads to the development (exacerbation) of depression. Depression is a positive predictor of aggressivity in young adults. Loneliness and depression were found to be positive predictors for aggressivity in young adults, while self-conception was found to be a negative predictor.		
12. Yuan and Hesketh, (2019). July-September 2018	2987 women, China	Partly Conflict Tactics Scale-2 (CTS-2), partly Composite Abuse Scale, The Center for Epidemiologic Studies Depression Scales (CES-D) (paper and electronic)	depression
<i>Findings (psychological factors)</i>	Prevalence of depression: 65.8% experienced psychological violence, 69.5% physical violence, 75.8% sexual violence.		
13. Pelletier et al., (2016). 2011 - 2012	441 students under 35 (index of 20- 35kg/m <sup>2</sup> ), community colleges Minnesota, USA	Cross-sectional, quantitative study Shorr height boards (Irwin Shorr, Olney, MD) and Tanita scales (Tanita TBF-300A Body Composition Analyzer, Arlington Heights, Cohen Perceived Stress Scale	stress
<i>Findings (psychological factors)</i>	High levels of stress have been associated with a high prevalence of overweight and obesity.		

**Table 5***Analysis of studies that researched only risky behaviors in students*

References	Sample	Methodology	Behaviors approached through the risk dimension
1. Choudhry et al., (2014). 2010	1954 students, under 22, over 22, University of Mbarara, Uganda	Cross-sectional study self-administered questionnaire, 132 items, English language	alcohol consumption, sexual activity
Findings (behaviors)	Alcohol consumption has been associated with 2 or more sexual partners in the last year (M, F). Significant associations between: alcohol consumption in general, alcohol consumption in relation to sexual activity and alcohol consumption at the last sexual intercourse with having multiple sexual partners. Inconsistency in condom use with new sexual partners was significant for men who consumed alcohol in connection with sexual activity. For women who drank alcohol frequently in connection with sexual activity, the risk of inconsistency in condom use was 2 times higher.		
2. Kilwein and Looby, (2018).	108 students, 18-24 years old (average 19.9), Midwestern US, 90 female (83.3%)	Cross-sectional study Daily Drinking Questionnaire (DDQ); Drinking Motives Questionnaire - Revised (DMQ-R); Cognitice Appraisal of Risky Events Revised (CARE-R) - Risky sexual Activity Scale	alcohol consumption, sexual activity
Findings (behaviors)	Risky sexual behavior more often when consuming alcohol. Reported risky sexual activities: unprotected sex, sexual coercion, sex with unknown partners. The trend towards risky sexual behavior increases by 10.4% with each unit of social reasons. Individuals with strong reasons for strengthening/intensifying (validation) were prone to risky sex (regardless of alcohol level).		
3. Looby et al., (2019).	2039 (out of 7307) students, 18-24 years old (average 19.79, at 10 universities in 10 US states, 1485 female (72.83%))	Cross-sectional study online questionnaire; informed consent, credit for participation in scientific research, M-DMQ-R, Protective Behavioral Strategies Scale-20 (PBSS-20); DDQ; CARE-R-FOI;	alcohol consumption, sexual activity
Findings (behaviors)	Alcohol consumption mediates the association between social reasons and risky sexual behavior, between reasons for reinforcement and risky sexual behavior. Risky sexual activities: unprotected sex, sexually transmitted diseases, multiple sexual partners, risky sexual partners, sexual coercion. Reduction of serious harm (negative effects) mediates the association between social reasons and risky sexual behavior; Reduction of serious harm mediates the association between reasons for reinforcement and risky sexual behavior;		

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