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Binge drinking among adolescents: role of temperament, family environment and peers

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Summary

Aim. Adolescence is a development stage between childhood and adulthood, which involves the intense physical, mental, and social development of a person. Adolescents are at risk of engaging in risky behaviours, most notably the use of psychoactive substances, including binge drinking. Factors involving family, peers and individual differences may protect this age group from or put them at risk of abusing alcohol. The aim of the study was to describe the relation between temperament, family and peer factors, and the frequency of binge drinking among adolescents.

Material and methods. The survey was conducted among 825 students of primary and secondary schools in Szczecin (West Pomeranian Voivodeship, Poland), aged 13–16 (13.83 years old, 52.2% boys). The EATQ-R: "The class towards me" (A) and "I towards the class" (B), Family Assessment Scales (SOR) based on FACES IV and an original survey were used in the study.

Results. Statistically significant links were found between the manifested temperament features and the prevalence of adolescent binge drinking. Relevant relations were found between the assessment of family functioning and family behaviour. It was also revealed that the way the leisure time was spent with friends was strongly associated with the prevalence of binge drinking.

Conclusions. The studied areas indicate existing relationships between the selected variables.

Key words: binge drinking, adolescence, temperament

Introduction

Adolescence is a time of increased experimentation, which involves engaging in risky behaviours [1]. Risky behaviours, according to Jessor's [2] concept, are behavioural risk factors for the health, safety, and development of young people. Accord-

ing to current knowledge, risky behaviour of young people is associated with many socio-demographic factors, including a worse socio-economic situation of the families in which they live and the use of psychoactive substances by their family members. Significant factors that increase the likelihood of risky behaviour are low self-esteem of the teenager, lack of parental or peer supervision, as well as limited opportunities for spending free time actively [1].

One of the most common risky behaviours shown by adolescents is alcohol use and binge drinking. Even though the prevalence of teenage drinking has been steadily decreasing in recent years, the phenomenon is still a socially relevant problem [3, 4]. More important than the mere fact of consuming alcohol is its pattern, and in this respect adolescents differ considerably from adults. According to research, teenagers drink less frequently than adults but are more likely to binge drink; that is, they consume five or more drinks on a single occasion [5].

Many factors, both biological and psychosocial, influence the decisions of adolescents to engage in binge drinking. An important factor is the temperament of a teenager, which, according to the developmental concept of Derryberry and Rothbart [6], is a set of individual, biologically determined traits that determine the emotional and motor reactions, as well as those relating to attention, in various situations [6]. It is defined as individual differences in reactivity (emotional and motivational) and self-regulation. Reactivity determines individual differences in emotional stimulation. Self-regulation, which is related to the temperamental dimension of effortful control [7], covers processes that control reactivity, facilitating or inhibiting emotional and behavioural reactions. Effortful control consists of the ability to activate the desired behaviour, behavioural forms of self-control, as well as selected attention processes [6]. An increasing number of studies reveal that there is a temperament pattern characterised by a high level of reactivity and a low level of effortful control, which determines susceptibility to psychopathology, including binge drinking during adolescence [8, 9]. Other studies show correlations between greater self-regulation and reduced substance and alcohol use [10]. Another important factor related to adolescent binge drinking is the functioning of the adolescent's family; above all, the type of upbringing preferred by parents, along with the attitudes and behaviours they display in everyday life, are important [11]. According to The Olson Circumplex Model, a family is a system whose quality of functioning depends on the level of balance between cohesion (the emotional bond between family members) and flexibility (the quality and quantity of changes associated with leadership and roles) [12]. Family factors that encourage alcohol abuse by teenagers involve frequent alcohol consumption by parents and a general acceptance of alcohol consumption, including by one's own children [13], weak emotional bonds, and a low level of satisfaction with family life and relationships among its members [14].

The context of the peer environment cannot be overlooked when considering binge drinking among adolescents, as it significantly determines the nature of the behaviours exhibited by youth. Social relations among teenagers are most often established in two environments—school (mainly in class) and out-of-school, e.g. in the yard or on the Internet. A school class can be defined as 'a specific, randomly selected (except for

non-district schools) collection of individuals, of the same age and with similar levels of physical and mental development, who pursue similar goals' [15]. Global research shows that positive social experiences within a class reduce the number of behaviours related to alcohol use [16], although there is evidence suggesting that binge drinking increases with increased social cohesion among adolescents [17]. According to global studies, deficits in school relations are associated with an increased tendency to engage in risky behaviours, including binge drinking [18]. Leisure time may involve casual and voluntary relaxation and entertainment, as well as focusing on interests [19]. Another form of spending leisure time involves organised activities, such as dance or sports classes [20]. Research indicates an association between youth participation in activities and fewer risky behaviours, including binge drinking [21]. Adolescents involved in socially oriented activities exhibit fewer behaviours such as drinking alcohol or driving under the influence of alcohol later in life. Some studies indicate that participation in inappropriate forms of extracurricular activities may correlate with a decrease in the age of alcohol initiation and an increase in alcohol consumption, for instance, participation in organised sports activities [20]. Behaviours aimed at gaining peer acceptance or passive prevention of boredom, which are not controlled by parents, may also contribute to alcohol consumption [21]. In summary, adolescent binge drinking is associated with family and peer environment characteristics, as well as the adolescent's temperament.

Aim

The aim of this study was to describe the relationships between temperament, family, and peer factors and the prevalence of binge drinking among adolescents. Based on current theoretical knowledge and available research, it has been assumed that there are specific relationships between all the factors examined and binge drinking. The following hypotheses were put forward: in the context of the temperament, (1) greater emotional reactivity increases the risk of binge drinking among adolescents, and (2) greater self-regulation ability reduces that risk; in the context of family factors, (3) more correct family functioning reduces the risk of binge drinking, while (4) less correct functioning and (5) the occurrence of pathology in a family increases the risk of adolescent binge drinking; and in the context of peer relations, (6) correct relationships with peers within a class reduce the risk of adolescent binge drinking, while (7) social maladjustment in the classroom increases it. In addition, it was hypothesised that (8) proper relationships outside the classroom reduce the risk of adolescent binge drinking, and (9) passive and entertainment-oriented leisure time spent with peers increase that risk.

Material and methods

The following methods were used to collect the material:

1. The Early Adolescence Temperament Questionnaire – Revised (EATQ-R) by Capaldi and Rothbart [22], in a Polish adaptation by Cieciuch et al., to measure the temperament. The EATQ-R questionnaire consists of 13 scales (temperament traits) and has two versions: for parents and for adolescents. In the study, the authors used the self-report version consisting of 103 items, which asks the respondent to indicate the truthfulness of the statements on a 5-point Likert scale, where 1 means 'Almost always not true' and 5 – 'Almost always true'. The Cronbach's alpha reliability coefficient for most scales of the original version of the EATQ-R ranges from 0.65 to 0.82, indicating sufficient reliability. In our analysis of the EATQ-R, Cronbach's alpha was 0.845.
2. The questionnaires 'Class towards me' (*Klasa wobec mnie*) (A) and 'Me towards the class' (*Ja wobec klasy*) (B) by Zwierzyńska and Matuszewski [23], to assess the social maladjustment of youths in the school class. The 'Class towards me' questionnaire measures the student's beliefs about the behaviour displayed towards him by his classmates. It consists of 24 items belonging to three scales: (1) Support from others – Indifference of others; (2) Feeling safe – Threat; and (3) Appreciation by others – Underestimation. The 'Me towards the class' questionnaire concerns the student's perception of his or her own behaviour towards classmates. It consists of 26 items belonging to two scales: (4) Acting for the benefit of others – Egocentrism and (5) Aggressiveness. One scale (Sociability – Isolation) is composed of questionnaire items (A) and (B). The overall score of a student's social maladjustment in a school class is calculated by summing the results of both questionnaires. Respondents are asked to select one of five answers on a scale from 1 to 5 (where 1 means 'never' and 5 means 'always'), representing the intensity of a specific behaviour in the described situations [23]. The coefficients of internal consistency of both questionnaires and compatibility within the scales are high (Cronbach's α from 0.702 to 0.869). In our data, Cronbach's alpha was 0.914.
3. The Family Assessment Scales (*Skale Oceny Rodziny*, SOR), in a Polish adaptation by Margasiński [12], which is a Polish version of FACES IV (Family Adaptability and Cohesion Evaluation Scale) by Olson to measure young people's perceptions of different aspects of their family life. The questionnaire consists of 62 items, forming eight scales – six main and two additional. The main scales include Balanced Cohesion and Balanced Flexibility, as well as Disengaged, Enmeshed, Rigid, and Chaotic. The additional evaluative scales include Family Communication and Satisfaction with Family Life. Apart from the Satisfaction with Family Life scale, all items are statements to which the respondents respond on a 5-point scale (1 – I completely disagree; 5 – I completely agree). In the Satisfaction scale, respondents assess his or her level of satisfaction on a 5-point scale (1 – very dissatisfied; 5 – very satisfied) [12]. The reliability coefficients of the SOR scales are satisfactory, ranging from 0.70 to 0.93.

4. An own questionnaire – created to obtain from students: (1) basic socio-demographic data; (2) information about the quality of adolescents' peer relationships outside school and ways of spending time with friends; (3) data on the presence of violence in the family and/or use of psychoactive substances by family members; and (4) information on the occurrence and nature of risky behaviours of the youth related to alcohol consumption and binge drinking. This section of the tool was inspired by selected items from a survey used in the European research project ESPAD [24]. The binge drinking variable was measured with a slightly modified question from the ESPAD survey: 'Do you get drunk on alcohol (i.e. do you drink enough to stagger, slur your speech, forget what happened, etc.)?'. Respondents marked the single answer that best described their behaviour out of four possible options: (1) 'No, I've never been drunk in my life; (2) 'Yes, I've been drunk once in my life'; (3) 'Yes, I've been drunk a few times in my life'; and (4) 'Yes, I get drunk / used to get drunk often in my life'.

The survey was conducted using the 'paper-pencil' method among students of Szczecin's primary and secondary schools (West Pomeranian Voivodeship, Poland). Due to the undifferentiated ethnic character of Poland, all respondents belonged to the European/White ethnic group. Each of the respondents was fluent in Polish. Mixed selection was used in the study. The following procedure was used to select the study group: to obtain a holistic characterisation of the group, in the first step, primary schools from different areas of the city were selected, as well as high schools and technical schools that were in low, medium, and high positions in national rankings. In the second step, the classes whose students took part in the study were randomly selected. Before carrying out the survey, the legal guardians of the students expressed written consent for their children or charges to participate in the survey. All participants gave their consent, and the research was carried out in accordance with the ethical guidelines of Good Clinical Practice and the Declaration of Helsinki. The research was carried out on the schools' premises, in classrooms. A single, group-based survey was performed among the students of a given class and lasted 90 minutes. The survey was voluntary and anonymous. The survey was always conducted by a team member (psychologist).

The survey was conducted among $n = 825$ teenagers aged 13–16 ($M = 13.83$ years, 52.2% boys). From the sample group, those who had been in contact with alcohol ($n = 615$, 50.2% girls, age $M = 14.15$) were included for further analysis. Among the surveyed teenagers,69.2% ($n = 426$) were part of nuclear families—both parents, while 26.3% of the students had divorced parents ($n = 162$). Regarding both the mother's and father's education, the largest group consisted of those whose parents had a university degree, and the smallest group consisted of those with basic education. Most of the students earned average grades in school.

The IBM SPSS Statistics 28 program was used for statistical data analysis. The analyses were carried out in several stages. First, the differences between persons who had never been drunk, had gotten drunk once, and often got drunk were examined in terms of temperamental dimensions and family factors using the Kruskal-Wallis H test. Then, using the chi-square independence test or Fisher's exact test, analyses

assessing the prevalence of risky behaviours and different types of aggression in the family were carried out. Differences in the prevalence of the given outside-of-class peer factors with respect to the prevalence of binge drinking were tested in the same way. The chi-square test was used to check the differences between the groups with respect to outside-of-class and in-class peer factors. The significance level was $p < 0.05$.

Results

At first, the differences between persons who never got drunk, got drunk once and often get drunk were checked in terms of temperamental dimensions (verification of the first and second hypotheses). Kruskal-Wallis *H* test analysis results are presented in Table 1.

Table 1. **Comparison of temperament dimensions among individuals according to the prevalence of binge drinking**

	never (*n* = 491)			**got drunk once (*n* = 102)**			**a few times/ often (*n* = 22)**					
	M	*Me*	*SD*	*M*	*Me*	*SD*	*M*	*Me*	*SD*	*H*	*p*	η^2
Activation Control	25.70	25.00	5.10	23.52	24.50	4.61	23.59	24.00	3.38	15.24	<0.001	0.02
Affiliation	28.12	29.00	5.67	27.32	27.00	5.32	27.45	28.00	6.49	1.99	0.370	0.00
Activity Level	28.10	28.00	6.46	31.98	31.00	6.56	31.09	32.00	6.57	32.39	<0.001	0.05
Attention	20.32	20.00	4.49	20.08	20.00	4.67	19.36	18.50	4.56	1.48	0.478	0.00
Fear	22.30	22.00	4.10	21.05	21.00	3.61	22.17	22.50	3.25	8.94	0.011	0.01
Frustration	16.51	16.00	4.81	17.06	16.00	5.04	19.36	19.00	4.28	7.78	0.020	0.01
High Intensity Pleasure	16.86	17.00	4.50	15.85	16.00	4.53	16.86	17.00	4.21	3.26	0.196	0.01
Inhibitory Control	37.23	37.00	5.55	35.86	36.00	4.73	35.05	35.00	5.04	7.72	0.021	0.01
Pleasure Sensitivity	29.61	30.00	6.04	30.53	30.00	5.88	29.77	28.50	5.71	2.03	0.362	0.00
Perceptual Sensitivity	21.82	22.00	5.52	21.69	21.00	5.67	20.32	20.00	4.78	1.91	0.385	0.00
Shyness	36.11	36.00	7.14	36.96	36.50	7.26	37.41	36.00	7.66	2.20	0.333	0.00
Aggression	19.24	19.00	4.00	18.81	19.00	4.50	19.57	20.00	4.41	1.27	0.529	0.00
Depressive Mood	21.40	22.00	5.24	20.12	20.00	5.14	18.64	19.00	4.61	9.30	0.010	0.02

The analysis showed significant differences in terms of Activation Control, Activity Level, Fear, Frustration, Inhibitory Control, and Depressive Mood. To test the nature of those differences, additional post hoc analyses were carried out using Dunn's test with Bonferroni significance level correction. For Activation Control, significant differences were only found between those who had been drunk once and those who had never been drunk ($p = 0.001$). Those who had never been drunk had significantly higher levels of Activation Control than those who had been drunk once. People who

had never been drunk had significantly lower Activity Levels than the people who had been drunk once ($p < 0.001$) and who got drunk often ($p = 0.024$). Differences between people who had been drunk once and those who got drunk often were found to be insignificant. Those who had been drunk once manifested significantly lower levels of Fear than those who had never been drunk ($p = 0.009$). The respondents who had never been drunk manifested significantly lower levels of Frustration than those who got drunk often ($p = 0.018$). The differences between the groups were found to be negligible for Inhibitory Control and Depressive Mood after adjusting for the level of significance.

A similar analysis using the Kruskal-Wallis *H* test was conducted for family factors and the prevalence of binge drinking (verification of the third and fourth hypotheses). Table 2 includes the results of the analyses.

Table 2. **Comparison of family factors among individuals according to the prevalence of binge drinking**

	never (*n* = 491)			got drunk once (*n* = 102)			a few times/ often (*n* = 22)					
	M	*Me*	*SD*	*M*	*Me*	*SD*	*M*	*Me*	*SD*	*H*	*p*	η^2
Balanced Cohesion	26.72	27.00	5.08	25.60	26.00	5.40	23.68	23.00	5.41	10.31	0.006	0.02
Balanced Flexibility	23.09	23.00	4.80	21.97	22.00	4.65	21.09	22.50	4.93	7.87	0.020	0.01
Disengaged	15.51	15.00	4.84	16.99	17.00	4.54	18.73	19.00	3.37	20.20	<0.001	0.03
Enmeshed	16.30	16.00	4.33	15.90	16.00	4.29	18.86	19.00	3.67	8.79	0.012	0.01
Rigid	19.20	19.00	4.46	19.12	19.00	4.40	20.18	20.00	4.32	1.31	0.520	0.00
Chaotic	17.89	18.00	4.47	18.25	19.00	4.58	21.55	20.50	5.33	10.40	0.006	0.02
Family Communication	37.90	38.00	8.41	35.97	36.00	8.18	34.09	30.00	9.65	8.74	0.013	0.01
Satisfaction with Family Life	38.05	39.00	8.38	35.39	35.00	7.40	34.59	35.00	7.61	15.47	<0.001	0.03

The analysis showed significant differences in terms of all family dimensions except Rigid. To test the nature of those differences, a post hoc analysis was carried out using Dunn's test with Bonferroni significance level correction. The adolescents who got drunk often had a significantly lower level of Balanced Cohesion compared to those who had never been drunk ($p = 0.021$). Those who had never been drunk manifested a significantly higher level of Balanced Flexibility compared to the persons who had been drunk once ($p = 0.048$). The respondents who had never been drunk manifested a significantly lower Disengaged level than the people who had been drunk once ($p = 0.005$) and who got drunk often ($p = 0.002$). The people who often got drunk manifested a significantly higher Enmeshed level than the people who had been drunk once ($p = 0.010$) and who had never been drunk ($p = 0.015$). Similar differences were found in the Chaotic category. The respondents who often got drunk ($Me = 20.5$) manifested a significantly higher level in the Chaotic category compared to the people who had been drunk once ($p = 0.034$) or who had never been drunk ($p = 0.005$). Those

who had never been drunk manifested a significantly higher level of Satisfaction with Family Life than the persons who had been drunk once ($p = 0.002$). After adjusting for the level of significance, the differences between the groups in terms of Family Communication were found to be negligible.

In order to verify the fifth hypothesis, analyses assessing the prevalence of risky behaviours and different types of aggression in the family were also carried out using the chi-square independence test or Fisher's exact test. The results are shown in Table 3.

Table 3. **Comparison of the prevalence of risky behaviours and aggression in the family in relation to the prevalence of binge drinking**

	never		got drunk once		a few times/ often				
	n	%	*n*	%	*n*	%	$\chi 2$	*p*	*V*
Smoking in the family	314_a	64.0	76_b	74.5	18_b	81.8	6.66	0.036	0.10
Drinking alcohol	54_a	11.1	18_a	17.6	5_a	22.7		0.050	0.10
Physical aggression	29_a	5.9	13_b	12.9	5_b	22.7		0.002	0.15
Verbal aggression	77_a	15.7	33_b	32.4	8_b	36.4		<0.001	0.18
Displaced aggression	38_a	7.7	18_b	17.6	6_b	27.3		0.001	0.16
Psychological aggression	20_a	4.1	14_b	13.7	2_{ab}	9.1		0.001	0.16
Indirect aggression	39_a	7.9	11_a	10.8	2_a	9.1		0.559	0.04

Note. Any different letter in the subscript indicates differences between groups at the $p < 0.05$ level.

The analysis indicates significant differences between the groups in terms of smoking in the family and physical verbal, displaced, and psychological aggression. The Baesley and Schumacker procedure (1995) was used to establish the differences between the groups. Smoking and physical and verbal aggression were significantly less frequent among the persons who had never been drunk compared to persons who had been drunk once or who did so often. Those who had been drunk once were significantly more likely to have experienced psychological aggression at home compared to the other two groups.

The final step was an analysis using the Kruskal-Wallis *H* test to test for differences between the groups on in-class and non-class peer factors. These analyses allowed verification of the sixth and seventh hypotheses. Table 4 provides a comparison of the in-class peer factors.

Table 4. **Comparison of in-class peer factors in relation to the prevalence of binge drinking**

	never (*n* = 491)			got drunk once (*n* = 102)			a few times/ often (*n* = 22)					
	M	*Me*	*SD*	*M*	*Me*	*SD*	*M*	*Me*	*SD*	*H*	*p*	η^2
Indifference towards others	14.25	13.00	8.46	16.39	16.00	8.27	17.86	16.00	9.19	8.82	0.012	0.01
Perceived threat	9.86	9.00	5.82	10.43	10.00	5.73	10.27	10.00	5.61	1.02	0.601	0.00
Underestimation	9.85	10.00	4.05	10.12	10.00	3.82	10.68	11.00	4.42	2.12	0.347	0.00
Isolation	13.77	13.00	7.21	15.43	15.00	7.23	17.41	17.00	6.67	10.26	0.006	0.02
Egocentrism	14.91	14.00	8.60	17.14	16.00	8.55	19.86	20.50	10.83	10.35	0.006	0.02
Aggressiveness	4.79	4.00	4.05	7.11	6.00	4.21	7.73	7.00	4.27	36.99	<0.001	0.06
Maladjustment	67.43	66.00	29.21	76.62	73.28	26.39	83.82	84.00	29.36	13.66	0.001	0.02

The analysis shows significant differences between the groups in terms of Indifference towards Others, Isolation, Egocentrism, Aggressiveness, and the general Maladjustment score. The people who had never been drunk manifested significantly lower levels of Isolation than those who got drunk often ($p = 0.047$). Those who had never been drunk manifested a significantly lower level of Egocentrism than the persons who had been drunk once ($p = 0.046$). The respondents who had never been drunk manifested a significantly lower level of Aggressiveness than the people who had been drunk once ($p < 0.001$) or got drunk often ($p = 0.002$). Similar differences were found in the Maladjustment level. The respondents who had never been drunk manifested a significantly lower level of Maladjustment than the people who had been drunk once ($p = 0.011$) or got drunk often ($p = 0.034$). After adjusting for the level of significance, the differences between the groups in terms of Indifference towards Others were found to be negligible.

In order to verify the eighth and ninth hypotheses, the chi-square independence test or Fisher's exact test were used to examine the differences in the prevalence of the given out-of-class peer factors in relation to the prevalence of binge drinking. The results of the analyses are shown in Table 5.

Table 5. **Comparison of out-of-class peer factors in relation to the prevalence of binge drinking**

	never		got drunk once		a few times/ often				
	n	%	*n*	%	*n*	%	$\chi 2$	*p*	ϕ
Quality of time – activity	311_a	63.3	54_{ab}	52.9	8_b	36.4	9.47	0.009	0.12
Quality of time – entertainment	294_a	59.9	75_b	73.5	18_{ab}	81.8	10.24	0.006	0.13
Quality of time – home	311_a	63.3	70_a	68.6	13_a	59.1	1.27	0.530	0.05
Sense of acceptance	449_a	91.4	98_a	96.1	19_a	86.4		0.126	0.08
Belonging to a group	370_a	75.4	80_a	78.4	17_a	77.3	0.46	0.795	0.03

The analysis carried out shows considerable differences in the quality of time spent with friends. The respondents who had never been drunk spent their time actively (e.g. playing outdoor sports, cycling) significantly more often than those who got drunk often ($p = 0.009$), and spent their time on entertainment (e.g. bowling, going to discos) considerably less often than those who had been drunk once ($p = 0.006$).

Discussion of results

The results of the study indicate that adolescents' risk of binge drinking is associated with their temperamental characteristics and functioning in the family and among peers. The study focused on testing the relationship between factors related to temperamental reactivity and self-regulation, and adolescent binge drinking. The results of our study revealed a negative correlation of a temperament trait related to self-control with adolescent binge drinking, which previous studies have shown [24]. The results obtained in the present study are also partially consistent with previous reports that higher alcohol consumption correlates positively with characteristics of the temperament related to emotional reactivity [25]. In accordance with the regulatory model of addiction, young people use binge drinking as a short-term method of dealing with negative emotions and frustration; however, they often do not take into account the further prospect of negative consequences [26]. The higher Activity Level and Fear among teenagers, as elements of surgency, act in our research as risk factors for adolescent binge drinking. Examining studies on the impact of surgency on binge drinking reveals a lack of consistency in the results obtained [27]. It is possible that temperamentally greater fear and frustration among adolescents may reduce the risk of frequent adolescent binge drinking due to concerns about the negative consequences they could face for their negative behaviour.

The respondents who got drunk more often assessed their families more negatively than their peers who had never been drunk or had been drunk once. The obtained results support the current data – even if the proximity of this factor is not always direct, there is no doubt that the family has an important influence on adolescents' risky behaviours, including binge drinking [13, 14, 28]. The teens who had binge drunk more often in their lifetime also reported more violence in their families. It is interesting that no considerable relationship was found between drinking alcohol in the family and binge drinking by the children. Most studies to date show that parents' alcohol consumption positively correlates with alcohol consumption among their children [29] and that lower alcohol consumption by parents is a protective factor against their children's binge drinking [30]. These relationships are multifactorial, which is shown by the results obtained by, for example, Mares et al. [31]. Their research indicates that increased alcohol consumption by parents and problems related to this may provide an opportunity to discuss the issue of risks associated with alcohol use. As a result, they may contribute to limiting binge drinking among the teens.

The results square with previous reports on the role of the quality of leisure time spent with peers [32, 33]. They point to a protective role for adolescent binge drinking of sports activities and spending time outdoors. At the same time, they show that

belonging to groups that party frequently increases the risk of adolescent binge drinking. However, the relationship between the quality of an adolescent's relationship with peers outside of school and their binge drinking was not revealed. It is possible that, depending on the more or less positive behaviour in the group that is important to the adolescent, a sense of acceptance and belonging may be a risk or protective factor for adolescent binge drinking.

The results of our study show that better social adjustment in the school classroom protects adolescents from binge drinking. Our results are consistent with previous ones, in which positive social experiences within a class, or more widely, within a school, reduce the number of behaviours related to the use of psychoactive substances and alcohol [16, 33]. Isolated students become increasingly disengaged from their peers and experience a lot of negative emotions, which they want to counteract through a state of intoxication, including alcohol. It is also worth considering a situation where an adolescent who is isolated from their classmates seeks a peer group, in which they often display risky behaviours for the first time [1]. This phenomenon is observed among teenagers who experiment with alcohol to build and maintain relationships with peers. Alcohol can temporarily reduce shyness and boost self-esteem and mood [34, 35]. Importantly, the results obtained in the present study indicate a relationship between a student's behaviour towards their class peers and binge drinking, but no such relationship is seen when analysing the behaviour of others towards the student under study. The present result may point to the need for the formation of social skills among young people and greater focus on inclusive activities in the classroom.

Conclusions

This study was an attempt to look holistically at the influence of factors of multiple aetiologies on adolescent binge drinking, which makes it possible to put the problem in a broad perspective. The authors have shown that binge drinking is influenced by both temperamental and environmental factors—related to the family home, school environment, peer group, and leisure activities. Knowledge about the determinants of binge drinking among adolescents may support the process of building effective and relevant actions addressed to young people—both preventive and therapeutic ones, which should be focused on improving their social and emotional competences. They also indicate the need to involve the wider social environment in preventing young people from getting drunk by organising their free time and through psychoeducational work with their families. Few studies have addressed the issue of binge drinking, and those that do address the issue of adolescent drinking tend to focus on the consequences of alcohol abuse. It is also worth noting that this study is part of the resilience stream, looking for risk and protective factors against binge drinking among young people. Further research should focus on mechanisms to understand the dynamics of how adolescents develop risky alcohol use and binge drinking.

The survey conducted has several limitations. The study did not take into account people from other geographical regions of the country or other cities. The study also did not control for variables that would indicate the broader context of the functioning of

adolescents and their families, such as socio-economic status, including extremely poor and excluded families. Another limiting aspect of the study is the use of self-reporting and survey methods and inference based only on the data provided by respondents in the questionnaire.

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