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Metacognitive style, attachment dimension and risk for alcohol abuse in Italian adolescents

Stile metacognitivo, dimensioni dell'attaccamento e rischio di abuso di alcol in un gruppo di adolescenti italiani

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ABSTRACT

Binge Drinking (BD) is a current phenomenon that has a strong health and economic impact worldwide, estimated 2.5 million cases of death in the population between 15 and 29 years. Previous studies highlighted the role of metacognition and insecure attachment in the development of psychopathological disorders. The study aims to verify if there is a correlation between the presence of metacognitive beliefs and an insecure attachment style with the risk for alcohol abuse. The sample is 206 students between 14-17 years. Each student completed the following questionnaires: The Metacognition Questionnaire - 30 (MCQ-30), Inventory of Parent Attachment (IPPA - Parent), Inventory of Peer Attachment (IPPA - Peer), Alcohol Use Disorders Identification Test (AUDIT - 10).
The main result of the present study is that the "at risk for alcohol abuse" group shows a significant difference in the negative beliefs about uncontrollability and danger subscale (MCQ – 30), the Parent Trust, the Parent Communication and the Parent Alienation subscales (IPPA – Parent) compared to "not at risk for alcohol abuse" group. This result highlights that adolescents with a metacognitive style based on negative metacognitions may be more likely to develop BD. Furthermore, a correlation between the alcohol abuse risk and an insecure attachment style towards parents emerges. The present study suggests the need for interventions focused on metacognition or family interventions focused on communication in adolescents at risk.
Keywords: Binge Drinking; Attachment style; Metacognition.

RIASSUNTO

Il Binge Drinking (BD) è un fenomeno attuale che ha un forte impatto sanitario ed economico a livello mondiale. Nella popolazione tra i 15 ed i 29 anni, sono stati stimati 2.5 milioni di casi di morte. Studi precedenti hanno evidenziato il ruolo delle metacognizioni e dell'attaccamento insicuro nello sviluppo di disturbi psicopatologici. Lo studio si propone di verificare se vi sia una correlazione tra la presenza di credenze metacognitive e uno stile di attaccamento insicuro con il rischio di abuso di alcol. Il campione è composto da 206 studenti tra 14-17 anni. Ciascun partecipante ha compilato i seguenti questionari: *The Metacognition Questionnaire – 30 (MCQ-30); Inventory of Parent Attachment (IPPA - Parent)*; *Inventory of Peer Attachment (IPPA - Peer)*; *Alcohol Use Disorders Identification Test (AUDIT – 10)*. Il risultato principale del presente studio mostra che il gruppo "a rischio di abuso di alcol" presenta una differenza significativa nella sottoscala delle credenze negative sull'incontrollabilità e la pericolosità dei pensieri (MCQ-30), nella Fiducia, nella Comunicazione e nella Alienazione con i genitori (IPPA – Parent) rispetto al gruppo "non a rischio di abuso di alcol". Ciò suggerisce che gli adolescenti con uno stile metacognitivo basato su metacredenze negative potrebbero essere maggiormente inclini a sviluppare BD. Inoltre, è emersa una correlazione tra il rischio di abuso di alcol e uno stile di attaccamento insicuro verso i genitori. Il presente studio indica la necessità di interventi focalizzati sulla metacognizione o interventi familiari focalizzati sulla comunicazione in adolescenti a rischio.
Parole chiave: Binge Drinking; Stile di Attaccamento; Metacognizione.

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Introduction

Alcohol abuse is a wide and important international problem with both sanitary and economic consequences (Piacentino & Girardi, 2016).

The 2.5 million of death cases per year, that have been estimated as directly attributed to alcohol consumption and the 9% of the deaths was among 15 to 29 years old people (World Health Organization, 2011).

Particularly, the alcohol consumption among young people represents one of the biggest worries of public health (Jernigan et al., 2016). Alcohol results to be the most used substance by the students, who report a recurring consumption of five or more ongoing drinks for at least one time in the last two weeks (Johnston et al., 2013).

The behavior pattern, related to young people that frequently drink a lot of alcohol in relative brief periods of time, is defined "Binge Drinking" (BD) (Donath et al., 2011; Karagülle et al., 2010; Kraus et al., 2009; Stolle et al.,2009). In accordance with the National Institute on Alcohol Abuse and Alcoholism guidelines (NIAA), BD consists in the consumption of five or more drinks in the same occasion by males and four or more by females for at least one time in the last two weeks (National Institute of Alcohol Abuse and Alcoholism, 2004).

Binge Drinking seems to be more common between ages of 16-30. In most countries the prevalence and average frequency highlighted a beginning in young age and a peak in young adulthood (Kuntsche & Gmel, 2013).

According to the gender differences in alcohol abuse, data are controversial. In Italy, in 2015 Binge Drinking phenomenon has been reported by 10.8% of men and 3.1% of women older than 11 years, identifying over 3.700.000 binge drinkers older than 10 (Relazione Ministero della Salute, 2016). Internationally, previous studies showed that girls start drinking earlier and more than their peer males and have more binge drinking behaviors (Keyes et al., 2008; Keyes et al., 2010). Moreover, females tend to experience more psychosocial and health consequences of alcohol abuse compared to males (Nolen-Hoeksema e al., 2004; Laghi et al., 2012). Differently, recent studies reported a greater binge drinking prevalence in adolescent boys in comparison with girls (Chung et al., 2018; Laghi et al., 2015). In addition, the review of Chung et al. (2018) showed a higher rate of binge drinking in European countries and Australia compare to United States, underlining a possible underestimation of the phenomenon because of the different threshold used by the cited surveys in detecting binge drinking in adolescents.

Such alcoholic behavior involves harmful consequences for the brain functions and neuropsychological performances (Hingson et al., 2006; Lenroot & Giedd, 2006; Luna & Sweeney, 2004; Spear, 2000) and interferes with the cognitive, emotional and social development of adolescents (Brown et al., 2000; Brown & Tapert, 2004; Davies, 2013; Medina et al., 2007; Tapert et al., 2003; World Health Organization, 2014).

About the psychological consequences of Binge Drinking, it has been demonstrated that it can influence mood and memory (American Medical Association. 2010; Caldwell et al., 2005; Nagel et al., 2005), and it can affect mental health in the long term (Piacentino & Girardi, 2016). It has also been reported that a prolonged use of alcohol affects the brain structures, implicating a reduction of the hippocampus, the white substance and of the prefrontal lobe cortical thickness (American Medical Association. 2010; Jacobus et al., 2013).

More recent studies were focused on the reasons that encourage young people to approach alcohol.

Between these reasons there are the so-called "drinking motives" that are considered as a determinant factor in Binge Drinking behaviors (Damme et al., 2013; LaBrie et.al., 2011; Patrick et al., 2011); they seem to predict the alcohol-related consequences (Merrill et al., 2014).

According to literature on drinking motives, social aims are the most cited reasons related to alcohol consume in adolescents. Laghi and colleagues (2015) showed that adolescent males drank to intensify the positive effect of alcohol and to conform themselves with their peer group; similarly, Carrus et al. (2016) highlighted the role of social motives as predictors of alcohol consume among adolescents. Finally, Kuntsche et al. (2013) found that most of adolescents drink for social or enhancement reasons in the sense of enjoyment.

To better understand the causes of alcohol-abuse between the students, the researchers studied the role of expectations on alcohol ("*after alcohol I expect X*") (Scott et al., 2012), among which the positive ones ("*drinking will help me relax*") are these which predict a greater consumption (Leigh & Stacy, 2004; Jones, 2004; Scott-Scheldon et al., 2012).

Besides, other forms of expectations are the metacognitions about alcohol. The term "Metacognition" refers to the general ability of a person "thinking about thinking" and so to understand and manage mental states (desires, intentions, emotions) both personal and others (Feurer, 2015). According to metacognition model of Wells (2000), metacognition is a main factor in the development and maintenance of psychological disorders. The metacognition model is based on the theory that each individual has positive and negative beliefs about thinking which have an influence on own appraisal of the events and on the strategies, they use to regulate feelings and thoughts. The positive beliefs are related to the benefit of rumination and worry (eg. "worrying about the future helps me be prepared"), whilst negative beliefs are related to the uncontrollability and danger of thoughts (eg. "I need to control thoughts"). The associated coping strategies could be for example the attempts to control, suppress or avoid thoughts (Wells & Cartwright-Hatton, 2004).

As regard the metacognitions about alcohol, these are involved in the unregulated use of this substance (Clark et al., 2012; Gierski et al., 2015); in particular, the positive beliefs on alcohol refer to those thoughts about alcohol consumption as a cognitive and emotional regulator ("*drinking helps me get my mood better*"); on the contrary the negative ones refer to loss of control on drinking and the consequences on the related cognitive functioning ("*keep drinking will damage my mind*") (Spada & Wells, 2006; 2010). Specifically, Spada et al (2006) found that alcohol dependent drinkers had higher score in positive beliefs about alcohol as an emotional regulator, compared to non-drinkers, highlighting the main role of the positive metacognitions in persevering in harmful alcohol use. Similarly, Ipek et al., (2015) showed that patients with alcohol and substance dependence had significantly higher scores in positive beliefs than control group, reinforcing the concept.

Metacognition involves the models of attachment; a safe attachment has a key role in the development of the mental representations and social interactions, while childhood trauma-based experiences related to caregivers, can predict psychopathological disorders in adult age (Fonagy, 2010). An insecure attachment to parents and unsupportive family are related with alcohol use by young teenagers (Bahr & Hoffman, 2010; Danielsson et al., 2011; Habib et al., 2010; Labrie & Sessoms, 2012; Laghi et al., 2012; Moore and Segrott, 2010; Reis et al., 2012; Zeinali et al., 2011).

Recent studies have investigated the metacognitive abilities in association with impairments due to substances abuse in adult age, where it has been found a weak ability in regulating the personal mental states (Inchausti et al., 2016; Wasmuth et al., 2015). Good metacognitive abilities seem to be protective factors for risky behaviors (Lysaker et al., 2013).

The general aim of the present study is to evaluate whether the risk of alcohol abuse could be associated with specifics metacognitive beliefs, and with different pattern of attachment to parents and peers in a group of Italian adolescents. The hypothesis is that the "at risk of alcohol abuse" group will show a greater presence of negative metacognitive beliefs, confirming similar studies on clinical population (Spada, Caselli, & Wells, 2009), and an insecure pattern of attachment towards parents and peer compared to the "not at risk" group, in order to shed a new light on the inconsistent results present in literature (Crawford, & Novak, 2002; Van der Vorst, Engels, Meeus, & Deković, 2006).

Methods

Participants. The study has been conducted on a students' group from an Italian high school for Human Sciences. The inclusion criterion contemplated an age between 14 and 17 years. The exclusion criterions concerned: specific developmental disorders, mental retard, age higher than 17 years and eventual physical or mental disabilities. The students were 220. Fourteen of them were excluded because they were older than the chosen age. The final sample resulted to be made of 206 students, of which 170 were females and 36 were males with a mean age of 15.5 (SD = 1.0). The study has been approved by the Ethics Committee of the Dynamic and Clinical Psychology Department, Sapienza University of Rome (Italy). An informed consent form has been given to every participant and for minor participants the informed consent has been signed by both the parents. The questionnaire administration occurred during the break-time between the curricular lessons' execution.

Measures

The Metacognition Questionnaire - 30 (*MCQ-30*; Wells & Cartwright-Hatton, 2004) is a self-report questionnaire that investigates different metacognitive beliefs, based on 30 items placed on a Likert scale with 4 points and 5 subscales: positive beliefs about worry in different situations, negative beliefs about uncontrollability and the danger of thoughts, cognitive self-consciousness of personal thoughts and the thought's processes, need to control thoughts and cognitive confidence in personal cognitive abilities (Wells & Cartwright-Hatton. 2004). The Italian version of the MCQ-30 showed a good to excellent internal consistency with a Cronbach's alpha ranged from .71 to .87 (Quattropani et al., 2014);

Inventory of Parent Attachment (IPPA - Parent) is a self-report questionnaire that investigates the attachment to parents, made of 28 items placed on a Likert scale with 5 points and 3 subscales: Trust, Communication, Alienation (Armsden & Greenberg. 1987; Baiocco et al., 2009; Ronconi. 2005; San Martini & Zavattini. 2004);

Inventory of Peer Attachment (IPPA - Peer) is a self-report questionnaire that investigates the attachment to peer, made of 25 items placed on a Likert scale with 5 points and 3 subscales: Trust, Communication and Alienation (Armsden & Greenberg. 1987; Baiocco et al., 2009; Ronconi. 2005; San Martini & Zavattini. 2004). The Italian version of the IPPA – Parent and Peer has been used in a number of studies, and its reliability and validity have been shown to be satisfactory (Laghi et al., 2009; Tambelli et al., 2012). The Cronbach's alpha for the subscales was shown to range from .72 to .92 and test-retest reliability was .93 for parent attachment and .86 for peer attachment (Guarnieri et al., 2010);

Alcohol Use Disorders Identification Test (AUDIT - 10) is a self-report questionnaire that investigates the behaviors at risk related to alcohol use made of 10 items (Babor et al., 1992; 2001). As reported by Cortés-Tomàs and colleagues (2017), a cut-off ≥ 8 showed 86% of Sensitivity and 45% of Specificity in detecting binge drinking in a sample of school students. The internal consistency (Cronbach's alpha) of AUDIT in a sample of students was 0.75, by domain, the sub-scale high-risk consumption yielded a value of 0.83, with 0.79 obtained for dependence symptoms and 0.75 for hazardous consumption (Bazzo et al., 2015; García Carretero et al., 2016).

Data analysis

In order to detect the risk for alcohol abuse, the dichotomous "at risk/not at risk" variable has been added, basing on the scores obtained by the subjects (≥ 8 = "at risk for alcohol abuse" according to Cortés-Tomàs et al., 2017).

In order to explore gender and age differences on the risk for alcohol abuse, preliminary analyses (Chi-square) have been performed. In order to compute the Chi-square, the range of age was grouped in two categories: "young adolescent" (14 and 15 years) and "adolescent" (16 and 17 years).

A multivariate analysis of variance (MANOVA) has been executed with the dichotomous risk for alcohol abuse ("at risk"/"not at risk") as between-group variable and the subscales of the Metacognition Questionnaire – 30 as within-group variables; a second multivariate analysis of variance (MANOVA) with the dichotomous risk for alcohol abuse ("at risk"/"not at risk") as between-group variable and the IPPA - Parent and IPPA - Peer subscales as within-group variables has been performed; their effect size has been calculated.

A correlational analysis between age, gender, the Metacognition Questionnaire subscales, the IPPA - Parent and IPPA - Peer subscales, the dichotomous risk for alcohol abuse ("at risk"/"not at risk") has been executed.

Logistic regression analyses for Gender and Age predicting the risk for alcohol abuse; for subscales of Metacognition Questionnaire-30 (MCQ-30) predicting the risk for alcohol abuse; and for subscales of Inventory of Parents attachment (IPPA) predicting the risk for alcohol abuse have been performed. Since the IPPA subscales for Peer attachment did not show significant correlations with risk for alcohol abuse, they were not entered in the logistic regression analyses. The analysis has been executed by using the Statistic Software Version 10.

Results

In Table 1 we report descriptive statistics and Cronbach's alpha for study variables.

Table 1. Descriptive statistics and Cronbach's alpha for study variables (N= 206)

Dimensions	Mean	SD	Alpha
MCQ-30 Positive beliefs about worry	12.61	4.13	.82
MCQ-30 Negative beliefs about uncontrollability and danger	12.35	4.04	.77
MCQ-30 Cognitive Confidence	10.86	3.95	.82
MCQ-30 Need to control thoughts	12.96	3.44	.66
MCQ-30 Cognitive self - consciousness	17.45	2.78	.57
IPPA-Parent Trust	38.90	8.24	.89
IPPA-Parent Communication	34.47	8.43	.68
IPPA-Parent Alienation	20.07	7.23	.84
IPPA-Peer Trust	38.91	6.20	.82
IPPA-Peer Communication	29.01	6.50	.87
IPPA-Peer Alienation	15.57	4.39	.64
Audit-C	3.57	4.47	.84

As repoted in table 2, there were statistical significantly gender differences on the risk for alcohol abuse, while there were not significantly differences of the age on the alcohol abuse risk (Chi-square=2.57; p=ns).

Table 2. Chi-square (χ^2) values applied to the risk for alcohol abuse related to gender

Variable	Gender		O - E	Chi-Square	df
	Males	Females			
Young adolescent "at risk"	2	7	-5		
Young adolescent "not risk"	13	76	-63	106.62***	3
Adolescent "at risk"	5	10	-5		
Adolescent "not risk"	16	77	-61		
Sum	36	170	-134		

Note. ***= $p \leq .001$. "Young adolescent" = 14-15 years; "Adolescent" = 16-17 years.

Table 3 shows a significant difference between the "At risk for alcohol abuse" (n=24) vs "Not at risk for alcohol abuse" (n=182) in the negative beliefs about uncontrollability and danger subscale (MCQ – 30).

Table 3. Multivariate analysis of variance between dichotomous risk for alcohol abuse ("At risk"/"Not a risk") and subscales of Metacognition Questionnaire-30 (MCQ-30)

					Wilks =.96; η^2=.0380			
	"At risk" n=24		"Not a risk" n=182		F (1,58)	*p* (.167)	"At risk"	"Not a risk"
	M	SD	M	SD			95% CI: n to n	
MCQ-30 Positive beliefs about worry	12.9	4.4	12.6	4.1	.15	.6964	11.05-14.78	12-13.16
MCQ-30 Negative beliefs about uncontrollability and danger	14.4	4.9	12.1	3.8	6.99*	.0088*	12.3-16.44	11.52-12.65
MCQ-30 Cognitive Confidence	11.4	4.7	10.8	3.9	.53	.4678	9.45-13.38	10.23-11.35
MCQ-30 Need to control thoughts	14.2	4.0	12.8	3.3	3.37	.0676	12.46-15.88	12.31-13.29
MCQ-30 Cognitive self - consciousness	17.8	2.9	17.4	2.8	.51	.476	16.6-19.08	17-17.8

Note. *$p \leq .05$.

Table 4 reports a significant difference between the "At risk for alcohol abuse" compared to "Not at risk for alcohol abuse" in the Parent Trust, the Parent Communication and the Parent Alienation subscales (IPPA – Parent).

Table 4. Multivariate analysis of variance between dichotomous risk for alcohol abuse ("At risk"/"Not a risk") and subscales of Inventory of Parents and Peer attachment (IPPA)

							Wilks =.87; η^2=.131	
	"At risk" n=24		"Not a risk" n=182		F (4,98)	*P* (.00009)	"At risk"	"Not a risk"
	M	SD	M	SD			95% CI: n to n	
IPPA-Parent Trust	31.5	8.7	39.9	7.7	24.45*	.0000*	27.82-35.18	38.75-41
IPPA-Parent Communication	27.4	7.7	35.4	8.1	21.11*	.0000*	24.14-30.61	34.22-36.58
IPPA-Parent Alienation	23.8	7.5	19.6	7.1	7.43*	.007*	20.62-27	18.54-20.61
IPPA-Peer Trust	39.2	5.9	38.9	6.2	.06	.8043	36.7-41.72	38-39.79
IPPA-Peer Communication	29.8	6.0	28.9	6.6	.43	.5128	27.3-32.36	27.94-29.87
IPPA-Peer Alienation	15.9	3.7	15.5	4.5	.13	.7209	14.3-17.45	14.9-16.19

Note. *$p \leq .05$.

Table 5. Correlational analyses (Pearson's r) between psychological variables

	Gender	Age	Risk for alcohol abuse
	Pearson r		
MCQ-30 Positive beliefs about worry	-.0026	.0319	.0273
MCQ-30 Negative beliefs about uncontrollability and danger	-.0246	-.0218	.1820**
MCQ-30 Cognitive Confidence	-.0457	.0893	.0509
MCQ-30 Need to control thoughts	.1207	.0028	.1276
MCQ-30 Cognitive self - consciousness	.0679	-.0819	.0499
IPPA-Parent Trust	.1019	-.1054	-.3271***
IPPA-Parent Communication	-.0407	-.1654*	-.3063***
IPPA-Parent Alienation	-.1018	-.0140	.1875**
IPPA-Peer Trust	-.1237	-.1354	.0174
IPPA-Peer Communication	-.2258***	-.2092**	.0459
IPPA-Peer Alienation	-.0018	.0393	.0250

Table 5 shows the correlation between the MCQ - 30 subscales and the IPPA – Parent and IPPA - Peer subscales, with the dichotomous risk for alcohol abuse. Particularly, the risk for alcohol abuse is positively correlated with the negative beliefs about uncontrollability and danger, and with Parent Alienation, and negatively correlated with Parent Trust and Parent Communication. Finally, there is a negative correlation between age and Parent and Peer Communication, and between gender and Peer Communication.

Table 6. Summary of Logistic Regression Analysis (Logit) for Gender and Age predicting the risk for alcohol abuse (n = 206)

Dependent variable = dichotomous "risk for alcohol abuse"			
Model: Loss = Max likelihood; Final loss = 73,45; Chi-square = 1,3816; *p*=.50117			
Parameter	df	Estimate	Odds ratio
Gender	2	-.06	.94
Age	2	.25	1.28
Constant		-5.18	.006

Table 7. Summary of Logistic Regression Analysis (Logit) for subscales of Metacognition Questionnaire-30 (MCQ-30) predicting the risk for alcohol abuse (n = 206)

Dependent variable = dichotomous "risk for alcohol abuse"			
Model: Loss = Max likelihood; Final loss = 70,41; Chi-square = 7,4638; *p*=.18840			
Parameter	df	Estimate	Odds ratio
MCQ-30 Positive beliefs about worry	5	.008	1.008
MCQ-30 Negative beliefs about uncontrollability and danger	5	.121	1.128
MCQ-30 Cognitive Confidence	5	-.011	.989
MCQ-30 Need to control thoughts	5	.037	1.038
MCQ-30 Cognitive self - consciousness	5	.062	1.064
Constant		-5.18	.006

Table 8. Summary of Logistic Regression Analysis (Logit) for subscales of Inventory of Parents attachment (IPPA) predicting the risk for alcohol abuse (n = 206)

Dependent variable = dichotomous "risk for alcohol abuse" (Yes/No)			
Model: Loss = Max likelihood; Final loss = 63,06; Chi-square = 22,168; *p*=.00006			
Parameter	df	Estimate	Odds ratio
IPPA-Parent Trust	3	-.07	.93
IPPA-Parent Communication	3	-.07	.94
IPPA-Parent Alienation	3	-.02	.98
Constant		3.09	22.08

Discussion and Conclusions

The first main result of the present study was that the "at risk for alcohol abuse" group shows a significant difference in the negative beliefs about uncontrollability and danger subscale (MCQ – 30) compared to "not at risk for alcohol abuse" group. It seems that an adolescent, who owns a metacognitive style that concerns negative beliefs about uncontrollability and danger of thoughts, would be more disposed to adopt behaviors at risk, like the alcohol use in the form of "alcoholic binges". Similarly, some previous studies demonstrated how the negative thought, often in association with the worry, would be related to depressive and anxious symptoms in adolescents (Ellis & Hudson, 2010; Esbjorn et al., 2014; Gould et al., 2010; McEvoy & Manohey, 2013; Rood et al., 2010), to nervous anorexia (Aloi, 2014; Davenport et al., 2015. Olstad et al., 2015), to problematic internet use (Marino et al., 2016; Spada & Marino. 2016) and to a high risk of consuming drugs (Hajloo et al., 2014). In particular, in the present study, the adolescents that were "at risk for alcohol abuse" also had higher scores on negative beliefs about uncontrollability and danger. It could be possible that the adolescents adopt drink abuse behaviors in order to reduce negative thoughts. However, in the present study the specific metacognitions on alcohol have not been investigated. In a previous study on drinking motives and alcohol-related metacognition, it has been reported that drinking behaviors may could be used to reduce negative affect and to handle the psychological distress of identity structuration and social inclusion, pivotal challenges of the adolescent period. Excessive alcohol assumption could be considered a way to answer with an inadequate coping to the developmental issues (Laghi et al. 2012).

The second important result of our study showed that the risk for alcohol abuse among adolescents is related to attachment to parents, but not to attachment to peers. Considering that the social role of binge drinking in the peer context has been widely reported (Laghi, et al. 2012; 2019), the present findings seem to be in contrast with this interpretation of alcohol abuse during adolescence. However, several studies demonstrated that an insecure attachment to parents, and a less supportive family, would be related to behaviors at risk, as the alcohol use among young people (Bahr & Hoffman, 2010; Labrie & Sessoms, 2012; Moore & Segrott, 2010; Zeinali et al., 2011), as the drug use (Iglesias et al., 2014; Schindler & Broning, 2015), and juvenile delinquency (Hoeve et al., 2012), or aggressiveness (Gallarin & Arbiol, 2012; Mikulincer et al., 2011; Savage, 2014). In a sample of 13- to 19-year-olds, has been reported that those who reported secure parental attachment consumed alcohol at lower rates than those who reported insecure attachment (Brennan and Shaver, 1995). Higher levels of parent-child communication have been found to negatively correlate with alcohol consumption, positive expectancies on alcohol use, binge drinking and its consequences (LaBrie & Cail, 2011; Turrisi, Jaccard, Taki, Dunnam, & Grimes, 2001; Turrisi, Mastroleo Mallett, Larimer, & Kilmer, 2007; Wood, Read, Mitchell, & Brand, 2004). Wood and colleagues (2004) reported that the quality of parental involvement may mediate the effect that peers have on the adolescent's alcohol use. Coherently, it has been found that the parental involvement and monitoring is associated with the social choices of the

adolescents, indirectly affecting other's perception and sensitivity to peer pressure. Studies attributed these finding to child internalization of perceived parent values (Abar and Turrisi, 2008).

In the present study, there were not age differences on the drinking behaviors, according to previous findings (Patrick & Terry-McElrath, 2019). Moreover, preliminary analyses suggested a significant difference of the gender in risk for alcohol abuse, particularly the female adolescents resulted as more disposed to drink compared to males. The present result sustains previous findings indicating that adolescent females were more likely to be classified as binge drinkers compared to males (Laghi et al., 2012). However, recent studies reported a higher rate of alcohol consumption and abuse among adolescent males (Chung et al., 2018; Laghi et al., 2015). As reported by Kiang and Harter (2006) females may be more sensitive to cultural and social pressures for experimenting with alcohol, resulting in an increased vulnerability for drinking behaviors, while adolescent males seem to drink to intensify the positive effect of alcohol (Carrus et al., 2016). Further studies are needed to evaluate the effect of gender in alcohol abuse.

Finally, in the present study, the adolescents at risk for alcohol abuse were about the 15% of the sample (28 "at risk" *vs.* 182 "not at risk"), indicating a low but alarming presence of this at-risk behavior among the Italian adolescent population. This distribution is in line with previous studies in the Italian context (Pinna et al., 2015; Laghi et al., 2012) and international panorama (Kuntsche & Gmel, 2013; Feldman et al., 1999). ISTAT data (2012) estimate of alcohol use in Italy is 7.463.000 people, involving adolescent and young adults (11-24 years old) (Luca et al., 2015). In international context Binge Drinking seems to be more common between ages of 16-30 (Kuntsche & Gmel, 2013). As reported by Fairman et al. (2019) adolescent binge drinking behaviors could predict the trajectories of alcohol consumption and abuse in early adulthood, with important consequences on individual and public health. Abuse of alcohol among adolescent population seems to be a growing social health issue, which should be the focus of future clinical interventions.

The present study highlights the importance of developing clinical interventions focused on cognitive restructuration of negative beliefs and, in order to prevent risky behaviors, on family interventions focused on communication. The main limitation of the present study is the selected sample that belongs only to a school of secondary grade and it is not representative of adolescents and young population.

Author Contributions

CL designed and executed the study and supervised all phases. LP and EB collaborated with the design and writing of the study. AM collaborated with the recruitment of the participants and with the data scoring. DS collaborated in the editing of the final manuscript. LP and GRP analyzed the data. GRP collaborated in the writing and editing of the final manuscript.

Compliance with Ethical Standards

Conflict of interest

The authors declare that they have no competing interests.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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