

UNIVERSITY OF LJUBLJANA
FACULTY OF EDUCATION
SOCIAL PEDAGOGY

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**RISK FACTORS FOR ALCOHOL USE AMONG SLOVENIAN
ADOLESCENTS**

Dejavniki tveganja za porabo alkohola med Slovenskimi adolescenti

Master thesis

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ABSTRACT

Background: Alcohol is one of the most commonly used substances among Slovenian adolescents. According to international studies, many individual and social factors may influence alcohol use at a young age, but little is known about these risk factors among Slovenian adolescents. The aim of this study was to examine risk factors for lifetime alcohol use among adolescents, investigating differences by socioeconomic status of the school area.

Methods: A cross-sectional study was conducted. Baseline self-reported data from 2946 12-14-year-old adolescents of 44 schools who participated in the evaluation of the Unplugged Prevention Program in Slovenia was used. Socio-demographic characteristics, parental and friends' alcohol use, parental permissiveness, parental monitoring, family climate, beliefs, self-esteem, and skills were studied as risk factors for alcohol use through quantitative analysis using multiple regression logistic models.

Results: Parental permissiveness to drink was the strongest risk factors for lifetime drinking followed by friends who drink. Socioeconomic status of the school area, age, gender, parental drinking, positive beliefs toward alcohol, self-esteem, decision-making skills, and refusal skills on alcohol were also associated with the risk of lifetime drinking. Differences by socioeconomic status of the school area were observed. Friends drinking, low self-esteem and low refusal skills were associated with lifetime drinking among adolescents of high SES schools, while parental drinking and parental permissiveness to drink had the strongest association with lifetime drinking among adolescents of low SES schools.

Conclusions: Prevention programs should address the identified factors to prevent early drinking initiation. Parental factors should be in focus for preventive program toward adolescents of low SES schools, while friends' factors should be in focus for preventive program toward adolescents of high SES schools.

KEYWORDS

Alcohol, adolescents, risk factors, socioeconomic status of the school area

IZVLEČEK

Uvod: Alkohol je ena od najbolj pogosto uporabljenih substanc med slovenskimi mladostniki. V skladu z mednarodnimi študijami lahko na uporabo alkohola v mladosti vplivajo številni individualni in družbeni dejavniki. A o teh dejavnikih tveganja med slovenskimi mladostniki je znanega le malo. Cilj te študije je bil preučiti dejavnike tveganja za vseživljenjsko uporabo alkohola med mladostniki, raziskovali smo razlike v socialno-ekonomskem statusu področja, kjer se nahaja šola.

Metoda: Izvedli smo presečno študijo. Uporabili smo samoporočane podatke 2946 mladostnikov, starih od 12 do 14 let iz 44 šol, ki so sodelovali pri vrednotenju šolskega preventivnega programa EU-Dap (»Izštekan«) v Sloveniji. Spomočjo kvantitativne analize in uporabe logističnih modelov multiple regresije smo preučevali dejavnike tveganja za uporabo alkohola, in sicer socialno-demografske značilnosti, uporabo alkohola s strani staršev in prijateljev, tolerantnost staršev, starševski nadzor, družinska klima, prepričanja, samopodoba in veščine.

Rezultati: Tolerantnost staršev do pitja je bil najmočnejši dejavnik tveganja za vseživljenjsko pitje alkohola, drugi najmočnejši dejavnik pa so bili prijatelji, ki pijejo. Socialno-ekonomski status šolskega področja, starost, spol, pitje staršev, pozitivna prepričanja o alkoholu, samospoštovanje, veščine odločanja in zmožnost zavrnitve alkohola so bili prav tako povezani s tveganjem za vseživljenjsko pitje. Raziskali smo razlike v socialno-ekonomskem statusu. Pitje prijateljev, nizko samospoštovanje in nizka zmožnost zavrnitve so bili povezani z vseživljenjskim pitjem med mladostniki z visokim socialno-ekonomskim statusom, medtem ko sta bila pitje staršev in toleranca staršev do pitja najmočnejše povezana z vseživljenjskim popivanjem med mladostniki z nizkim socialno-ekonomskim statusom.

Sklep: Preventivni programi bi morali upoštevati identificirane dejavnike, da bi preprečili zgodnji začetek pitja. Preventivni program za mladostnike z nizkim socialno-ekonomskim statusom bi se moral osredotočiti na dejavnike, povezane s starši, medtem ko bi se moral preventivni program za mladostnike z visokim socialno-ekonomskim statusom osredotočiti na dejavnike, povezane s prijatelji.

KLJUČNE BESEDE:

alkohol, mladostniki, dejavniki tveganja, socialno-ekonomski status šolskega področja

TABLE OF CONTENTS

I Introduction.....	1
II Theoretical part.....	2
1. Adolescence.....	2
2. Theories about risk factors and unhealthy behaviors	3
2.1. Social learning theory	3
2.2. Problem behaviour theory.....	5
2.3. Social norm theory.....	7
2.4. Planned behaviour theory	8
3. Risk factors for risk behaviours.....	10
4. Alcohol use among adolescents.....	13
4.1. Prevalence of alcohol use in the USA and Europe	13
4.2. Prevalence of alcohol use in Slovenia	14
4.3. Alcohol culture in europe and Slovenia.....	15
4.4. Availability of alcohol	15
5. Risk factors for adolescent alcohol use	16
5.1. Social risk factors.....	16
5.1.1. Parents and family.....	16
5.1.2. Peers and friends	17
5.2. Intrapersonal/individual risk factors	18
5.3. Age and gender as a risk factor.....	19
6. Consequences of adolescent alcohol use	20
6.1. Consequences of adolescent alcohol use in Slovenia	21
7. Socioeconomic status differences in alcohol use.....	22
7.1. Determinants of health.....	22
7.2. Family stress model and investment model.....	23

7.3. Socioeconomic status and adolescent alcohol use	24
III Empirical part	26
8. Reasons for the present study	26
8.1. Research objectives	27
9. Hypothesis	27
10. Research methods	28
10.1. Sample	28
10.2. Data collection procedure and research instrument	29
10.3. Measures	30
10.4. Statistical analysis	32
11. Results	33
11.1. Results of descriptive analysis	33
11.1.1. Socio-demographic characteristics	33
11.1.2. Alcohol use during the lifetime, last 12 months and last 30 days	34
11.1.3. Lifetime alcohol use by gender	35
11.1.4. Lifetime alcohol use by age	36
11.1.5. Alcohol use among friends and parents	37
11.1.6. Parental permissiveness to drink alcohol	38
11.1.7. Parental monitoring	399
11.1.8. Family climate	39
11.1.9. Beliefs toward alcohol use	41
11.1.10. Self-esteem	42
11.1.11. Decision-making and refusal skills	43
11.2. Results of chi squared (x^2) and bivariate logistic regression analyses	45
11.2.1. Socio-demographic characteristics	45
11.2.2. Friends drinking	46
11.2.3. Family and parents	47

11.2.4. Personal skills.....	48
11.3. Results of multivariate logistic regression analysis	49
11.3.1. Results of stratification by socioeconomic status of the school area	51
IV Discussion	53
V Conclusion.....	62
VI Literature	65
VII Additional document (EU-Dap survey).....	74

LIST OF TABLES

Table 1. Socio-demographic characteristics: results of descriptive analysis	33
Table 2. Alcohol use among friends by gender and age: results of descriptive analysis	37
Table 3. Alcohol use among parents by gender and age: results of descriptive analysis.....	37
Table 4. Parental permissiveness to drink alcohol by gender and age: results of descriptive analysis	38
Table 5. Parental monitoring by gender and age: results of descriptive analysis	39
Table 6. Negative and positive family climate by gender and age: results of descriptive analysis	40
Table 7. Negative and positive beliefs toward alcohol use by gender and age: results of descriptive analysis	41
Table 8. Negative and positive self-esteem by gender and age: results of descriptive analysis	42
Table 9. Decision-making and refusal skills by gender and age: results of descriptive analysis	44
Table 10. Socio-demographic characteristics of lifetime drinking vs never drinking: results of bivariate analysis	45
Table 11. Friends drinking of lifetime drinking vs never drinking: results of bivariate analysis	46
Table 12. Parental drinking, parental permissiveness to drink, parental monitoring and family climate of lifetime drinking vs never drinking: results of bivariate analysis	47
Table 13. Beliefs toward alcohol, self-esteem, decision-making skills and refusal skills on alcohol of lifetime drinking vs never drinking: results of bivariate analysis	48
Table 14. Risk factors associated with lifetime alcohol drinking: results of multivariate logistic regression analysis.....	50
Table 15. Stratification by socioeconomic status of the school area: results of multivariate logistic regression analysis.....	52

LIST OF FIGURES

Figure 1. Triadic reciprocal determinism	4
Figure 2. Theory of planned behaviour	8
Figure 3. Lifetime alcohol use among boys and girls: 25-EUcountry trend 1995-2015.....	13
Figure 4. Lifetime alcohol use in Slovenia: 1995-2015	14
Figure 5. Deaths caused by alcohol consumption in Slovenia	21
Figure 6. Determinants of health.....	22
Figure 7. Family stress model in parent-child relationship.....	23
Figure 8. Alcohol use among adolescents: results of descriptive analysis.....	34
Figure 9. Lifetime alcohol use among boys and girls: results of descriptive analysis.....	35
Figure 10. Alcohol use among different age groups: results of descriptive analysis.....	36

LIST OF ABBREVIATIONS

CI	Confidence interval
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ESPAD	European School Survey Project on Alcohol and Other Drugs
EU-Dap	European Drug Addiction Prevention Trial
FAS	Family Affluence Status
FSM	Family stress model
HBSC	Health behaviour in school-aged children
IM	Investment model
MTF	Monitoring the Future
OR	Odds Ratios
PBT	Problem-behaviour theory
SES	Socio-economic status
WHO	World health organization

I INTRODUCTION

Alcohol use is a great public health problem (Anderson and Baumberg, 2006). Adolescents are vulnerable during their transition from childhood to adulthood and it is very easy to influence their attitudes, beliefs, and behaviour toward risk behaviours (Jessor, 1990; Tomori, 1998). Today, parents spend a lot of their time working and less with their children. In order to make sufficient money to assure commodity for their family, they may be less able to monitor their children's activities (Hemovich, 2011). It is normal that children, with the entrance in adolescence, turn to their friends with whom they spend most of their leisure time and explore the external world (Schinke, Botvin and Orlandi, 1991). Although parental monitoring decreases with the child's age increment, it is important that parents continue monitoring their children's activities as a way of protection against involvement in risky behaviours. It is well known that early onset of alcohol use leads to greater problems in future (Hawkings, Catalano and Miller, 1992). That is why it is important to work on prevention of alcohol use among adolescents or try to delay alcohol initiation. Consequences provoked by alcohol use are very serious and may lead to various diseases, hospitalisation, imprisonment, and increased risk of premature death (Anderson, 2006; Lovrečič, 2016; Palmer, 2009; Stueve, 2005; Swahn, 2004; Wells, 2004). It is very important to raise awareness of alcohol use in adolescence and promote healthy activities and protective behaviours. Many adolescents may use alcohol because they consider it as the best way of having fun with their friends. In order to be able to change their opinion, we have to work on promoting a healthy lifestyle and offer alternative activities which can be fun as well as healthy.

As Slovenia exceeds drinking average in Europe (ESPAD, 2015), it was interesting for me to find out why Slovenian adolescents use alcohol, especially because I have found less Slovenian studies on the relation between risk factors and adolescent drinking.

The thesis tries to fill the gap in the literature and to understand which factors lead to alcohol use among Slovenian adolescents. The results of this study may help the future preventive programs to be more effective in the prevention of unhealthy behaviours among adolescents.

The thesis starts with the presentation of theoretical and empirical literature which explains the seriousness of adolescents' involvement in alcohol behaviour. In the next section, the methodology with objectives, hypothesis, data sample, performed statistical analysis, and variables used in the study are discussed. Furthermore, the section focuses on descriptive, bivariate and multivariate results of the study. Finally, the closing part consists of discussion and conclusion of the findings.

II THEORETICAL PART

1. ADOLESCENCE

Adolescence represents a period of development and change that occurs during the transition from childhood to adulthood. Besides psychological and physical changes, adolescents progress toward development of their independency, identity and skills needed to become the part of adult world (WHO, Adolescent Development). Although adolescence is a period of growth, it is also a period of vulnerability to social influences (Tomori, Stergar, Pinter, Rus Makovec and Stikovič, 1998).

Adolescents has to face some challenges and acquire some skills for their development: 1) accept physical changes and control sexual drive; 2) achieve independence from parents and establish their own social behaviour; 3) establish social contacts with peers and self-confidence; 4) develop a personal set of values and coordinate it with personal behaviour; 5) develop responsibility for school and future; 6) prepare themselves to select profession and develop further plans for future in social and occupational sense. All of previous mentioned characteristics are prerequisites for establishment of individual and social identity (Holler and Hurrelmann, 1990). Social environment which includes parents and peers is extremely important for the process of development and socialization (Holler and Hurrelmann, 1990). Adolescence is crucial for shaping of health and later life. As adolescence is a period of experimentation and learning, various healthy and unhealthy behaviours are learned in adolescence (Tomori et al, 1998). Moreover, many values and beliefs that may have influence on health and risk behaviours are shaped in adolescence (Jessor and Donovan, 1990).

Adolescents might be unaware of the connection between behaviour and its consequences, as well as unable to understand the level of the control they may have over their decision-making process which may make them especially vulnerable to risk behaviours such as substance use.

Many adolescents perceive their friends and peers to use alcohol and other psychoactive substances and feel pressured to imitate (Anderson, 2010; Innamorati, 2015; Obradors-Rial, 2014; Patrick, 2010; Simons-Morton, 2001; Song, 2012), which put them in considerable risk of negative consequences on future health and well-being. In order to avoid negative behavioural patterns such as substance use and future consequences, adults may have a significant role in prevention (WHO, Adolescent Development).

Adolescence is the appropriate time for health professionals such public health scientists and social pedagogues to minimize risk behaviours through enforcement of refusal, communication, decision-making skills and self-esteem which are considered to be protective factors (EMCDDA, 2008; DiClemente, 1996; Ramovš, 2011).

2. THEORIES ABOUT RISK FACTORS AND UNHEALTHY BEHAVIORS

Many theories have been advanced to explain substance use and some of them represent basis for the current study. These theories are:

- Social learning theory (Bandura, 1977) states that adolescents learn from people around them by the process of observing and modelling;
- Problem behaviour theory (Jessor and Jessor, 1977) states that personality, environment and behavioural system are consisted of factors which may act as risk or protection toward behaviour;
- Social norm theory (Berkowitz, 2003) states that misperception of the attitudes and behaviours of people around lead to the involvement in risk behaviours;
- Planned behaviour theory (Fishbein and Ajzen, 1975) states that subjective norms, beliefs and attitudes shape intentions which lead to risk behaviours.

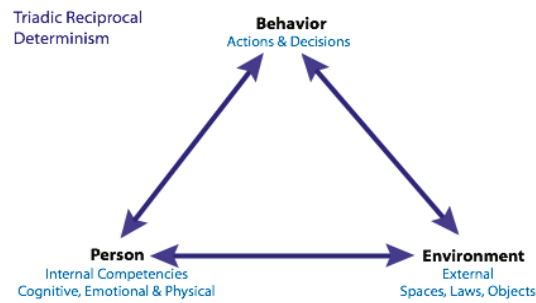
2.1. SOCIAL LEARNING THEORY

The theory implies that individuals learn through the process of modelling, observing and reinforcement. For example, exposure to the models who use substances is likely to influence adolescents through the observations of their actions and its consequences. Perceiving substance use as normal and socially acceptable makes adolescents susceptible to peers pressure and promote substance use through the establishment of normative beliefs. According to the theory, negative intentions toward substance use and being aware of its consequences reduces the likelihood of substance use among adolescents (Bandura, 1971; Bandura, 1977; Schinke, 1991).

Three determinants that reciprocally influence each other in the theory are environment (external spaces and laws), behaviour (one's actions and decision) and person (internal characteristics such as motivation, intelligence, self-control, beliefs which are part of cognitive, emotional and physical functioning) (Bandura, 1999).

The triangle (Figure 1) consists of three determinants (environment, behaviour and person) that show three concepts being influenced by each other. While environmental factors may influence one's behaviour and person, reverse path is also possible. Moreover, internal competencies may influence one's actions and decision, while the direction of influence may be reversed as well.

Figure 1. Triadic reciprocal determinism



Source: Muuss, R.E. (1996). Theories of adolescence. Chapter: The contribution of Albert Bandura's Social Cognitive Theory to an understanding of adolescence

Person – Behaviour: The structure of an organism affects which behaviours can and can't be conducted. These structures are in turn modified by behavioural efforts, e.g. self-control and dieting are behavioural efforts that can change biological structure.

Environment – Person: Socially assumed roles can become result of social environment as well as shapers of social environment, e.g. adolescents who have acquired social reputation of being tough and aggressive will have different reactions from the peers who are perceived as being shy.

Behaviour – Environment: Environmental influences are modified by behaviour and individual's actions, e.g. the effects of student's presentation in a classroom depends on his/her behaviour such as not attending class, paying attention but no participation, actively participating in discussion, making presentation etc. These students are not in the same environment, but shape the particular environment events by different actions. People are influenced by environment, and reciprocally, these environments are constructed differently by different people.

According to social learning theory, individuals learn from each other. Social influences are the primary tenet of theory and may take different forms, such as modelling, observing the model and imitation. Since the theory doesn't use developmental stages, it is more learning than developmental theory. Adolescents behave differently only to extent that social expectation, pressure, peer modelling and other factors assert influences on them.

Vicarious reinforcement does not depend on what observer does, but on positive and negative consequences that the subject observes in others or in model. Observing social models being rewarded for aggressive behaviour increases the likelihood of this behaviour in the observer. Observing what happens to other people as they behave in certain ways may have the same effectiveness as performing the same behaviour by ourselves. This happens because adolescents learn through the observation of others' performance of specific action or behaviour. If the imitation of the observed behaviour is reinforced, that behaviour will be learned in the observer (Muuss, 1996).

2.2. PROBLEM BEHAVIOUR THEORY

Problem behaviour theory focuses on the problems occurring during the adolescence, such as substance use. The theory explains the complex interaction of personal, behavioural and environmental factors. According to problem behaviour theory, adolescents engage in risk behaviours because these behaviours help them to achieve personal goals, to cope with a failure, rejection, low self-esteem and to be part of specific peer group (Schinke, 1991).

The theory consists of three major systems and these are personality system, perceived environmental system and behavioural system (Jessor, Donovan and Costa, 1991). These three systems have influence on occurrence or non-occurrence of certain behaviours. Variables from each system represent either instigations toward engagement in risk behaviour or controls against such behaviour that generate proneness indicating the probability of involvement in problem behaviour. Instigations and controls may be explained in the terms of risk and protective factors (Jessor and Jessor, 1977).

Although the primary emphasis is on personality, perceived environment and behaviour system, socio-environmental system is also of a great importance. Social Environmental System consists of:

- Socio-demographic structure variables are education, occupation, income (these three refers to socio-economic status) and religion. Low SES may lead to greater problem behaviours because of limited opportunities.
- Social context consists of important segments of youth adult life which involves family, work, friends and life events. This system is too distal from behaviour to have the same importance as the other systems.

Social Environment System variables refer to the more objective aspects of the social life and interactions. Socio-environmental system variables are antecedents of personality system and perceived environmental system variables.

Personality System consists of:

- Motivational Instigation Structure is oriented toward achievements and independence. A high value of independence and low value of achievement indicates problem behaviour proneness, while high value of achievement and low value of independence indicates conventional behaviour proneness.
- The variables in Personal Beliefs Structure include more distal variables such as social criticism, self-esteem and internal-external locus of control. The acceptance of social norms, values and practices implied by low social criticism, low alienation and high self-esteem suggests control against problem behaviour. Conversely, high social criticism, high alienation and low self-esteem indicate problem behaviour proneness.
- Personal Control Structure variables are more proximal and include attitudinal intolerance of deviance, religiosity and moral attitude. High intolerance of deviance

and religiosity represents direct control against engagement in problem behaviour. High moralistic attitude restrain engagement in problem behaviour.

The variables that constitute personality system proneness to problem behaviour are high value of independence, low value of achievement, low expectations for achievement and independence, high external control, low self-esteem, high social criticism, low moral attitude, high alienation, low attitudinal intolerance of deviance and low religiosity.

Perceived Environment System variables are classified into proximal and distal structures:

- Distal variables are parental controls, friends' controls, parents' vs friends' influence and perceived life stress. A perception of friends and parental control decrease the probability of engagement in problem behaviour. The friends vs parents influence variable also implicates control, with parental influence being more conventional. These variables are not directly linked to problem behaviour, but more through the causal chain.
- Proximal structure variables are directly related to problem behaviours and these are friends' problem behaviour approval and models, as well as friends' models for religiosity which makes them the strongest influence on problem behaviours than all other variables encompassed in all systems. While perceived approval and models for problem behaviour leads to engagement in problem behaviour, having the models for religiosity protect against involvement in problem behaviour.

Patterns being most problem behaviour oriented in both, proximal and distal structure are low parental controls, greater friends than parent influence, low friends controls, greater life-area stress, greater friends' approval and models for problem behaviour and to have less religiosity models. These variables represent aspects of the environment.

Behaviour System consists of two structures: problem behaviour structure (problematic alcohol use, smoking, marijuana, other illicit drug use, lying, stealing etc) and conventional behaviour structure (church attendance and academic performance). Risk for problem behaviour may be result of involvement in other problem behaviour, while protection against that behaviour derives from involvement in conventional behaviours. In order to explain specific problem behaviour (e.g. alcohol use), these two concepts are used through behavioural system. Proneness to problem behaviour, in this system, refers to high engagement in problem behaviour and low engagement in conventional behaviours.

There is a mutual and reciprocal relation between personality, perceived environmental and behavioural systems. Variables can be influenced by changes in other systems. Variations in both, personality and perceived environmental, systems account for variations in behavioural system. Adolescents' proneness to problem behaviour is determined by the balance of risk and protective factors between systems (Jessor, Donovan and Costa, 1990).

2.3. SOCIAL NORM THEORY

Social norms have a great influence on behaviours and decisions we make. Norms are conventional way of doing things that are accepted by the majority of population and may vary in different localities, depending on which social group person belongs to (Howe, 1989).

Social norm theory states that misperception of the attitudes and behaviours of people around them lead to the risk behaviours. According to this theory, people express certain behaviours because they want to conform to perceived norms. This is the reason why individuals act inconsistent with true beliefs and norms. Misperceptions lead to expressing unhealthy behaviour because they are perceived as accepted, and avoiding health behaviours because of perception that they are not accepted (Berkowitz, 2002; Berkowitz, 2003).

Adolescents' beliefs that risk behaviours are accepted by the peer group drag them toward greater involvement in these behaviours. In a case of alcohol or other substance use, perceiving the norms to be permissive can lead to increased substance use. The example of alcohol use research showed that adolescents overestimated alcohol use in their peers and friends. This overestimation motivates those who have already drunk to increase drinking quantity, as well as drinking initiation among non-drinkers. Heavy alcohol users believe in these misperceptions in order to justify their behaviour. In terms of alcohol use, statement of misperception can be addressed in the following way: "everybody drinks more because everybody thinks that everybody drinks more" (Berkowitz, 2002; Berkowitz, 2003).

In contrary, underestimation of peers' and friends' discomfort with specific behaviour may constrain individuals from showing their own negative opinion toward that behaviour. "Misperceptions are formed when individuals observe a minority of individuals engaging in visible problem behaviours and remember it more than responsible behaviour that is more common but less visible" (Berkowitz, 2005).

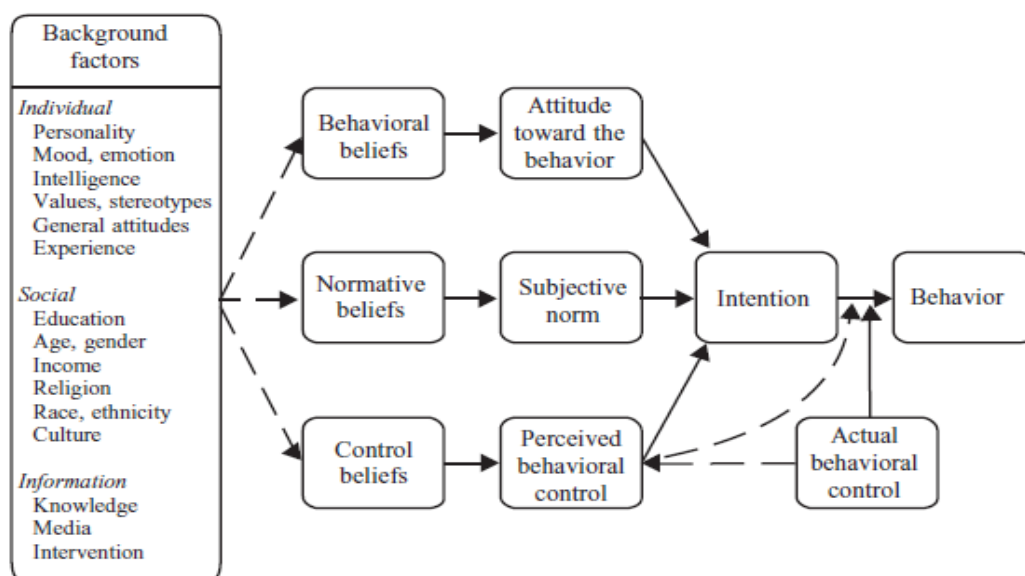
The theory attempts to correct misperceptions of social norms rather than change them.

2.4. PLANNED BEHAVIOUR THEORY

Intentions are antecedents of actual behaviour. People's behavioural intentions come from their beliefs about performing the behaviour. Beliefs are based on personal experience, observation or information received by other people. As beliefs are basis for developing attitudes and intentions to behave in a specific way they play an important part in determining behaviour. Various personal, cultural and situational factors shape beliefs from which attitudes, perceived behavioural control and subjective norms are formed (Ajzen and Fishbein, 2005). Attitudes refer to the perception of positive and negative outcomes of behaviour. Attitudes are way of thinking and believing and are acquired during the process of socialization. Adolescents' decision on drinking or not drinking and how often they will drink is influenced by attitudes. If adolescents perceive alcohol use as positive it is likely that they will have greater intentions toward drinking behaviour. The subjective norms depends on what people think the other people who are important in their life want them to do, e.g. adolescents think that their peers want them to drink alcohol and if they don't conform to their norms they believe they may be rejected by peer group. Perceived behavioural control refers to the perception of one's own ability to control certain behaviour. People are more likely to intend to perform certain behaviour if they believe that they can perform it successfully. After having attitudes, subjective norms and perceived behavioural control path proceeds through behavioural intentions, which is the only proximal antecedent of certain behaviour.

Various individual and social factors, as well as information received through the media and other sources are powerful basis for the formation of people's beliefs. Further, these beliefs form future attitudes toward certain behaviour, subjective norms and behavioural control, which have impact on intention to perform certain behaviour. These processes are well described in below scheme (Figure 2).

Figure 2. Theory of planned behaviour



Source: Ajzen, I. and Fishbein, M. (2005). The influence of attitudes on behaviour.

According to this theory, all human behaviour is intentional. Behavioural intentions are the proximal antecedents to action, which means that people don't do things they haven't planned before. Intentions are the results of decision making process that include evaluation of the actions and its possible consequences. Adolescent may decide that social and physiological effects of drinking are worth the costs and so decision of drinking is made. One another example is that children of parent who drink alcohol have opportunities to observe that behaviour and its consequences. During the later years, these children have time to think whether they want to drink or not. They are aware of costs and benefits of that behaviour and have taken this into account before taking the final decision of their behaviour. So, before the behaviour performance, adolescents have decided to do it or not to do it. These intentions are determined by subjective norms, attitudes and perceived behavioural control (Gibbons, Pomery and Gerrard, 2008).

To summarize, each of these four theories is of great importance for understanding one's behaviour. The theories have diverse approaches to explain behaviours. While the social learning theory described behaviour as being learned by the process of observation and imitation, the social norm theory highlighted the importance of social norms and learning through the establishment of normative concepts of behaviour. Furthermore, the problem behaviour theory was the most extensive because of the long list of protective and risk factors, or the so-called instigations toward behaviour and control against the behaviour. Finally, the planned behaviour theory suggested that all behaviours are intentional and a consequence of one's beliefs. Although the theories used different paths in an attempt to understand and describe human behaviour, their concepts are similar. The above-described theories found that behaviours may be influenced by social environment and by people surrounding them. While the social learning theory and the social norm theory are based on social influences, the problem behaviour theory and the planned behaviour theory included social influences partly. The planned behaviour theory highlighted the importance of subjective norms which has similarity with the social norm theory. Namely, both the social norm theory and the planned behaviour theory explained that adolescents conform to the group norms in order to avoid group rejection. So, for adolescents it is more important what people of their age think, believe, and how they behave than their personal beliefs which may be hidden. In adolescence, peers' and friends' norms may have greater importance for the adolescents than their parents' norms. The social learning theory was more oriented toward modeling of behaviour and its imitation. As parents are the closest role models for their children, it is expected that child observes and imitates their parents' behaviour. The problem arises when parental behaviour exerts a negative influence. Furthermore, the problem behaviour theory suggested that parents and friends have a direct influence on adolescents. The problem behaviour theory pointed out the importance of parents' and friends' permissiveness toward the certain behaviour, as well as friends' models for adolescents' behaviour similar to the social learning theory. This implies that social influences coming from the parents and the friends are of great importance for the adolescents' involvement in problem behaviours. Since socialisation is important for individuals, social influences may affect one's behaviour, either in a positive or a negative way.

3. RISK FACTORS FOR RISK BEHAVIOURS

Risk factors increase the likelihood of developing a disease, negative consequences or risk behaviours (WHO, 2002). Risk behaviours include all experimentations which deviate from the social acceptable norms and put individuals and their social environment in risk (Tomori et al, 1998). It is less likely that a single factor will be responsible for involvement in substance use or other risk behaviours. Rather, adolescent's involvement in risk behaviours is multiply determined (Newcomb, Maddahian and Bentler, 1986). The more the risk factors adolescents are exposed to, the greater the risk they will involve in risk behaviours.

Many authors theoretically described possible risk factors for risk behaviours among adolescent (Bandura, 1977; Berkowitz, 2003; Fishbein, 1975; Jessor, 1977). Further, many studies have empirically confirmed these associations.

Hawkings, Lishner and Catalano (1985) identified multiple risk factors for involvement in risk behaviours. They are separated into four groups of which the first ones are contextual factors. Changes in cultural norms and economic factors are associated with changes in risk behaviours and prevalence. Alcohol use is affected by taxes, prices and laws which impose age alcohol restrictions. With increases in taxes and legal restrictions on alcohol, decreases its consumption and related consequences. In contrast, laws and norms that express greater tolerance toward alcohol lead to greater alcohol consumption. Availability may depend on laws and social norms, but it is separate factor because some substances are not legal, but are available. The greater availability and social acceptance of alcohol the greater is the alcohol consumption. Further, economic deprivation (socio-economic disadvantage, poverty, overcrowding, poor housing, parental education and occupation) and neighbourhood disorganisation (high population density, high residential mobility, bad connection in neighbourhood, high rates of crime and illegal drug trafficking and criminal subculture) may led to involvement in risk behaviours. The second group is represented by intrapersonal or psycho-behavioural factors among which are aggressiveness, difficult temperament, attention-deficit disorders, academic failures (poor school performance and low commitment to school) and attitudes favourable toward substance use. The third group is represented by interpersonal factors which include family, school and peers. This group encompasses parental and other family member's substance use and attitudes (family modelling of substance use behaviours and positive parental attitudes toward substance use), poor family management (unclear expectations, poor monitoring, inconsistent rewards for positive behaviours and punishment for negative behaviours), frequent family conflicts and disruptive family environment, low bonding to family, substance use among peers and friends. Finally, fourth group are biogenetic factors represented by physiological factors and susceptibility to substance abuse (Hawkings, Catalano and Miller, 1992).

Botvin (1996) summarized risk factors which may increase the likelihood of substance use among youth into three broad categories (socio-cultural, social and personal factors). Socio-cultural or background factors refer to demographic (gender, age and social status), biological (sensation-seeking and temperament), cultural (ethnic identity) and environmental factors

(availability and neighbourhood disorganization) factors. Secondly, social factors include school (school bonding, school size and school climate), family (family management, discipline, monitoring, communication, parental positive attitudes toward substances and parental substance use), media (TV, movies, alcohol and substance advertising) and peer (friends' substance use and positive attitudes toward substances) influences. Finally, personal factors are represented by cognitive expectancies (attitudes, beliefs, normative expectations and knowledge), personal skills (decision-making, problem-solving, personal control, goal setting, conflict resolution and anger management), social skills (communication skills, assertive skills and refusal skills) and psychological factors (self-esteem, impulsivity and self-concept).

A combination of these factors may increase the risk of experimentation with substances at early age, but also lead to affiliation with deviant peers who reinforce positive attitudes toward substances and finally, lead to increased involvement in substance use (Botvin, 1996). Botvin (1996) in his work summarized the list of family risk factors for adolescent substance use among which are poor supervision of the child (failure to monitor and poor control over child's behaviour and activities), failure to promote positive moral development (modelling of antisocial behaviours), parent-child conflicts, poor parent-child relationship, rejection of the child and unsupportive behaviour, parental substance use and poor parental mental health.

Schinke, Botvin and Orlandi (1991) indicated development, peers, parents, media, psychological characteristics, attitudes and expectancies as potential factors that may precede the early onset of substance use. Developmental factors refer to adolescent's experimentation with various behaviours during the process of separation from parents, developing identity and independence and acquiring skills needed for entrance in the adult world. Some adolescents may engage in these behaviours as a way of laying claim to adult status, while some adolescents may engage in risk behaviour because of establishing solidarity with the particular peer group and developing their own identity and rebelling against parental authority. Peer factors are related to adolescent's desire for autonomy, independence and decreased reliance on parents. Parental influence begins to decline and peer influence begins to increase. Peers and friends may promote substance use. Increased dependence on peers is associated with the rise in conformity behaviour to peer group norms. Adolescents with a low self-esteem are more susceptible to group norms and conformity pressure. Parental factors include parental substance use which increases the likelihood of adolescent's substance use as a consequence of modelling process. Psychological characteristics refer to low self-esteem, low assertiveness and low self-control. Positive attitudes and beliefs toward substances increase the risk of engagement in substance use. Media refers to substance promotion via media which makes them popular and normative.

Newcomb (1995) studied early onset of substance use through a long-term prospective study. He chose 14 variables as possible risk or protective factors. According to his study, risk factors seem to be more environmentally embedded, while protective factors are more home, psychological and attitudinal related. Risk emerges from outside world, while protective factors are those within adolescents. Risk factors that emerged from his study are perceived

opportunity, community support, availability, perceived adult and peer substance use. Protective factors are self-acceptance and home relationship (Newcomb, 1995).

Tomori et al (1998) found that living in dysfunctional family, family conflicts, risk behaviours among peers, low engagement in school activities and poor school results, low self-esteem and impulsivity may increase probability for risk behaviours.

Igra and Irwin (1996) described bio-psycho-social model of risk taking behaviours. Biological factors involve male gender, hormonal influences and genetic predispositions. Psychological factors refer to sensation-seeking, depression, risk perception and low self-esteem. Socio-environmental factors consist of parenting style, parental modelling of risk behaviour, lack of parental supervision, peer approval of risk behaviour, peer risk behaviours and socio-economical status. Adolescent's vulnerability to risk behaviours may be influenced by factors such as substance use, school transitions, family conflicts and peer initiation of risky behaviours.

Many risk factors are inter-correlated, the reduction of one risk behaviour may attenuate the involvement in other risk behaviour, e.g. higher commitment to school may trigger involvement with non-substance-using peers (Windle, Shope and Bukstein, 1996).

In summary, many factors may precede to adolescent's involvement in risk behaviours. Above described studies identified biological, psychological and social characteristics that may predict the risk behaviours in adolescence. Parents, family climate, peers, friends, norms, beliefs, attitudes, school, media, laws etc have been highlighted as potential factors that contribute to the engagement in risky behaviours. Following chapters are of greater importance for understanding the problem of one specific risk behaviour, e.g. alcohol use in adolescence with identification of risk factors for its use.

4. ALCOHOL USE AMONG ADOLESCENTS

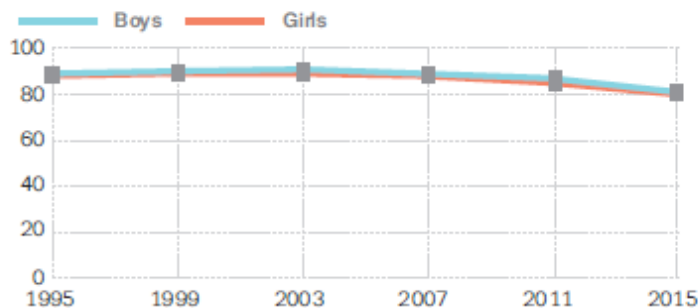
4.1. PREVALENCE OF ALCOHOL USE IN THE USA AND EUROPE

At different age range, alcohol is one of the most common used substances among adolescents (Botvin, 1996; Hill, 2015; Inchley, 2013; Palmer, 2009).

American and European studies (ESPAD, 2015; Johnston, 2016) have shown that the prevalence of lifetime alcohol use among adolescents is slightly decreasing over the years, but still remains a big public health problem. Many efforts have been invested in implementation of preventive programs, but not every of them were successful.

Many studies have been conducted in order to investigate trends in alcohol use among adolescents, among which are Monitoring the Future (MTF) and European School Survey Project on Alcohol and Other Drugs (ESPAD). MTF measures the prevalence of substance use among 8th, 10th and 12th graders on annual basis among American adolescents, while ESPAD measures the trends in substance uses among 15th and 16th year-old European adolescents every 4 year. The existing evidence indicates the lifetime use of alcohol among adolescents has been trending downward in the period from 1995-2015 in Europe (Figure 3).

Figure 3. Lifetime alcohol use among boys and girls: 25-EUcountry trend 1995-2015



Source: European School Survey Project on Alcohol and Other Drugs (ESPAD, 2015).

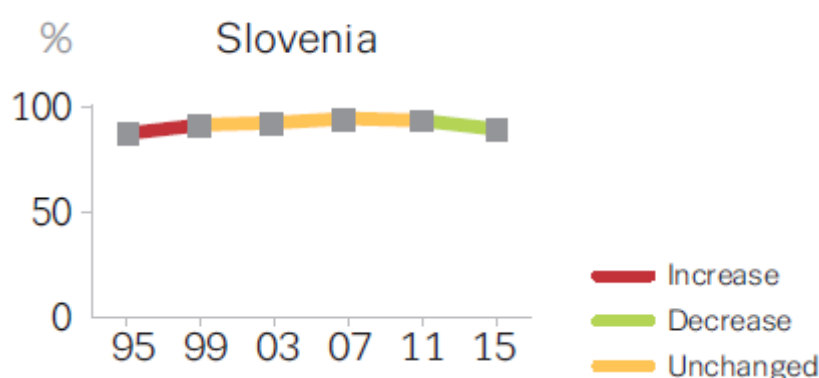
In United States of America, the prevalence of drinking during the lifetime period was 22.8 % among 8th graders, 43.4 % among 10th graders and 61.2 % among 12th graders (Johnston, O'Malley, Miech, Bachman and Schulenberg, 2016). In total, the prevalence of youth drinking was 41.9 % and being drunk 26.4 % during the lifetime period among 8th, 10th and 12th graders (Johnston et al, 2016). The last ESPAD study reported that about 80% of 15- and 16-year old adolescents have drunk alcohol in Europe (ESPAD, 2015). This indicates that alcohol use among adolescents is much higher in Europe than in the United States of America.

4.2. PREVALENCE OF ALCOHOL USE IN SLOVENIA

Alcohol is the most frequently used substance among Slovenian adolescents (Kuhar and Hovnik-Keršmanc, 2010). The HBSC (Health Behaviour in School-Aged Children) study investigates health behaviours among 11-, 13- and 15-year-old adolescents every four years in Europe using a self-reported survey. The last survey of the HBSC in Slovenia was conducted in 2014. According to their study, the prevalence of lifetime alcohol use among 11-, 13- and 15-year-old adolescents was 47.5%. The results showed that prevalence rates increase substantially with age, with 18.4% of lifetime alcohol use among 11-year-old adolescents, 44% among 13-year-old adolescents and 80.6% among 15-year-old adolescents. The study also measured changes over the years for the period from 2002 to 2014 and concluded that the prevalence of alcohol use among adolescents decreased over the years, except increment in alcohol consumption among 11-year-old adolescents. Drunkenness rates decreased over the years as well. Moreover, the number of adolescents who started to drink at the age of 13 or younger increased (2002 year 28.5% < 2014 year 39.5%) (Jeriček Klanšček et al, 2014).

It was recently reported that Slovenia stands above drinking average in Europe with the average of 80% and Slovenia has 89% average of lifetime alcohol use among 15-16-year-old adolescents (ESPAD, 2015). The ESPAD average for the adolescents who began drinking at the age of 13 or younger was 47%, while rates were higher in Slovenia (59%). Moreover, the HBSC reported drinking average of 3% for 11-, 5% for 13- and 13% for 15-year-old adolescents who drank alcohol at least once a week in Europe. For all three groups, rates of drinking at least once a week among Slovenian adolescents exceeded the European average (Inchley et al, 2013). According to ESPAD study, alcohol use among adolescents in Slovenia peaked in 2003 and has decreased since then (ESPAD, 2015) (Figure 4).

Figure 4. Lifetime alcohol use in Slovenia: 1995-2015



Source: European School Survey Project on Alcohol and Other Drugs (ESPAD, 2015).

4.3. ALCOHOL CULTURE IN EUROPE AND SLOVENIA

The European Union is the heaviest drinking region of the world because alcohol plays a great role in cultural and social life among European citizens (Anderson and Baumberg, 2006).

Slovenian youth are grown up in a „wet culture” (Zalta et al, 2008), which is defined as social environment in which alcohol is widely used and accepted as normative activity (Plant and Plant, 1992). Slovenia is among the countries where the alcohol is widely used due to cultural acceptance of alcohol consumption. Such as in many other “wet culture” countries, alcohol use is integrated in daily life, such as drinking alcohol during the meal time, celebrations etc (Bloomfield, Stockwell, Gmel and Rehn, 2003). Alcohol is used at many celebrations to indicate hospitality and to mark important occasions such as initiation ceremonies into adulthood, the married status, graduation, a new job, a new life style and other periods of transition and success. On a personal level, alcohol is used to ease the “transition from work time to leisure time“ (Howe, 1989). As Bloomfield's study described, in cultures where alcohol is part of daily life i.e. wet cultures, abstinence is low and alcohol widely available and acceptable (Bloomfield et al, 2003). Adolescent's first introduction to alcohol takes place within the family settings, such as weddings or some other celebrations (Zalta et al, 2008). For some other, first taste of alcohol is due to disappointments, stress and other life circumstances (Howe, 1989).

Social context of drinking is completely different from that of illicit drug use because it's illegal and socially unacceptable (Plant and Plant, 1992). Alcohol consumption is not rare among Slovenian population, but there are two sides of views. People like to drink alcohol and consider it as normal and acceptable activity, but on the other hand, they are disgusted by youth drinking, for example if adolescents get drunk (Stergar, 1998).

4.4. AVAILABILITY OF ALCOHOL

Alcohol is acceptable and available legal substance in Slovenia (Stergar, 1998). Adolescent's drinking is a reflection of acceptable norms toward alcohol, youth living in an environment with more drinking adults, exposure to alcohol advertising and greater bar density which is perceived as an easy access to alcohol and ability to successfully purchase alcohol with acceptable community norms toward alcohol are more exposed to heavy drinking and drinking in early adolescent age (Anderson, 2009; Collins, 2003; Paschall, 2013; Rowland, 2016; Song, 2012). Although underage drinking is prohibited in Slovenia, 88% of adolescents who participated in ESPAD survey perceived easy access to alcohol (Stergar, 2011). As alcohol plays a great role in cultural and social life of Slovenian citizens, it is not strange that adolescents perceive it as easily available. Plant and Plant (1992) described a study in which 96% of 13 year old adolescents reported that they had consumed alcohol. In that study parents

were the most frequent providers of the first alcoholic drink. 84% of respondents indicated that they had consumed their first drink at home.

5. RISK FACTORS FOR ADOLESCENT ALCOHOL USE

Drinking among adolescents can be explained by a combination of many factors (Hawkings et al, 1992). There are multiple pathways leading to the initiation of alcohol use, such as family members who use alcohol and convey positive attitudes toward alcohol, peers who promote drinking behaviour, and media suggesting that alcohol use is socially acceptable (Botvin, 1996).

5.1. SOCIAL RISK FACTORS

Social influences have an important effect on adolescents' behaviour and alcohol consumption (Silbereisen, 1990; Prinstein, 2008). According to research conducted among German and Polish adolescents, adolescents change their drinking frequency as a function of differences in social contacts (Silbereisen, Schonpflug and Albrecht, 1990). Those with more social contacts drink more (Silbereisen et al, 1990). Adolescents may be influenced by various processes such as provision, modeling, encouragement, and shaping positive attitudes toward alcohol (Prinstein and Dodge, 2008). The provision refers to making substances available to adolescents. Modeling refers to observing others using substances which may have an effect on alcohol expectancies. Adolescents may learn at a very young age that alcohol may liven up a party. Encouragement refers to peers pressure to use substances. And finally, peers and parents may influence substance use by shaping their positive attitudes toward alcohol. Oxford, Oxford, Harachi, Catalano, and Abbott (2001) found the great importance of family and peers on the onset of substance use during the adolescence. Parents and friends influence adolescent substance use with their own behaviour which is considered to be one of the strongest risk factors (Anderson, 2010; Latendresse, 2008; Prinstein, 2008).

5.1.1. PARENTS AND FAMILY

The situation in family equips young people to deal with challenges which are imposed on them (Inchley et al, 2013). Adolescents' involvement in risk behaviours may be determined by their parents' behaviour through the process of observation (Igra and Irwin, 1996).

Adolescent's earliest exposure to alcohol occurs at home through the observation of parents' use (Prinstein and Dodge, 2008). Positive parental attitudes toward alcohol predict alcohol use initiation (Donovan, 2004), while parental alcohol use increases the risk of similar behaviour in their children which leads to alcohol use and intoxication (Kovacs, 2008; Latendresse,

2008). So, adolescents whose parents drink are more likely to have positive attitudes toward alcohol than those children whose parents don't drink (Prinstein and Dodge, 2008). Poor family management such as low quality of the parent-child relationship, family conflicts, poor monitoring, poor family cohesion and emotional distance, and unsupportive family environment with extreme parental control lead to teenagers' undertaking risk behaviours, alcohol use, and binge drinking (Cerkez, 2015; Habib, 2010; Igra, 1996; Kristjansson, 2009; Mathijssen, 2014; Shucksmith, 1997; Visser, 2012). Adolescent's perception of family approval and modeling of alcohol use predicts drinking (Donovan, 2004; Igra, 1996), while parental disapproval lowers the frequency of alcohol use (Mrug and McCay, 2013). Positive identification with parents, time spent with parents, parental monitoring and involvement, higher parental education, and authoritative parental style constitute protective factors in health behaviours (Cerkez, 2015; Kristjansson, 2009; Mrug, 2013; Piko, 2012; Shucksmith, 1997; Simons-Morton, 2001). Pro-social family processes contribute to peers' selection which may have great influence on adolescent substance use (Oxford et al, 2001).

The period of adolescence is related to the increased independence of the parents and increased reliance on peers (Dusenbury and Botvin, 1990), so adolescents migrate from parents to peers seeking for information and alternative behavioural models (Hemovich, Lac and Crano, 2011). Family factors have a greater influence on substance use during preadolescence, while peers and friends become more important factors in adolescence (Newcomb, 1995). Although parents may not influence child's substance use directly, they may have indirect influence because they have already established the trajectories of their child's development (Newcomb, 1995).

5.1.2. PEERS AND FRIENDS

Adolescents are motivated to adjust their behaviour to friends' to be socially accepted which makes them vulnerable to peer pressures (Dusenbury, 1990; Patrick, 2010). Peer pressure is the most common term used to explain influence on adolescents by peers, which involves direct attempts to impact attitudes or behaviours in the other person or group (Prinstein and Dodge, 2008). Adolescents are more likely to drink alcoholic beverages when the freedom from parental supervision is greater and inclination toward peers is stronger (Silbereisen et al, 1990). Adolescents may drink alcohol in order to show that they belong to adult lifestyle (Silbereisen et al, 1990).

Many studies confirmed the evidence that peers represent an important factor for adolescent alcohol use (Leung, 2011; Simons-Morton, 2001). The effect of peer norms on adolescents is stronger than parental norms (Mrug and McCay, 2013) which lead to peers' greater influence on adolescent substance use (Berge, Sundell, Ojehagen and Hakansson, 2015). The relationship between adolescent and peers is stronger because peers may project some of their own attitudes onto their friends (Prinstein and Dodge, 2008). Adolescents want to conform to the norms of their peers' group because peer acceptance is very important to them (Prinstein

and Dodge, 2008). The more friends in a youth's peer network ingest alcohol and drink to intoxication, the greater is the likelihood of being a heavier alcohol user and be involved in extreme forms of alcohol use such as heavy episodic drinking (Anderson, 2010). Perceived friends' drinking and drunkenness, as well as peers' pressure to drink, have a strong influence on adolescent drinking and heavy drinking behaviours (Anderson, 2010; Patrick, 2010; Simons-Morton, 2001; Song, 2012).

Basic principles of peer influence that were discovered over the time by various researchers (Prinstein and Dodge, 2008):

- Peer influence is purposive behaviour: peers may influence others in order to establish normative regulation of the specific group. Group leaders may try to influence the attitudes of the other group members to ward off threats to their dominant position in the group.
- Multiple models of peer influence: other than peer pressure, there are other forms of peer influence. The behavioural display means that someone displays the attitude or behaviour that is desired of other people, and these others model the behaviour. Behavioural reinforcement refers to encourage or reward activities in which an adolescent is already engaging. Structuring opportunities refer to the creation of a situation that facilitates certain behaviour without encouraging it, i.e. when an adolescent is invited to a party, the other persons do not intend to encourage adolescent to drink alcohol. However, the adolescent may find it easier to drink than not to be invited to the party.
- Some adolescents disrespect adult norms in order to conform to their peer norms.

Prinstein and Dodge (2008) distinguished two types of group norms of which the first characterize what group members are like and, the second, what group members are supposed to be to fit in. Substance use may provide adolescents with a sense of group identity and serve as a basic point for social interactions (Schinke et al, 1991).

5.2. INTRAPERSONAL/INDIVIDUAL RISK FACTORS

Positive and negative beliefs about alcohol are found to be important predictors of drinking behaviour and binge episodes among adolescents, with positive expectancies leading to increased drinking and negative expectancies to a decreased likelihood of drinking (Anderson and Brown, 2010). Positive alcohol beliefs are associated with low resistance to peer influence, which may lead to the development of alcohol use in future (Willner, 2001). In the ESPAD report, a great number of students reported expecting positive effects of alcohol consumption, such as having fun (64%) and forgetting the problems (48%) (Hibell et al, 2011). A few studies conducted in Slovenia (Dekleva, 1998; Zalta, 2008) reported that Slovenian adolescents first perceive positive effects of alcohol use such as greater self-esteem,

better communication skills, easier making friends, greater self-confidence, feeling more relaxed, better amusement, happiness, and some adolescents even reported that alcohol is good for health and that it helps them forget the problems. Attitudes regarding alcohol, motivation, and reasons for alcohol use are powerful predictors of alcohol use among adolescents and can serve as a marker for the development of problematic behavioural patterns (Patrick and Schulenberg, 2014). Perceived risk of drinking was found to be a protective factor, while low self-esteem was a risk factor for alcohol use (Patrick, 2010; Silbereisen, 1990). Literature has shown that resilient adolescents face problems more actively and they have more positive self-esteem (Losel and Bliesener, 1990). The process of negative peer influence is more likely to occur among adolescents with low self-esteem (Prinstein and Dodge, 2008). Decision-making skills were also found to have an influence on alcohol use (Stephens et al, 2009).

5.3. AGE AND GENDER AS A RISK FACTOR

The age of first drinking is an important factor of drinking behaviour, especially because it has great influence on subsequent serious problems with alcohol use, delinquency, and other substance use (Anderson, 2010; Newcomb, 1995; Song, 2012; Windle, 1996). Early onset of alcohol use is a powerful contributor to the development of drinking outcomes, alcohol abuse, and dependence (Anderson, 2010; Grant, 1997; Song, 2012). Majority of adolescents drink alcohol during the lifetime period, on average beginning to drink at the age of 13 or less in Europe and Slovenia (ESPAD, 2015; Jeriček Klanšček, 2014; Stergar, 2011). Zalta et al. (2008) reported that 21.5% of adolescents reported having tried beer at the age of 9 for the first time, and 28.4% of adolescents tried beer when they were 10-11 years old. Furthermore, 18.1% of 9-year-old children and 21.3% of 10-11-year-old adolescents tried wine for the first time. The European Commission reported that adolescents get drunk for the first time at the age of 14 (Anderson and Baumberg, 2006). Alcohol use and drunkenness increase gradually with the age up to young adulthood (Inchley, 2013; Palmer, 2009; Silbereisen, 1990).

Boys tend to engage more than girls in alcohol consumption, drunkenness, and heavy episodic drinking (Anderson, 2010; Cerkez, 2015; Inchley, 2013; Mackenbach, 2008; Patrick, 2012; Redonnet, 2012; Simetin, 2013; Song, 2012; Stergar, 2011). Studies conducted in Slovenia came up with the same conclusion that girls drink less alcohol than boys (Bogataj, 2013; Dekleva, 1998; Jeriček Klanšček, 2014; Koprivnikar, 2015). Having friends drinking alcohol and problem-behaving friends represents a risk factor for both males and females, with stronger influence on females (Kelly, 2011; Simons-Morton, 2001). In Simons-Morton, Haynie, Crump, Eitel, and Saylor (2001) study, peer pressure is associated with drinking among girls, but not among boys. Parental disapproval of alcohol use is a protective factor against alcohol use among boys and girls (Kelly, 2011; Mrug, 2013), while girls perceive greater disapproval and monitoring (Hemovich, 2011; Mrug, 2013). A higher level of conflicts with parents leads to harmful alcohol consumption among both boys and girls, slightly stronger among girls (Cerkez, Culjak, Zenic, Sekulic and Kondric, 2015). Positive

alcohol expectancies are higher in girls than in boys and increase with the age, while negative alcohol expectancies are lower in boys than in girls and decrease with the age (Willner, 2001).

6. CONSEQUENCES OF ADOLESCENT ALCOHOL USE

Drinking at early age may indicate future life-course (Wells, Horwood and Fergusson, 2004). Experimentation with substances at younger age increases risk for problems with substances later in life (Botvin, 1996). Many studies have provided insight into potential consequences of early alcohol consumption such as sexual promiscuity, sexually transmitted diseases, greater involvement in violence, crime, fight, injuries, alcohol dependence, drunkenness and other diseases in late adolescence and young adulthood (Anderson, 2006; Palmer, 2009; Stueve, 2005; Swahn, 2004; Wells, 2004). Teenage drinking, heaviest adolescent drinking, binge drinking and antisocial behaviour during the adolescence lead to alcohol dependence in adulthood and increase the likelihood of being binge drinker throughout adulthood (Bonomo, 2004; Jefferis, 2005).

Alcohol use may reduce work performance and provoke various injuries, violence, crime, traffic accidents. Many neuropsychiatric conditions may be caused by alcohol use such as anxiety, sleep disorders, depression, alcohol dependence, cognitive impairment, nerve and brain damage. Health consequences of alcohol use are cancers (liver cancer most common), cardiovascular diseases, lung diseases, impairment in fertility, muscle diseases, gastrointestinal, metabolic and endocrine diseases, muscle diseases and finally increased mortality (Anderson and Baumberg, 2006).

The risk of developing lifetime alcohol dependence is greater for persons who used some of substances once before in comparison with those one who have never experimented with substances (Palmer et al, 2009). Although many adolescents may discontinue with alcohol use after short period of experimentation, for some it leads to development of psychological and physiological dependence (Schinke et al, 1991).

6.1. CONSEQUENCES OF ADOLESCENT ALCOHOL USE IN SLOVENIA

Public Health Institute in Slovenia investigated death rates and hospitalization caused by alcohol use among youth and adults. During the year 2014, 804 deaths were caused by alcohol use in Slovenia. In other words, every day two people died because of their alcohol use. Of 804 deaths, 1 person was less than 19 years old, 5 were 20-29 years old, 23 were 30-39 years old, and the rest were older than 40. The most common death cause was a liver disease (58.6%), followed by mental and behavioural disorders caused by alcohol (27%) (Lovrečič and Lovrečič, 2016) (Figure 5).

Figure 5. Deaths caused by alcohol consumption in Slovenia

Diseases caused by alcohol	Males	Females	Total
Mental and behavioural disorders due to alcohol consumption	181	36	217
Degeneration of nervous system due to alcohol	1	0	1
Alcoholic cardiomyopathy	48	12	60
Alcoholic gastritis	2	1	3
Alcoholic liver disease	357	114	471
Chronic alcoholic pancreatitis	1	0	1
Toxic effects of alcohol	35	3	38
Poisoning with alcohol	10	3	13

Source: Lovrečič, B. in Lovrečič, M. (2016). Poraba alkohola in zdravstveni kazalniki tvegane in škodljive rabe alkohola 2014.

During the same year, 3545 people were hospitalized because of their alcohol use. In other words, 10 people a day were hospitalized because of causes attributable to alcohol. Of 3545 people, 184 were less than 19 years old, 364 were 20-34 years old, and the rest of them were older than 35 (Lovrečič and Lovrečič, 2016).

E. Stergar (2011) divided consequences caused by alcohol use into four groups:

1. Individual difficulties (accidents, injuries, hospitalization, lower school results);
2. Relationship problems (problems with friends and parents);
3. Sexual problems (unprotected sex);
4. Delinquency (problems with police, fight).

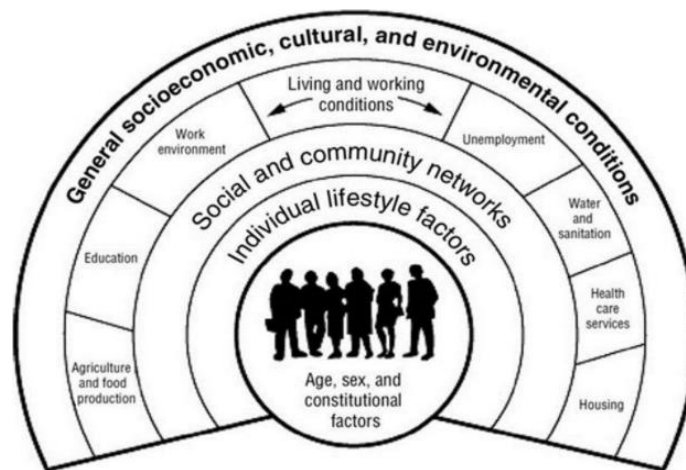
According to E. Stergar (2011), the most common problems related to alcohol are low school achievement (14%) and problems with friends (9%) and parents (12%). Other Slovenian studies have found that adolescent alcohol consumption elicits negative consequences, such as delinquency, poor school results, death, violence, alcoholism, injuries, and unwanted and unprotected sexual experience (Kovše, 2012; Lovrečič, 2016; Sande, 2009; Stergar, 2011; Zalta, 2008).

7. SOCIOECONOMIC STATUS DIFFERENCES IN ALCOHOL USE

7.1. DETERMINANTS OF HEALTH

Social and economic conditions that influence health through the lifespan are known as social determinants of health. Dahlgren and Whitehead (2007) developed the model called determinants of health in order to explain influences on health. Individual lifestyle is surrounded by social and community norms (housing, health care services), living and working conditions (education, work environment, unemployment), and finally to general socioeconomic, cultural and environmental conditions (Dahlgren and Whitehead, 2007).

Figure 6. Determinants of health



Source: Dahlgren and Whithead 1991

As Figure 6 shows, every individual possess fixed characteristics such as age, sex and constitutional factors. They are embedded by various modifiable influences. First layer represents individual lifestyle factors which include behaviours such as alcohol use and smoking. Second layer shows that individuals may be influenced through the interaction with community and social networks (e.g. peers). Third layer indicates that living and working conditions, access to health care services, education and housing have great impact on one's health. The last layer shows that socioeconomic, cultural and environmental characteristics influence populations' health and include factors such as disposable income, taxation and availability to work (Dahlgren and Whitehead, 2007).

Early socioeconomic exposures have effects on lifelong health and represent important factor for development of unhealthy and healthy behaviours. Many studies confirmed the fact that disadvantaged social circumstances are related with increased healthy risks among youth (Inchley et al, 2013). Low SES adolescents have poorer communication with parents, less social support from their parents and peers and do less well in a school (Inchley et al, 2013). Remarkable book „The Spirit Level“, result of 30 years long research by Wilkinson and Pickett (2009), demonstrated relationship between social inequality and eleven different

health and social problems among which is substance use described as well. They assumed that people at the bottom of society suffer more problems because of two reasons: circumstances in which they live cause their problems, and because they are more prone to problems which drag them down. However, children from the affluent families are considered to be in low risk. Nevertheless, there are suggestions that high SES pupils may manifest risk behaviour due to isolation from parents and excessive pressures to achieve in academic world (Luthar, 2003).

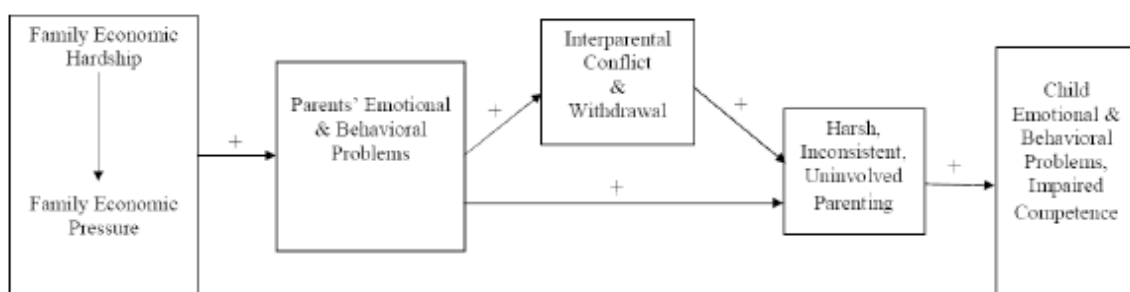
7.2. FAMILY STRESS MODEL AND INVESTMENT MODEL

Socio-economical status (SES) may be understood as a measure that comprehends prestige, power and economic well-being, also called social position. Three quantitative indicators provide good measures of SES and these are income, education and occupational status (Conger, Conger, and Martin, 2010). Conger et al (2010) in their review were guided by two theoretical frameworks in order to explain SES and children development. The first one is family stress model, and the second one, investment model.

Family stress model (FSM) explains parent-child relationship and how children may be affected by family financial difficulties problems. This model predicts that economic problems influence child's development through the lives of parents (Conger et al, 2010).

Figure 7 illustrates that family economic difficulties and economic pressure are related indirectly to children's development through the influence of parental behavioural and emotional functioning. Economical difficulties, such as scarce resources for purchase of basic material needs and payment of monthly bills, can cause problems in relationships between parents which lead to the disruption in parenting and inconsistent parental practices. Disrupted parenting is explained by parental stress and inter-parental conflicts which may influence child development, and produce internalizing and externalizing problems (Conger et al, 2010).

Figure 7. Family stress model in parent-child relationship



Source: Conger, R.D., Conger, K.J. and Martin M.J. (2010). Socioeconomic status, family processes, and individual development.

Investment model (IM) describes that affluent parents invest more in their children through the development of academic and social competencies. These investments include living in high-standing neighbourhood, provision of good medical care, parental encouragement to education and academic success. Higher educated parents' priorities are good health and educational success. Parental income during the childhood and adolescence is important for future academic, social and occupational success. The model suggests that high social status families invest more in the development of their children, while low social status families invest more in basic material needs (Conger et al, 2010).

According to previously described characteristics of both models, family stress model better predicts behavioural problems, while parental investment better predicts cognitive development. These theories demonstrated that socio-economical status has a great influence on child's development and family climate.

7.3. SOCIOECONOMIC STATUS AND ADOLESCENT ALCOHOL USE

Numerous studies have found an association between social status and adolescent risk and health behaviours. The HBSC has found SES to be an important predictor of health (Inchley et al, 2013). Many studies have suggested that low SES represents a risk factor for the development of unhealthy behaviours, whereas some other studies described high SES as a potential risk factor (Luthar and Latendresse, 2005).

Socioeconomic status was identified as great risk factors for alcohol use (Koprivnikar et al, 2015). Although many studies have represented results of the relationship between socioeconomic status and alcohol use among adolescents, there are many contradictions between studies. Most of the studies have found that drinking behaviour is related more to the high socioeconomic status (Patrick, 2012; Richter, 2009), but drunkenness or binge drinking to low socioeconomic status (Huckle, 2010; Lynch, 1997; Mackenbach, 2008; Sweeting, 2015). Conversely, some studies have found that drunkenness is more common behaviour among high SES adolescents (Humensky, 2010; Kendler, 2014; Patrick, 2012; Simetin, 2013), while other studies reported that adolescents from low SES were prone to drinking behaviour and alcohol-related problems (Kendler et al, 2014). And finally, some studies have found no clear pattern between SES and alcohol use (Hanson and Chen, 2007).

The report by the European Commission published that low SES youth are less likely to drink alcohol at all (Anderson and Baumberg, 2006). However, they are more likely to get drunk and becoming dependent on alcohol (Anderson and Baumberg, 2006). Huckle, You, and Casswell (2010) found that SES interacts differently with the quantity and frequency of drinking. Those attending low SES drink heavier quantities, while high SES individuals drink more frequently (Huckle et al, 2010). On the contrary, Martin and Pritchard (1991) found that those from high socioeconomic background tend to drink more frequently and consume a larger quantity of alcohol (Martin and Pritchard, 1991).

Moreover, Richter et al. and the HBSC reported that there are some differences across the countries which may depend on alcohol culture and alcohol price in each country (Inchley, 2013; Richer, 2006).

Different studies used different measures to measure the association between social status position and alcohol use, which means that some studies used family affluence status (FAS), some other parental occupations, and third socioeconomic status of school area as a measure of social status. These different measures of social status might be the reason for the different results obtained from the studies (Hanson, 2007; Kendler, 2014). Kendler et al. (2014) concluded that higher family income may provide greater financial resources to purchase alcohol, while family SES is more related to parental, community, and peer attitudes about alcohol use and problem-related to alcohol consumption. Richter, Leppin, and Gabhainn (2006) used two different social status dimensions (family affluence status and parental occupation) in their study and obtained different results for each of dimensions used. According to Richter et al. (2006), parental occupation is a reflection of their education and those parents with higher educational background might influence alcohol use in their children by the values and norms they transmit to them. On the contrary, FAS (family affluent status) is more strongly related to income and spending power in affording costly alcohol (Richter et al, 2006). Hanson and Chen (2007) in their review explained that the SES indicator is important in the assessment of the relation between SES and alcohol. They revealed that low SES is related to negative health behaviours if SES was measured using social status indicators such as parental education as the indicator. However, when indicators of income are used, high SES is related to greater risk of unhealthy behaviours.

Although social status influence on the adolescent's behaviour has been investigated in previous studies to some extent, the relationship between social status and alcohol use is less clear in the context of factors such as friends, family, and personal factors relevant to each social status position. Due to inconsistent findings, there is a need to clarify the understanding of how SES relates to drinking during the adolescence (Patrick, Wighman, Schoeni and Schulenberg, 2012). As harmful alcohol consumption contributes to health inequalities in Slovenia, it has to be investigated in its depth (Kovše, Tomšič, Mihenc Ponikvar and Nadrag, 2012).

III EMPIRICAL PART

8. REASONS FOR THE PRESENT STUDY

By an overview of the previous studies conducted in Slovenia, I concluded that although many studies investigated the prevalence of alcohol use among Slovenian youth, there is lack of studies on risk factors for adolescent alcohol use and risk factors stratified by socioeconomic status. It was recently reported that Slovenia stands above the drinking average in Europe (ESPAD, 2015). The last surveys of the HBSC (Jeriček Klanšček et al, 2014) and the ESPAD (Stergar, 2011) in Slovenia reported that the prevalence of alcohol use among youth decreased during last years, but still remains a big problem with many negative consequences, such as delinquency, poor school results, death, violence, alcoholism, and injuries (Kovše, 2012; Lovrečič, 2016; Stergar, 2011; Zalta, 2008). Although underage drinking is prohibited in Slovenia, adolescents perceive easy access to alcohol with acceptable community norms because alcohol plays a great role in the cultural and social life of Slovenian citizens (Stergar, 2011; Zalta, 2008). Socioeconomic status and gender were identified as great risk factors for alcohol use (Koprivnikar et al, 2015). The HBSC (2014) and the ESPAD (2015) reported that, on average, adolescents begin to drink at the age of 13 or younger (ESPAD, 2015; Jeriček Klanšček, 2014). In order to reduce alcohol use among children and youth, it is important to address risk factors which are present earlier in child development because early onset of alcohol use is a powerful contributor to the development of drinking outcomes (Anderson, 2010; Grant, 1997). Previous studies showed that assessment of potential risk factors which occur in family, peers and school environment, as well as intrapersonal and interpersonal skills are important to minimise the risk behaviours among adolescents and to prevent future negative health consequences.

Many studies have been conducted on the subject of risk factors for adolescent alcohol use in Slovenia (Dekleva, 1998; Sande, 2004; Stergar, 1998). None of those studies, however, applied regression analysis. In order to measure probability for involvement in alcohol use among adolescents, multivariate regression models are needed because it is well known that multiple factors cause alcohol use onset and progression with no single cause.

8.1. RESEARCH OBJECTIVES

The two main research goals are:

1. To investigate risk factors associated with lifetime alcohol use among 12-14-year-old Slovenian adolescents
2. To explore risk factors associated with lifetime alcohol use stratified by socioeconomic status, i.e. socioeconomic status differences related to the lifetime alcohol use.

9. HYPOTHESIS

The research hypotheses are:

H1: Parental alcohol use, parental permissiveness to drink, low parental monitoring, and bad family climate are associated with lifetime drinking among adolescents.

H2: Friends' drinking is associated with lifetime drinking among adolescents.

H3: Negative personal factors are associated with adolescent's lifetime alcohol use.

H4: Male gender, older adolescents, and low SES adolescents are associated with lifetime drinking.

10. RESEARCH METHODS

The thesis used data from EU-Dap (European Drug Addiction Prevention) trial that evaluated the effectiveness of the social influence school prevention program called „Unplugged“ in Slovenia. The aim of the „Unplugged“ program was the prevention of substance use among adolescents. The program was designed by the European group of experts and was evaluated for the first time in the framework of the EU-Dap project during the 2004-2005 school year in seven European countries (Faggiano, Richardson, Bohrn, Galanti and EU-Dap Study Group, 2007). As the program was effective, the Institute of development and research UTRIP in Ljubljana with the collaboration of OED (Osservatorio Epidemiologico delle Dipendenze) in Turin organized the implementation and the evaluation of „Unplugged“ in Slovenia during the school year 2010-2011. The present study is cross-sectional quantitative study based on data collected at baseline in the Slovenian evaluation trial in order to investigate the association between risk factors and lifetime alcohol use. This is a secondary analysis of the baseline survey of the EU-Dap trial. In collaboration with EU-Dap team members the study was performed.

10.1. SAMPLE

2946 pupils aged 12-14 participated in the baseline survey (October-November 2010). After sending invitation to all eligible schools to participate in the program, 48 of them accepted to participate. Of 48 schools that accepted to participate in “Unplugged” school-prevention program, 4 schools resigned. Consequently, the program involved 44 Slovenian primary schools and 155 classes at national level. Sampling was based on voluntary basis. However, according to the study data on number of students, demographics, geographical coverage, age and gender, researchers believe the sample was representative. Of all adolescents, 50.9% were males and 49.1% were females. The study was conducted in the following cities:

- Sevnica, Štore, Frankolovo, Odranci, Kamnik, Ljubljana, Lesce, Dobrunje, Ljutomer, Črenšovci, Kočevje, Mozirje, Gorica pri Slivnici, Blanca, Šmarje pri Jelšah, Križe, Ptuj, Gornja Radgona, Koper, Grosuplje, Cerknica, Brežice, Laško, Celje, Destrnik, Radovljica, Mala Nedelja, Turnišče, Kočevje, Velenje, Dornava, Žetale, Murska Sobota, Bled, Šempas, Ponikva, Dornberk and Maribor.

10.2. DATA COLLECTION PROCEDURE AND RESEARCH INSTRUMENT

Data was collected by anonymous self-completed questionnaires which were administered to the pupils of primary schools in order to collect the baseline information on socio-demographic characteristics, substance use behaviours, knowledge, beliefs, risk perception and attitudes, intrapersonal and socialization skills, perception of friends' substance use, parental behaviour and permissiveness and family climate. The questionnaire was designed by the EU-Dap expert team and translated in Slovenian language. In order to include already validated questions in the questionnaire, most questions were derived or adapted from the EDDRA data bank (<http://eddra.emcdda.eu.org>). To test the questionnaire and confirm validity and reliability, a pilot study was conducted among 406 students in Slovenia.

The survey took place in October-November 2010, and was conducted in the classroom without teacher's participation. To protect the identity and confidentiality of responses, the questionnaires were identified by an anonymous code that was independently generated by each participant. Questionnaires were self-reported because adolescent's self-reports in anonymous surveys show high reliability. The present study will analyze data collected at baseline. All previous work such as questionnaire administration, school choices, pilot study and data entry was made by EU-Dap group members. The performance of quantitative analysis, variable selection and creation, conducting regression models and results interpretations was done by me.

10.3. MEASURES

Questionnaire consists of 42 questions (including gender and age). Of these 42 questions, 12 variables were analyzed for the purpose of the thesis. The choice of the variables was based on the theories and previous literature.

The outcome under the study for the present analysis was lifetime alcohol use. Drinking information was derived from the question „How many times have you drunk alcoholic beverages during your lifetime? Responses were measured on a scale from 0 to 30 and more. The scale consists of a number of times that adolescents used alcohol and it's separated in seven parts: 0 times, 1-2 times, 3-5 times, 6-9 times, 10-19 times, 20-29 times, 30 and more times. Because of regression analysis these responses were collapsed into a dichotomous outcome of “Never drinking” and “Lifetime drinking”. “Lifetime drinking” included the scale range from 1 to 30 and more times of alcohol use. In other words, the study analysis factors associated with drinking at least once during the lifetime.

Socio-demographic characteristics included gender (male and female), age (based on birth date) and socio-economic status of the school area (high, middle and low). Since I haven't had any other measure of SES, socio-economic status was measured by schools self-declaring to which social status group they belong to. Thus socio-economic status was reflection of school status.

Family composition was recoded as living with “Both parents”, “One parent” and “Others”. In dataset, “One parent” level was created as it follows: living with father only; mother only; father and siblings only; or mother and siblings only. “Both parents” level was created as living with father and mother only; or father and mother and siblings only. Finally, third level “Others” consists of following items: living with siblings only; others only: siblings and others only; father and others only; mother and others only; father and mother and others only; father and siblings and other only; mother and siblings and others only; father and mother and siblings and others only. Other refers to stepmother, stepfather, grandparents, other relatives and non-relatives.

Parental monitoring, family climate, beliefs, self-esteem, decision-making skills and refusal skills were investigated through several items on a 4-point Likert scale (strongly agree/agree/disagree/strongly disagree and very likely/likely/unlikely/very unlikely).

In dataset, string variables were created as positive and negative scores.

Variable “Family climate” was investigated by asking adolescents about relationships in family, rules, parental control and family conflicts. Positive and negative scores for this variable are shown in Table 6 (results section).

Variable “Beliefs toward alcohol use” assessed adolescents' opinion about alcohol consequences. Positive score included items “feel more relaxed”, “have more fun”, “be more popular”, “forget my troubles” and “be more confident and outgoing”. Negative score included items “do badly in school”, “get into trouble with parents”, “have problems with my friends”, “become an addict” and “have money problems”.

Variable “Self-esteem” investigated adolescent’s self-worth, self-value and feelings. Positive score included following items “I feel that I have a number of good qualities”, “I am able to do things as well as most other people”, “I am quite good at sport”, “My being happy is important to my parents” and “I have plenty of interests and hobbies”. On contrary, negative score consisted of items such as “At times I think I am not good at all”, “Most boys and girls of my age are smarter than I am”, “I feel embarrassed when I have to say something in class”, “I worry a lot about silly things” and “I often feel nervous over nothing at all”.

Variable “Decision-making skills” assessed adolescents’ ability to identify problems, create solutions and make right choices of which were created positive (“when I have decided to do something, I always carry it through” and “no matter what friends think”) and negative scores (“I often make up my mind without thinking of the consequences” and “I often regret something that I had decided”).

The total score on the scale of these continuous variables was categorized by tertiles. These categorical variables were recoded by confronting the risk level against other two less risky levels (e.g. positive beliefs toward alcohol low/middle vs high) in order to reduce the number of items included in the model and to ease the interpretation of results.

Variable “Refusal skills” assessed adolescents’ ability to cope with alcohol offers. Variable “Parental monitoring” assessed if parents know where they children were during the evenings and if there are any constrains regard their movement.

Although original variable of parental alcohol use consists of four items “Yes”, “No”, “Don’t know” and “Don’t have/see this person”, I broke it down into three categories: “Yes”, “No” and “Don’t know”, because variable level “Don’t have/see this person” does not provide any important information for this variable and includes only 0.38% of responses. A single item assessed the perceived parental permissiveness towards alcohol use, with possible responses “would allow to drink”, “would not allow drinking at home”, “would not allow drinking at all” and “don’t know”. Perceived number of friends using alcohol consisted of several items “none”, “less than half”, “about half”, “more than half”, “all of them” and “don’t know”. For the purpose of multivariate regression analysis I converted it in variable with less levels “none”, “less than half/about half”, “more than half/all of them” and “don’t know”. All continuous variables were turned into categorical variables.

Study included self-reported measures for drinking outcomes.

10.4. STATISTICAL ANALYSIS

Descriptive statistics, bivariate and multivariate logistic regression analyses were performed in order to measure the association between factor variables and outcome¹.

Outcome under the study was lifetime alcohol use.

Firstly, descriptive statistics was performed in order to summarize the characteristics of the study sample classified by age (≤ 12 and ≥ 13), gender (male and female) and total.

Secondly, Pearson chi-squared analysis of lifetime drinking vs non-drinking was performed. Association between two variables was confirmed by p-value (statistical significance at level < 0.05). In order to establish the direction of factor variables (below 1 as protection, or above 1 as risk) and to estimate predicting probabilities, the same variables were evaluated in bivariate analysis. Bivariate logistic regression statistics analysed cross-sectional association of lifetime alcohol use with the following risk factors: socio-demographic characteristics (gender, age and SES of the school area); family characteristics (parental alcohol use; parental permissiveness to drink; parental monitoring and family climate); friends' drinking; and personal characteristics (beliefs toward alcohol, self-esteem, decision-making skills and refusal skills). Among variables with positive and negative scores, one score only was chosen for evaluation in regression models. The score variable was selected on the basis of statistical significance, but if both, positive and negative scores were significant, the one with higher OR was chosen for the analysis. These variables were negative family climate, positive beliefs toward alcohol, negative self-esteem and positive decision-making skills. Odds ratio (OR), confidence interval (95% CI) and p-value were estimated as a measure of association between factor variables and outcome. After obtaining results from bivariate analysis, correlation between variables was made in order to estimate variables suitable for multivariate logistic regression model.

Finally, multivariate logistic regression model was performed in order to evaluate the association between the outcome and factor variables. All statistically significant variables from bivariate model were added into a multivariate model. Adjusted ORs were obtained through final model. Some categorical variables were re-coded in order to reduce the number of items evaluated in the model. The variables that were categorized by using tertiles were added as dichotomized in final model. Through multivariate model were dropped out participants who didn't answer on at least one question. Due to missing values, the final model was run on 2614 subjects. The association between factors and lifetime drinking was evaluated in the overall sample and later stratified by socio-economic status of the school area in order to explore differences in risk factors across different socio-economical levels. The results were represented in odds ratios (OR), confidence interval (95% CI) and p-value. Significance level of $p < 0.05$ was used to reject null hypothesis in favour of alternative hypothesis. Missing information was negligible for each of the assessed characteristics. All statistical analyses are performed by statistical software STATA 12.0.

¹ Outcome refers to dependent variable and factor variables to independent variables in cross-sectional studies

11. RESULTS

11.1. RESULTS OF DESCRIPTIVE ANALYSIS

This section consists of descriptive tables. The purpose of this section is to give an overview on participants' answers on questions that will later be included in regression models which will examine probabilities and risks. 2946 students were analysed in total. Adolescents were analysed by the gender and age on the basis of questionnaires they filled in. Because of missing information, there is a smaller number of adolescents by gender (total 2904) with respect to the total number of adolescents. In the analysis of age, no missing information was found.

11.1.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS

Table 1 shows socio-demographic characteristics by gender and age. Gender, age, SES of the school area, and family composition were examined. More boys (1479) than girls (1425) were involved in the study, as well as older than younger pupils (≤ 12 – 1448; ≥ 13 – 1498). Mean age of the sample was 12.9 (SD 0.6). 65.6% pupils of middle SES, 21.9% of high SES and 12.6% pupils of low SES of the school area were included in the sample. Most of the adolescents lived in both-parent households, followed by living with others and, finally, 6.9% of adolescents lived in one-parent households.

Socio-demographic characteristics											
		Overall (2946)		Gender (2904)				Age (2946)			
				Boys (1479)		Girls (1425)		≤ 12 (1448)		≥ 13 (1498)	
		N	%	N	%	N	%	N	%	N	%
GENDER											
	<i>Boys</i>	1479	50.9	-	-	-	-	710	49.7	769	52.1
	<i>Girls</i>	1425	49.1	-	-	-	-	718	50.3	707	47.9
AGE											
	≤ 12	1448	49.2	710	49.7	718	50.3	-	-	-	-
	≥ 13	1498	50.8	769	52.1	707	47.9	-	-	-	-
SES OF THE SCHOOL AREA											
	<i>High</i>	644	21.9	317	21.4	314	22.0	342	23.6	302	20.2
	<i>Middle</i>	1931	65.6	981	66.3	924	64.8	953	65.8	978	65.3
	<i>Low</i>	371	12.6	181	12.2	187	13.1	153	10.6	218	14.6
FAMILY COMPOSITION											
	<i>Both parents</i>	1960	66.7	967	65.6	967	67.9	936	64.8	1024	68.5
	<i>One parent</i>	204	6.9	104	7.1	97	6.8	87	6.0	117	7.8
	<i>Others</i>	774	26.3	403	27.3	361	25.3	421	29.2	353	23.6

Table 1. Socio-demographic characteristics: results of descriptive analysis

11.1.2. ALCOHOL USE DURING THE LIFETIME, LAST 12 MONTHS AND LAST 30 DAYS

Drinking information was derived from the question “How many times did you drink alcoholic beverages during your..... lifetime, the last 12 months or the last 30 days? Responses were measured on the scale from 0 to 30 and more. The scale consists of a number of times that adolescents used alcohol and it is divided into seven parts: 0 times, 1-2 times, 3-5 times, 6-9 times, 10-19 times, 20-29 times, 30 and more times. Later on, when these responses were collapsed into a dichotomous outcome of “Yes” and “No” the prevalence in Figure 8 was obtained. “Yes, drinking” in all three cases (lifetime, last 12 months and last 30 days) included the scale range from 1 to 30 and more times of alcohol use. However, these data were shown just for the purpose of the descriptive analysis and to give an insight into the adolescent’s use of alcohol during all three time periods. Furthermore, the thesis analyses lifetime alcohol use as a measure of drinking outcome and its association with risk factors. As shown in Figure 8, the prevalence of lifetime drinking among adolescents was 59.4%. When measuring any use without distinguishing how many times alcohol was used during a specific period of time, the prevalence of drinking alcohol during the last 30 days was 26.4% and 39.8% during the last 12 months.

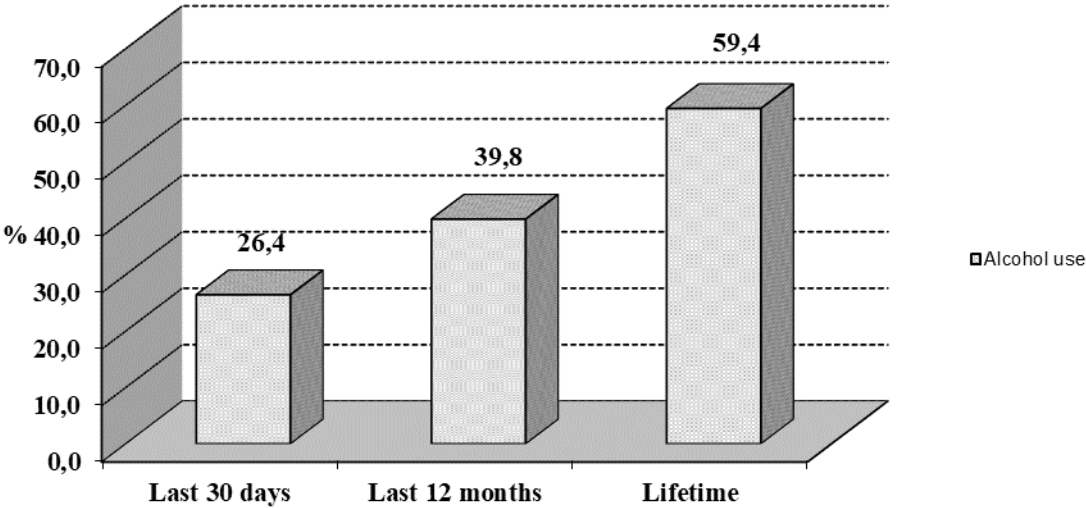


Figure 8. Alcohol use among adolescents: results of descriptive analysis

11.1.3. LIFETIME ALCOHOL USE BY GENDER

Figure 9 shows the differences in the prevalence of lifetime drinking between boys and girls. Differences between these two categories were not big. However, there are still some differences according to the number of times alcohol was used. It was measured how many times boys and girls used alcohol during the lifetime period. The highest number of times of drinking in both groups was 1-2 times during the lifetime (22.7% vs. 26.5%), followed by 3-5 times (13.2% vs. 11.9%) and 30 or more times (9.1% vs. 3.9%). Girls were more involved in tasting the alcohol (1-2 times), while boys were more involved in the continuation of drinking (3-30 or more times). When measuring any use without distinguishing how many times alcohol was used during a specific period of time, boys used alcohol more than girls (63.3% vs. 55.3%) with the difference of 8%. Although boys used alcohol more than girls, differences in prevalence are rather small. This implies that gender gap in drinking alcohol is narrowing.

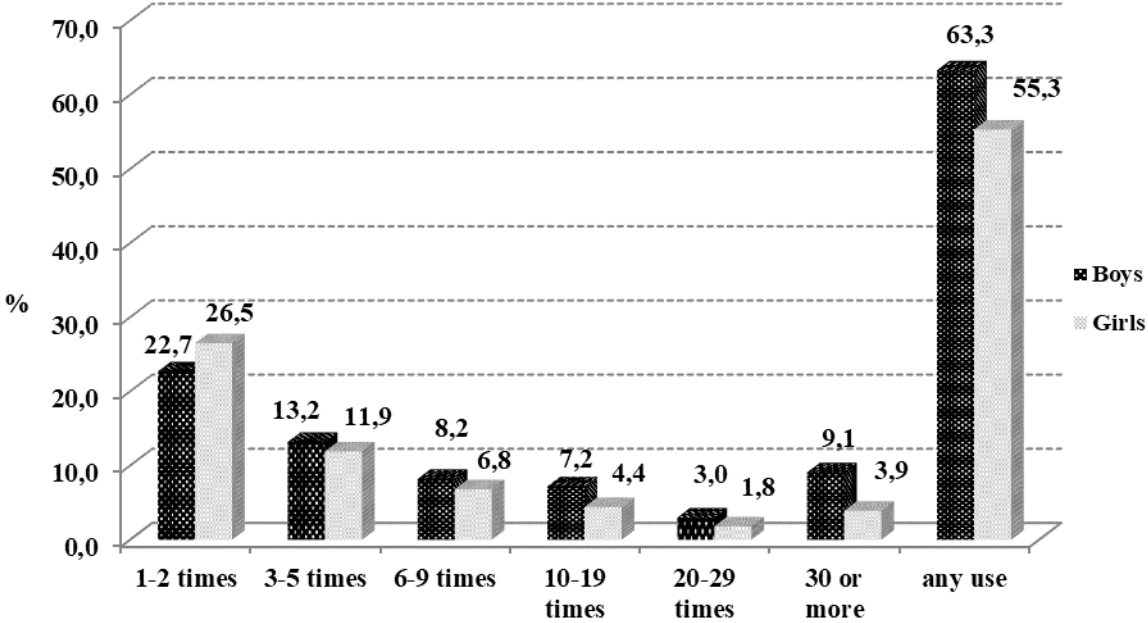


Figure 9. Lifetime alcohol use among boys and girls: results of descriptive analysis

11.1.4. LIFETIME ALCOHOL USE BY AGE

Figure 10 shows lifetime alcohol use by age groups. Prevalence of alcohol use increased with age, which means that adolescents older than 13 drank more alcohol than younger ones. 24.5% and 24.7% of pupils aged ≤ 12 and ≥ 13 reported drinking alcohol 1-2 times during the lifetime period, followed by 3-5 times (10.9% vs. 14.3%) and 30 or more times (4.5% vs. 8.5%). When measuring any use without distinguishing how many times alcohol was used during a specific period of time, older adolescents used more alcohol than younger ones (66.8% vs. 51.7%) with the difference of 15.1%.

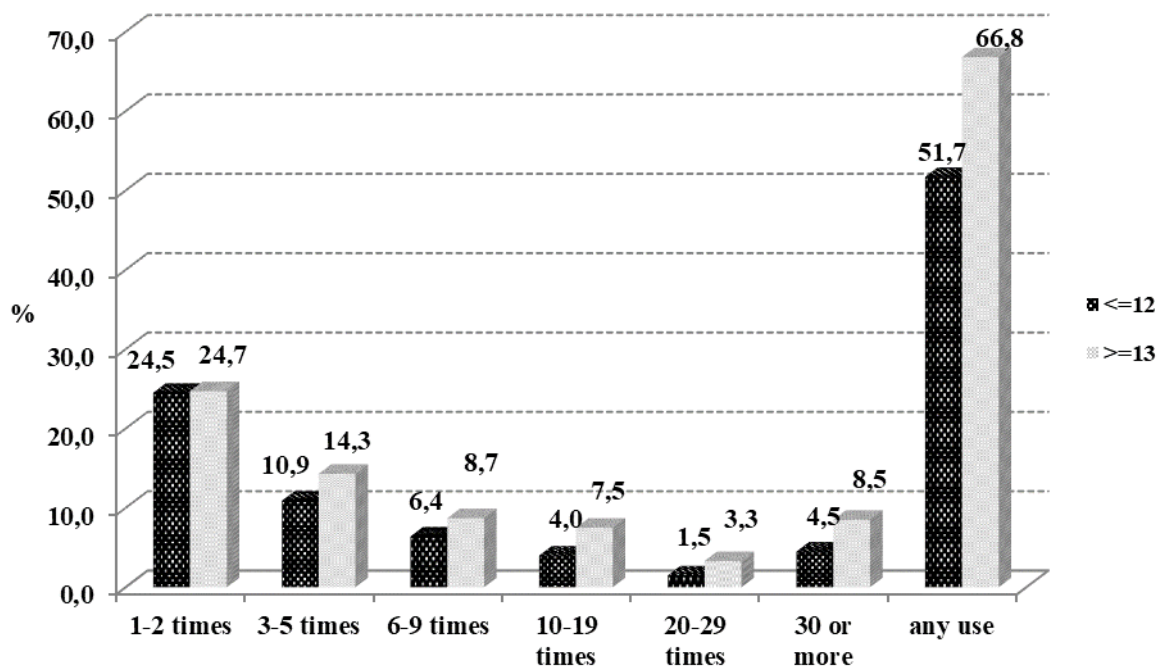


Figure 10. Alcohol use among different age groups: results of descriptive analysis

11.1.5. ALCOHOL USE AMONG FRIENDS AND PARENTS

Table 2 shows adolescent’s perception of their friends’ drinking. According to adolescent’s self-reported data, 22.5% of adolescents reported having less than half of friends drinking alcohol, 6.5% adolescents having half of the friends drinking, 4.7% having more than half of friends drinking, and 3.1% having all of their friends drinking. 22.1% of adolescents reported that they do not know if their friends drink. It is possible that some adolescents didn’t want to disclose information on drinking status of their friends. Overall, about 37.0% of adolescents perceived their friends drinking alcohol. There were no great gender differences. However, 4.4% of boys reported having all of their friends drinking, while 1.7% of girls reported having all of their friends drinking. Older adolescents reported having more friends drinking than younger adolescents.

When you answer this question, think about the friends with whom you spend most of your leisure time. How many of them drink alcoholic beverages?										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
<i>None</i>	1196	41.4	576	39.4	608	43.1	728	50.8	468	31.6
<i>Less than half of them</i>	655	22.5	313	21.4	330	23.4	255	17.8	400	27.0
<i>About half of them</i>	190	6.5	84	5.7	104	7.4	54	3.8	136	9.2
<i>More than half of them</i>	138	4.7	68	4.7	69	4.9	39	2.7	99	6.7
<i>All of them</i>	90	3.1	65	4.4	24	1.7	30	2.1	60	4.1
<i>Don't know</i>	643	22.1	355	24.3	276	19.6	326	22.8	317	21.4

Table 2. Alcohol use among friends by gender and age: results of descriptive analysis

Table 3 shows adolescent’s perception of their parents drinking alcohol. 60.1% of adolescents reported having parents who drank alcohol, 32.6% had parents who did not drink alcohol, while 7.3% did not know if their parents drink alcohol. There were no big differences in adolescent’s gender and age due to parental drinking status.

Does any of your parents drink alcoholic beverages (beer, wine, spirits)?										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
<i>No</i>	944	32.6	464	31.9	464	33.1	478	33.5	466	31.7
<i>Yes</i>	1741	60.1	871	59.9	847	60.4	821	57.6	920	62.6
<i>Don't know</i>	211	7.3	118	8.1	92	6.6	127	8.9	84	5.7

Table 3. Alcohol use among parents by gender and age: results of descriptive analysis

11.1.6. PARENTAL PERMISSIVENESS TO DRINK ALCOHOL

Table 4 shows parental permissiveness toward their children’s drinking alcohol. As expected, more than half of parents did not allow drinking alcohol to their children (56.6%), but again there were 9.5% of parents who allowed their children to drink and 15.5% of parents did not allow drinking alcohol at home only. Percentages regarding parental permissiveness to drink alcohol were collected by adolescent self-reported data, which means that parents may have answered the same question differently. In other words, children's opinion and knowledge regarding whether their parents would have allowed them to drink or not was assessed. This may have been easily misperceived. Parents were more permissive toward boys’ rather than girls’ drinking (11.3% > 7.7%), as well as toward the older rather than younger adolescents (12.1% > 6.8%) with the almost doubled difference in both cases.

If you wanted to drink alcohol (or already do), do you think your father and mother would allow you to do so?										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
<i>Would allow (allows me) to drink alcohol</i>	276	9.5	164	11.3	109	7.7	97	6.8	179	12.1
<i>Would not (does not) allow drinking at home</i>	448	15.5	235	16.2	207	14.7	170	11.9	278	11.9
<i>Would not (does not) allow drinking at all</i>	1641	56.6	756	52.1	863	61.3	898	63.1	743	63.1
<i>Don't know</i>	533	18.4	295	20.3	230	16.3	259	18.2	274	18.2

Table 4. Parental permissiveness to drink alcohol by gender and age: results of descriptive analysis

11.1.7. PARENTAL MONITORING

Table 5 shows parental monitoring marked by statements “My parents set clear rules” and “My parents know where I am at evening” as being positive. More than 90% of adolescents reported that their parents set clear rules and know where they were in the evenings. Observing the gender differences, girls were monitored a bit more than boys, while older and younger adolescents were almost equally monitored.

Does the following description fit the people around you?										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
PARENTAL MONITORING										
<i>My parents set clear rules</i>	2680	92.1	1339	91.8	1304	92.4	1321	92.1	1359	92.1
<i>My parents know where I am at evening</i>	2645	91.1	1292	88.9	1319	93.5	1298	90.8	1347	91.3

Table 5. Parental monitoring by gender and age: results of descriptive analysis

11.1.8. FAMILY CLIMATE

Table 6 provides data on negative and positive family climate such as family relationship, parental rules, parental control and satisfaction with family. The most prevalent were positive family characteristics, while a smaller percentage of adolescents perceived climate in their families as negative. Among negative characteristics the most prevalent were statements such as “my family works against all I do or I would like to do” (15.6%), “I don't know why my parents are still together” (13.2%) and “my parents don't trust me” (12.0%). Boys perceived climate in their families as more negative than girls. Both age groups answered similarly to the questions on negative family climate. On the contrary, the positive family climate was highly prevalent. The lowest positive family climate was reported for the items “My parents always take part in my sports competitions that are important to me” (75.9%), “My parents are interested in me” (84.5%) and “My parents care about my future” (86.1%). Both, boys and girls, as well as older and younger adolescents answered similarly to the questions concerning positive climate.

In the following questions, you are to say whether you agree or disagree with each statement about your family.

	Overall (2946)		Gender (2904)				Age (2946)			
	N	%	Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
			N	%	N	%	N	%	N	%
NEGATIVE FAMILY CLIMATE										
<i>My family works against all I do or I would like to do</i>	451	15.6	277	19.1	164	11.7	212	14.9	239	16.3
<i>I'd change my family with another one</i>	187	6.4	106	7.3	76	5.4	97	6.8	90	6.1
<i>My parents don't trust me</i>	349	12.0	185	12.7	160	11.3	159	11.1	190	12.9
<i>My parents don't like to be with me</i>	246	8.5	125	8.6	117	8.3	114	8.0	132	9.0
<i>My family isn't good</i>	130	4.5	68	4.7	60	4.3	60	4.2	70	4.8
<i>My parents appear to dislike everything I do</i>	283	9.8	156	10.8	123	8.8	129	9.1	154	10.5
<i>I don't know why my parents are together</i>	369	13.2	207	14.9	160	11.8	185	13.5	184	12.9
<i>My home is not an happy place</i>	199	6.9	115	8.0	80	5.7	96	6.7	103	7.0
POSITIVE FAMILY CLIMATE										
<i>My parents care about my happiness</i>	2845	97.7	1422	97.4	1386	98.2	1400	97.9	1445	97.6
<i>My family makes me feel loved</i>	2714	93.4	1356	93.1	1323	93.8	1343	94.0	1371	92.8
<i>In my family we take care about each other</i>	2739	94.6	1364	94.1	1340	95.4	1348	94.7	1391	94.6
<i>I feel appreciated from my family</i>	2659	91.7	1339	91.8	1287	91.6	1317	92.7	1342	90.7
<i>I enjoy with my family</i>	2722	93.8	1372	94.1	1318	93.7	1351	94.7	1371	93.0
<i>My parents are interested in me</i>	2455	84.5	1218	83.8	1205	85.4	1189	83.2	1266	85.8
<i>My home is warm</i>	2786	96.1	1379	95.0	1370	97.2	1379	96.9	1407	95.3
<i>My parents help me</i>	2780	96.0	1378	95.2	1366	97.0	1373	96.4	1407	95.6
<i>I am really important for my family</i>	2632	90.9	1300	89.5	1298	92.3	1300	91.4	1332	90.4
<i>My parents are proud of me</i>	2690	92.9	1338	92.3	1318	93.6	1331	93.7	1359	92.1
<i>My parents take always part to my sport competitions that are important to me</i>	2186	75.9	1084	75.2	1078	77.0	1110	78.2	1076	73.7
<i>My parents believe me</i>	2646	91.5	1311	90.7	1301	92.5	1338	93.8	1308	89.3
<i>I'm proud of my family</i>	2739	95.0	1366	94.4	1339	95.6	1352	95.1	1387	94.8
<i>My parents care about my education</i>	2636	91.4	1298	90.0	1307	93.2	1280	90.1	1356	92.6
<i>My family is the most important thing of my life</i>	2647	91.8	1324	91.6	1292	92.3	1325	93.4	1322	90.3
<i>My parents love me</i>	2724	94.3	1348	93.3	1342	95.5	1352	95.1	1372	93.5
<i>My parents care about my future</i>	2477	86.1	1215	84.4	1235	88.2	1195	84.5	1282	87.6

Table 6. Negative and positive family climate by gender and age: results of descriptive analysis

11.1.9. BELIEFS TOWARD ALCOHOL USE

Table 7 shows negative and positive beliefs toward alcohol use by gender and age. According to the data, only 38% believed they will be expelled from school, 58% believed that they will have money problems, and 63% believed they can become addicts due to alcohol use. The most common negative beliefs were “get into trouble with my parents” (81.7%) and “do badly in school” (75.4%). About 60% of pupils believed they will get into trouble with the police, have problems with friends, and have problems finding a job due to alcohol use. Among possible answers on positive beliefs toward alcohol, forgetting the troubles and having more fun, exceeded 30%. Although gender differences were small, boys were more inclined toward positive beliefs on alcohol, while girls were more inclined toward negative beliefs on alcohol. Similarly, older adolescents were more inclined toward positive beliefs, while younger adolescents toward negative beliefs on alcohol.

How likely is that each of the following would happen to you if you drink alcoholic beverages in the next month?										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
NEGATIVE BELIEFS										
<i>Get into trouble with police</i>	1805	63.4	899	62.6	882	64.2	943	67.6	862	59.3
<i>Do badly in school</i>	2165	75.4	1055	72.9	1080	77.9	1100	78.2	1065	72.6
<i>Get into trouble with parents</i>	2369	81.7	1138	78.2	1200	85.4	1176	82.6	1193	80.9
<i>Be expelled from school</i>	1079	38.0	569	39.7	491	35.8	577	41.6	502	34.5
<i>Have problems with my friends</i>	1782	62.3	827	57.6	930	67.1	950	67.9	832	57.0
<i>Become an addict</i>	1828	63.8	869	60.3	931	67.3	973	69.2	855	58.6
<i>Have money problems</i>	1657	58.2	810	56.5	826	60.0	854	61.3	803	55.3
<i>Have problems finding work</i>	1680	59.1	812	56.7	847	61.6	868	62.2	812	56.0
POSITIVE BELIEFS										
<i>Have more friends</i>	459	16.2	249	17.4	199	14.5	201	14.5	258	17.8
<i>Feel more relaxed</i>	773	27.3	417	29.2	344	25.1	329	23.7	444	30.6
<i>Have more fun</i>	997	35.2	534	37.4	447	32.7	420	30.3	577	39.9
<i>Be more popular</i>	411	14.5	207	14.5	193	14.1	179	12.9	232	16.0
<i>Forget my troubles</i>	935	32.9	477	33.4	443	32.2	419	30.2	516	35.5
<i>Be more confident and outgoing</i>	604	21.3	320	22.4	273	19.9	279	20.1	325	22.4

Table 7. Negative and positive beliefs toward alcohol use by gender and age: results of descriptive analysis

11.1.10. SELF-ESTEEM

Table 8 shows negative and positive self-esteem by gender and age. Adolescents reported having high positive self-esteem. However, a great percentage of adolescents also reported having negative self-esteem. More than 60% of adolescents reported that they think they were not good at all, worried about silly things and often felt nervous, while 57.7% of them felt embarrassed when they had to say something in class, and 58.1% wish they could have more respect for themselves. In terms of gender, a higher percentage of girls reported having negative self-esteem respect to the boys, e.g. more girls than boys reported having low respect for themselves, having a bad image of themselves and feeling useless at times. On the contrary, positive self-esteem was highly prevalent. Furthermore, a higher percentage of boys reported having positive self-esteem than girls. Both age groups answered similarly to questions on positive and negative self-esteem.

How much do you agree with the following description of yourself?										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
NEGATIVE SELF-ESTEEM										
<i>At times I think I am not good at all</i>	1735	61.4	837	59.2	876	63.6	854	61.4	881	61.3
<i>Most boys and girls of my age are smarter than I am</i>	1212	42.7	592	41.8	602	43.6	604	43.4	608	42.1
<i>I feel very embarrassed when I have to say something in class</i>	1638	57.7	816	57.4	795	57.7	843	60.7	795	54.9
<i>I worry a lot about silly things</i>	1820	64.3	863	60.9	933	67.8	882	63.4	938	65.2
<i>I often feel nervous over nothing at all</i>	1843	65.1	900	63.6	915	66.5	878	63.2	965	67.0
<i>I feel I do not have much to be proud of</i>	1055	37.5	579	41.1	461	33.7	506	36.7	549	38.3
<i>I certainly feel useless at times</i>	1370	48.9	651	46.5	698	51.1	661	48.0	709	49.7
<i>I wish I could have more respect for myself</i>	1625	58.1	766	54.6	838	61.6	784	57.2	841	58.9
<i>All in all, I am inclined to feel that I am a failure</i>	602	21.4	315	22.3	280	20.5	295	21.3	307	21.5
POSITIVE SELF-ESTEEM										
<i>I feel that I have a number of good qualities</i>	2658	93.3	1359	95.1	1261	91.3	1301	93.2	1357	93.4
<i>I am able to do things as well as most other</i>	2674	93.9	1344	94.3	1293	93.6	1302	93.2	1372	94.6

<i>people</i>										
<i>I am quite good at sport</i>	2257	79.6	1188	83.6	1035	75.2	1108	79.8	1149	79.4
<i>My being happy is important to my parents</i>	2711	95.4	1352	95.1	1325	95.8	1334	95.9	1377	95.0
<i>I have plenty of interests and hobbies</i>	2213	78.0	1139	80.1	1042	75.7	1094	78.8	1119	77.3
<i>On the whole, I am satisfied with myself</i>	2484	88.0	1283	91.1	1165	84.6	1227	88.9	1257	87.1
<i>I feel that I am valuable person at the same level as others</i>	2401	85.2	1213	86.0	1155	84.3	1187	85.6	1214	84.8
<i>I have a positive attitude toward myself</i>	2525	89.4	1288	91.4	1204	87.4	1229	88.9	1296	89.9

Table 8. Negative and positive self-esteem by gender and age: results of descriptive analysis

11.1.11. DECISION-MAKING AND REFUSAL SKILLS

Table 9 shows the result of negative and positive decision-making skills, as well as refusal skills. In terms of negative decisions, changing decisions several times a day (78.0%) and making a quick decision (74.0%) were the most prevalent. Among all listed, the most prevalent positive decision making skill was that of carrying through their decisions (92.1%). Regarding gender differences, boys reported less concern about what their friends thought about decisions they had made (32.7% vs. 20.0) than girls. Moreover, boys reported having more negative decision-making skills than girls, especially when it comes to thinking about the consequences (36.0% vs. 25.7%). Similar results were obtained for both age groups.

Regarding refusal skills, 14.6% of adolescents reported they would buy alcohol if suggested by friends. As an example question showed, boys had lower refusal skills to friends' suggestion to drink alcohol than girls, e.g. 18.9% of the boys reported they would buy alcohol on friends' suggestion, while 10.0% of the girls reported they would do the same. In terms of age, 18.3% of adolescents older than 13 would take alcohol to celebrations, which is almost doubled compared to younger adolescents (10.7%).

These are statements about your views on how you make decisions.										
	Overall (2946)		Gender (2904)				Age (2946)			
			Boys (1479)		Girls (1425)		<=12 (1448)		>=13 (1498)	
	N	%	N	%	N	%	N	%	N	%
NEGATIVE DECISION-MAKING SKILLS										
<i>I often make up my mind without thinking on consequences</i>	883	31.0	515	36.0	354	25.7	424	30.2	459	31.8
<i>Sometimes I decide on something "off the top of my head"</i>	2103	74.0	1051	73.7	1022	74.1	1016	72.4	1087	75.5
<i>When I get an idea I often make a decision without thinking</i>	1347	47.4	711	49.9	617	44.7	648	46.2	699	48.5
<i>Sometimes I change my mind several times a day</i>	2222	78.0	1137	79.5	1058	76.7	1089	77.8	1133	78.3
<i>When I decide on something doesn't matter what my parents think</i>	495	17.4	290	20.3	197	14.2	211	15.0	284	19.7
POSITIVE DECISION-MAKING SKILLS										
<i>When I have decided to do something, I always carry it through</i>	2640	92.1	1298	90.5	1307	93.8	1301	91.9	1339	92.3
<i>I weight up all the choices before I decide on something</i>	1954	68.8	977	68.6	952	69.0	977	69.8	977	67.8
<i>I seldom decide to do something that I later regret</i>	2107	73.9	1043	72.8	1036	75.1	1051	74.9	1056	73.0
<i>When I decide on something it doesn't matter what my friends think</i>	754	26.5	466	32.7	277	20.0	364	26.0	390	26.9
REFUSAL SKILLS										
<i>You and your friend pass the test, and feel now it is time to celebrate. Have the liquor store in nearby. Your friend suggests you could buy alcohol to celebrate. Would you buy some alcohol?</i>	418	14.6	272	18.9	139	10.0	151	10.7	267	18.3

Table 9. Decision-making and refusal skills by gender and age: results of descriptive analysis

11.2. RESULTS OF CHI SQUARED (χ^2) AND BIVARIATE LOGISTIC REGRESSION ANALYSES

Analytical sample indicated that out of the 2946 adolescents, included in this study, 59.4% of them drank during their lifetime. A descriptive model is separated by those who drank and those who did not drink during their lifetime. Statistically significant bivariate associations were shown for the most of the studied factors.

11.2.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS

Table 10 shows socio-demographic characteristics (gender, age, and SES of the school area) and their association with lifetime drinking. The sample mean age was 12.9 (SD 0.6). The chi-squared test showed that lifetime drinking was dependent on gender and socioeconomic status of the school area with strong statistical significance. Lifetime drinking was higher among boys than girls (63.3% boys vs. 55.3% girls) and among adolescents of low SES schools compared to adolescents of middle and high SES schools (low 62.6% vs. middle 61.5% vs. high 51.3%) during their lifetime period (data not shown). In the bivariate analysis, the risk of lifetime drinking was related to age, with 80% increase of risk for each year of increase in age. Boys were associated with 40% higher risk of lifetime drinking compared to girls (OR 1.40, 95% CI 1.20-1.62) with the statistically significant result. Low SES of the school area increased the odds of lifetime drinking by 59% (OR 1.59, 95% CI 1.22-2.06) with the result being statistically significant.

Variables	Overall (n=2923)	Lifetime drinking (n=1737)	Never drinking (n=1186)	Pearson chi square	Crude Odds Ratios	P- value
	N (%)	N (%)	N (%)	X ²	95% CI	
Gender						
<i>Girls</i>	1418 (49.1)	784 (45.8)	634 (54.1)		1	
<i>Boys</i>	1467 (50.9)	929 (54.2)	538 (45.9)	19.310	1.40 (1.20-1.62)	<0.001
Age						
<i>Mean (SD)</i>	12.9 (0.6)	13.1 (0.6)	12.9 (0.6)	69.158	1.80 (1.56-2.08)	<0.001
SES of the school area						
<i>High</i>	637 (21.8)	327 (18.8)	310 (26.1)		1	
<i>Middle</i>	1917 (65.6)	1179 (67.9)	738 (62.2)	22.268	1.51 (1.26-1.81)	<0.001
<i>Low</i>	369 (12.6)	231 (13.3)	138 (11.6)		1.59 (1.22-2.06)	<0.001

Table 10. Socio-demographic characteristics of lifetime drinking vs never drinking: results of bivariate analysis

11.2.2. FRIENDS DRINKING

Table 11 shows friends' drinking and its association with adolescents' lifetime alcohol use. Cross-tabulation showed that adolescents who drank alcohol at least once in their life had more friends who drank than adolescents who did not drink alcohol (more than half of them and all of them 11.8% > 2.0%; less than half and about half 38.9% > 14.4%). Lifetime drinking depends on friends drinking with statistical significance at the level <0.001. The bivariate model shows that friends' drinking was associated with adolescent alcohol use. Having friends who drink alcohol was associated with greater odds of adolescents' lifetime drinking. Having less than half of friends who drink alcohol was associated with increased odds of lifetime drinking more than 5 times (OR 5.70, 95% CI 4.65-6.99) while having more than half of friends drinking was associated with increased odds more than 12 times (OR 12.64, 95% CI 18.09-19.76) with the result being statistically significant.

Variables	Overall (n=2923)	Lifetime drinking (n=1737)	Never drinking (n=1186)	Pearson chi square	Crude Odds Ratios	P- value
	N (%)	N (%)	N (%)	X ²	95% CI	
Friends drinking						
<i>None</i>	1193 (41.2)	489 (28.5)	704 (60.0)	401.273	1	<0.001
<i>Less than half/about half</i>	838 (29.0)	669 (38.9)	169 (14.4)		5.70 (4.65-6.99)	
<i>More than half/All of them</i>	225 (7.8)	202 (11.8)	23 (2.0)		12.64 (8.09-19.76)	
<i>Don't know</i>	636 (22.0)	359 (20.9)	277 (23.6)		1.87 (1.54-2.27)	

Table 11. Friends drinking of lifetime drinking vs never drinking: results of bivariate analysis

11.2.3. FAMILY AND PARENTS

As shown in Table 12, adolescents who drank alcohol at least once during the life had more parents who drank alcohol than adolescents who did not drink (68.8% > 48.0%). The chi-squared test showed that adolescent' drinking status depends on parental drinking, parental monitoring, permissiveness to drink and family climate with statistical significance on the level <0.001. The bivariate unadjusted model indicated that parents who drink alcohol increased the odds of alcohol use among their children more than twice (OR 2.49, 95% CI 2.12-2.93). Adolescents who drank at least once during their lifetime had lower parental monitoring (12.1% > 7.6%), higher parental permissiveness to drink (14.7% > 1.9%) and worse family climate (31.6% > 20.5%) than those adolescents who did not drink alcohol. The results indicated that parental permissiveness to drink alcohol (OR 13.32, 95% CI 8.53-20.82) was related to greater odds of lifetime drinking. Low parental monitoring was associated with 84% greater increase of lifetime drinking (OR 1.84, 95% CI 1.42 - 2.38), while the bad family climate was related to 79% higher odds of lifetime drinking (OR 1.79, 95% CI 1.50-2.13).

Variables	Overall (n=2923)	Lifetime drinking (n=1737)	Never drinking (n=1186)	Pearson chi square	Crude Odds Ratios	P- value
	N (%)	N (%)	N (%)	X ²	95% CI	
Parents' drinking						
<i>No</i>	934 (32.5)	427 (25.0)	507 (43.4)	127.810	1	<0.001
<i>Yes</i>	1735 (60.3)	1175 (68.8)	560 (48.0)		2.49 (2.12-2.93)	
<i>Don't know</i>	208 (7.2)	107 (6.3)	101 (8.7)		1.26 (0.93-1.70)	
Parental permissiveness to drink						
<i>Wouldn't allow</i>	1631 (56.6)	754 (44.1)	877 (75.0)	308.244	1	<0.001
<i>Wouldn't allow at home</i>	446 (15.5)	337 (19.7)	109 (9.3)		3.60 (2.84-4.56)	
<i>Would allow</i>	274 (9.5)	252 (14.7)	22 (1.9)		13.32 (8.53-20.82)	
<i>Don't know</i>	530 (18.4)	368 (21.5)	162 (13.9)		2.64 (2.14-3.26)	
Parental monitoring						
<i>High</i>	2570 (89.2)	1492 (86.9)	1078 (92.4)	21.805	1	<0.001
<i>Low</i>	312 (10.8)	224 (12.1)	88 (7.6)		1.84 (1.42-2.38)	
Family climate						
<i>Good</i>	2098 (72.9)	1173 (68.4)	925 (79.5)	42.695	1	<0.001
<i>Bad</i>	780 (27.1)	541 (31.6)	239 (20.5)		1.79 (1.50-2.13)	

Table 12. Parental drinking, parental permissiveness to drink, parental monitoring and family climate of lifetime drinking vs never drinking: results of bivariate analysis

11.2.4. PERSONAL SKILLS

Table 13 represents individual characteristics and their association with adolescent lifetime drinking. Compared to adolescents who never drank alcohol, those who drank alcohol had higher positive beliefs toward alcohol (36.6% > 22.4%), lower self-esteem (32.5% > 20.6%), lower decision-making skills (16.8% > 12.6%) and lower refusal skills on alcohol (21.8% > 3.6%). The chi-squared test showed that lifetime drinking was associated with personal skills on the significance level <0.001. Bivariate association showed that adolescents with high positive beliefs toward alcohol were twice as likely to drink as adolescents who have low positive beliefs on alcohol (OR 2.00, 95% CI 1.69-2.37). Adolescents with low self-esteem were 1.85 times more likely to drink at least once during their life (OR 1.85, 95% CI 1.55-2.21). The odds ratio for the relationship between low decision-making skills and lifetime drinking was 1.39 (OR 1.39, 95% CI 1.12-1.73). Adolescents with low refusal skills had a seven-time higher probability of engagement in lifetime drinking compared to adolescents with high refusal skills (OR 7.58, 95% CI 5.44-10.57).

Variables	Overall (n=2923)	Lifetime drinking (n=1737)	Never drinking (n=1186)	Pearson chi square	Crude Odds Ratios	P- value
	N (%)	N (%)	N (%)	X ²	95% CI	
Positive beliefs toward alcohol						
<i>Low</i>	1949 (69.1)	1063 (63.4)	886 (77.6)		1	
<i>High</i>	870 (30.9)	614 (36.6)	256 (22.4)	64.166	2.00 (1.69-2.37)	<0.001
Self-esteem						
<i>High</i>	2050 (72.3)	1143 (67.5)	907 (79.4)		1	
<i>Low</i>	787 (27.7)	551 (32.5)	236 (20.6)	48.046	1.85 (1.55-2.21)	<0.001
Decision-making skills						
<i>High</i>	2410 (84.9)	1409 (83.2)	1001 (87.4)			
<i>Low</i>	429 (15.1)	284 (16.8)	145 (12.6)	9.053	1.39 (1.12-1.73)	0.003
Refusal skills on alcohol						
<i>High</i>	2443 (85.6)	1329 (78.2)	1114 (96.5)		1	
<i>Low</i>	412 (14.4)	371 (21.8)	41 (3.6)	185.982	7.58 (5.44-10.57)	<0.001

Table 13. Beliefs toward alcohol, self-esteem, decision-making skills and refusal skills on alcohol of lifetime drinking vs never drinking: results of bivariate analysis

11.3. RESULTS OF THE MULTIVARIATE LOGISTIC REGRESSION ANALYSIS

Table 14 shows the results of the multivariate logistic regression analysis. The main model of lifetime alcohol use included 2614 subjects.

Male gender was associated with 24% higher risk of lifetime drinking compared to the female gender (OR 1.24, 95% CI 1.03-1.49). The risk of ever drinking was related to age, with 25% increase of risk for each year of increase in age (OR 1.25, 95% CI 1.05-1.49). This result confirmed the association observed in the unadjusted analysis. Middle and low socioeconomic statuses of the school area were significantly related to the risk of lifetime drinking. The probability of increased risk for lifetime drinking was 37% greater for adolescents attending middle SES of the school area (OR 1.37, 95% CI 1.10-1.70) and 54% greater for adolescents of low SES of the school area (OR 1.54, 95% CI 1.13-2.11). Hypothesis 4 which stated that male gender, older adolescents, and adolescents of low SES of the school area were associated with increased odds of lifetime drinking was confirmed by multivariate logistic regression analysis.

Results examining parental behaviour indicated that having parents who drink alcohol was associated with 55% increase in the odds of lifetime drinking (OR 1.55, 95% CI 1.27-1.88). After the adjustment, parental permissiveness to drink was the strongest factor associated with adolescent lifetime drinking: five times increased odds of lifetime drinking if parents allowed drinking at all (OR 5.16, 95% CI 3.17-8.39), and twice increased odds of lifetime drinking if parents allowed drinking out of their home (OR 2.42, 95% CI 1.85-3.16). Having experienced bad family climate, as well as low parental monitoring did not show statistically significant results. Hypothesis 1 which stated that parental and family characteristics were associated with increased odds of lifetime drinking was partly confirmed by multivariate regression analysis. Indeed, parental drinking and permissiveness to drink were confirmed as being significantly associated with lifetime drinking, while low parental monitoring and low family climate were not confirmed as being significantly associated with lifetime drinking.

The second strongest predictor of lifetime alcohol use was exposure to drinking friends. Adolescents were at three times higher likelihood of lifetime drinking if about half of their friends drink (OR 3.62, 95% CI 2.87-4.57). The association between adolescents' and friends' drinking is four times higher among those adolescents who have most of their friends drinking (OR 4.36, 95% CI 2.63-7.23). The more friends drink, the greater likelihood of adolescent's lifetime drinking. Hypothesis 2 which stated that friend's drinking was associated with increased odds of lifetime drinking was confirmed by multivariate regression analysis.

High positive beliefs toward alcohol were associated with 41% increased odds of lifetime drinking (OR 1.41, 95% CI 1.15-1.73). Low self-esteem was associated with increased the odds of lifetime drinking by 50% (OR 1.50, 95% CI 1.21-1.85). Adolescents who had low decision-making skills were 1.46 times as likely to drink alcohol during the lifetime (OR 1.46, 95% CI 1.13-1.90). The strongest variable among personal factors was low refusal skills on

alcohol. Adolescents with low refusal skills were about three times more likely to drink alcohol (OR 3.24, 95% CI 2.22-4.75). Hypothesis 3 which stated that personal characteristics were associated with increased odds of lifetime drinking was confirmed by multivariate regression analysis. Indeed, all four factors variables were confirmed as being significantly associated with lifetime drinking.

Variables		Overall sample (2614)	
		Adjusted Odds Ratios (95% CI)	P-value
Gender	<i>Girls</i>	1	
	<i>Boys</i>	1.24 (1.03-1.49)	0.021
Age	Cont	1.25 (1.05-1.49)	0.013
SES of the school area	<i>High</i>	1	
	<i>Middle</i>	1.37 (1.10-1.70)	0.005
	<i>Low</i>	1.54 (1.13-2.11)	0.007
Parents' drinking	<i>No</i>	1	
	<i>Yes</i>	1.55 (1.27-1.88)	<0.001
	<i>Don't know</i>	0.80 (0.56-1.16)	0.239
Parental permissiveness to drink	<i>Wouldn't allow</i>	1	
	<i>Wouldn't allow at home</i>	2.42 (1.85-3.16)	<0.001
	<i>Would allow</i>	5.16 (3.17-8.39)	<0.001
	<i>Don't know</i>	1.86 (1.45-2.38)	<0.001
Parental monitoring	<i>High</i>	1	
	<i>Low</i>	1.22 (0.89-1.68)	0.212
Family climate	<i>Good</i>	1	
	<i>Bad</i>	1.13 (0.91-1.41)	0.256
Friends drinking	<i>None</i>	1	
	<i>Less than half/about half</i>	3.62 (2.87-4.57)	<0.001
	<i>More than half/All of them</i>	4.36 (2.63-7.23)	<0.001
	<i>Don't know</i>	1.50 (1.19-1.87)	<0.001
Positive beliefs toward alcohol	<i>Low</i>	1	
	<i>High</i>	1.41 (1.15-1.73)	0.001
Self-esteem	<i>High</i>	1	
	<i>Low</i>	1.50 (1.21-1.85)	<0.001
Decision making skills	<i>High</i>	1	
	<i>Low</i>	1.46 (1.13-1.90)	0.004
Refusal skills on alcohol	<i>High</i>	1	
	<i>Low</i>	3.24 (2.22-4.75)	<0.001

Table 14. Risk factors associated with lifetime alcohol drinking: results of multivariate logistic regression analysis

11.3.1. RESULTS OF STRATIFICATION BY SOCIOECONOMIC STATUS OF THE SCHOOL AREA

Table 15 shows the results of the multivariate logistic model which examined the association between factor variables and lifetime drinking with stratification by socioeconomic status of the school area.

For adolescents attending low SES schools, the statistically significant association was found between parental drinking and adolescent alcohol use (OR 2.02, 95% CI 1.18-3.45). This association indicated twice greater odds of drinking if parents drink. Similarly, parental permissiveness increased the probability of engagement in lifetime drinking: 14 times higher risk of drinking if parents would allow drinking and about twice higher risk if they did not allow drinking at home. Observing the association between predictive variables and adolescent drinking, adolescents of low SES of the school area were mostly influenced by their parents. Moreover, having bad decision-making skills was associated with twice as higher odds of lifetime drinking (OR 2.08, 95% CI 1.03-4.20). Friends' drinking was partially associated with adolescents drinking.

Several factors were related to the risk of lifetime drinking among adolescents of high SES school area. Male gender predicted a 50% higher probability of drinking (OR 1.50, 95% CI 1.01-2.22). The probability of ever drinking was related to age, with 58% increase of risk for each year of age increment (OR 1.58, 95% CI 1.08-2.31). There was a significant association with adolescent alcohol use when parents consumed alcohol (OR 1.54, 95% CI 1.01-2.35). Parental permissiveness to drink was partially associated with lifetime alcohol use. Those who had less than half of friends who drank alcohol were 5.25 times more likely to drink (OR 5.25, 95% CI 3.09-8.90), while those who had more than half of friends who drank were 8.40 times respectively more likely to drink (OR 8.40, 95% CI 2.29-30.85). Low self-esteem was associated with 83% higher likelihood of lifetime alcohol use (OR 1.83, 95% CI 1.12-3.00). Regarding skills, adolescents of high SES schools with low refusal skills on alcohol were associated with 4 times greater odds of lifetime drinking (OR 4.74, 95% CI 1.95-11.49). Interestingly, the association between gender and age as factors and lifetime drinking as the outcome was found only among high SES adolescents. It is notable that high SES adolescents were more vulnerable to their friends' drinking in comparison to low SES adolescents.

The greatest number of variables was associated with the lifetime drinking among adolescents of the middle SES schools. Among parental variables, parental drinking (OR 1.48, 95% CI 1.16-1.88) and parental permissiveness to drink (OR 5.67, 95% CI 3.13-10.25 if parents allow drinking, and OR 2.55, 95% CI 1.81-3.59 if parents wouldn't allow drinking at home) were associated with likelihood of drinking among adolescents of middle SES schools. Friends' drinking was associated with three times greater odds of drinking if less than half of friends drink (OR 3.68, 95% CI 2.76-4.91) and four times greater odds if more than half of friends drink (OR 4.67, 95% CI 2.47-8.84). Among personal characteristics, positive beliefs toward alcohol (OR 1.48, 95% CI 1.15-1.90), low self-esteem (OR 1.47, 95% CI 1.14-1.91), and low

refusal skills (OR 3.28, 95% CI 2.07-5.22) were associated with increased odds of lifetime alcohol use.

Variables	High SES schools (573)		Middle SES schools (1705)		Low SES schools (336)		
	Adjusted OR (95% CI)	P	Adjusted OR (95% CI)	P	Adjusted OR (95% CI)	P	
Gender							
	<i>Girls</i>	1	1		1		
	<i>Boys</i>	1.50 (1.01-2.22)	0.045	1.17 (0.93-1.47)	0.180	1.27 (0.76-2.11)	0.361
Age		1.58 (1.08-2.31)	0.019	1.16 (0.93-1.44)	0.179	1.19 (0.71-1.97)	0.508
Parents drink							
	<i>No</i>	1	1		1		
	<i>Yes</i>	1.54 (1.01-2.35)	0.046	1.48 (1.16-1.88)	0.002	2.02 (1.18-3.45)	0.010
	<i>Don't know</i>	0.47 (0.18-1.24)	0.128	0.87 (0.57-1.34)	0.540	0.79 (0.26-2.33)	0.665
Parental permissiveness to drink							
	<i>Wouldn't allow</i>	1	1		1		
	<i>Wouldn't allow at home</i>	2.00 (1.12-3.59)	0.019	2.55 (1.81-3.59)	<0.001	2.56 (1.25-5.24)	0.010
	<i>Would allow</i>	2.59 (0.95-7.08)	0.063	5.67 (3.13-10.25)	<0.001	14.93 (1.87-119.33)	0.011
	<i>Don't know</i>	1.49 (0.86-2.58)	0.153	1.85 (1.36-2.52)	<0.001	3.35 (1.56-7.18)	0.002
Parental monitoring							
	<i>High</i>	1	1		1		
	<i>Low</i>	0.98 (0.46-2.07)	0.950	1.31 (0.89-1.93)	0.167	1.04 (0.41-2.63)	0.941
Family climate							
	<i>Good</i>	1	1		1		
	<i>Bad</i>	1.33 (0.80-2.20)	0.274	1.01 (0.77-1.32)	0.947	1.60 (0.86-2.98)	0.139
Friends drinking							
	<i>None</i>	1	1		1		
	<i>Less than half/about half</i>	5.25 (3.09-8.90)	<0.001	3.68 (2.76-4.91)	<0.001	2.05 (1.09-3.87)	0.026
	<i>More than half/All of them</i>	8.40 (2.29-30.85)	0.001	4.67 (2.47-8.84)	<0.001	1.85 (0.59-5.83)	0.295
	<i>Don't know</i>	1.65 (1.03-2.65)	0.046	1.56 (1.17-2.06)	0.002	1.11 (0.56-2.22)	0.759
Positive beliefs toward alcohol							
	<i>Low</i>	1	1		1		
	<i>High</i>	1.35 (0.86-2.10)	0.191	1.48 (1.15-1.90)	0.003	1.27 (0.70-2.29)	0.427
Self-esteem							
	<i>High</i>	1	1		1		
	<i>Low</i>	1.83 (1.12-3.00)	0.017	1.47 (1.14-1.91)	0.003	1.24 (0.68-2.27)	0.478
Decision making skills							
	<i>High</i>	1	1		1		
	<i>Low</i>	1.64 (0.90-2.98)	0.107	1.29 (0.93-1.78)	0.127	2.08 (1.03-4.20)	0.041
Refusal skills on alcohol							
	<i>High</i>	1	1		1		
	<i>Low</i>	4.74 (1.95-11.49)	0.001	3.28 (2.07-5.22)	<0.001	1.98 (0.65-6.06)	0.65

Table 15. Stratification by socio-economical status of the school area: results of multivariate logistic regression analysis

IV DISCUSSION

The thesis aimed to examine the association between risk factors and adolescent's lifetime drinking in Slovenia and to explore socioeconomic status differences. As this is secondary analysis, investigation of the association between risk factors and lifetime alcohol use among adolescents was based on data collected at baseline in the Slovenian evaluation trial. Although alcohol use decreases, it still continues to be a big problem among adolescents (ESPAD 2015). Even if underage drinking is illegal, a lot of adolescents purchase alcohol because it is easily available in Slovenia. The thesis focused on lifetime alcohol use among adolescents aged 12-14 because it is empirically proved that alcohol use in adolescence may lead to many negative health and social consequences in future. In order to prevent these multiple consequences, risk factors for such behaviours should be determined and prevention programs should be oriented toward detecting risk behaviours at adolescent ages. Although the scientific literature clarified the influence of parental and peer behaviours on adolescent alcohol use, there were not many studies conducted in Slovenia on this issue. Also, social status differences were scarcely studied in Slovenia. The present study involved more than 2000 adolescents from 44 Slovenian schools, so it adds new evidence from the European context. Results of this study showed that when taking into consideration factors from different areas of adolescents' life, some of them have a greater influence on adolescent drinking than the others.

- Socio-demographic characteristics

The risk of drinking was associated with male gender and age increment, consistent with previous literature (Anderson 2011; Song, 2012). Boys' greater engagement in drinking may be related to performing masculine roles (Schulte, 2009; Iwamoto, 2014). Boys may be motivated to conform their behaviour to masculine social norms imposed by friends and society in order to show their manhood (Iwamoto, 2011; Iwamoto, 2013). Moreover, boys are monitored and supervised less by their parents than girls. However, in descriptive analysis, smaller differences in alcohol use were found between boys and girls. Congruently, the ESPAD and the HBSC documented increased rates of drinking among girls which resulted in narrowing gender gap during the last years (ESPAD 2015; Inchley 2013). Regarding age, aging is characterised by increased autonomy, reduced supervision by parents and spending more time with friends who may encourage adolescents to engage in drinking (Anderson, 2006; Brown, 2008; Chuang, 2009; Inchley, 2013; Patrick, 2010). Thus, alcohol use becomes perceived more as normative behaviour (Martino, 2016). In line with the previous studies, low SES of the school area appears to be associated with higher probability of involvement in lifetime alcohol use (Hill, 2015). There are many contradictions between studies. Some studies have found high SES to be associated with adolescent drinking, while some others have found low SES to be associated with alcohol use. This may be due to different measures of socioeconomic status. In this study, the measure of socioeconomic status was more similar to those of Hill (2015) based on the socioeconomic status of the school area. Low SES may

lead to greater problem behaviours because of limited opportunities (Jessor, Donovan and Costa, 1991), such as low material resources, limited access to social and health security, limited access to better education and well-paid jobs, stigmatisation, discrimination and deprivation. Economic hardship which forces parents to stay long working hours at their job or even to have multiple jobs may result in lack of supervision of their children (Hemovich, 2011). Moreover, stress that arises from financial problems (Inchley, 2013; Sweeting, 2014; Conger, 2010) may increase drinking. Low SES may increase adolescent's probability of alcohol use through parental conflicts and disruptive parenting that may arise from stress caused by economic problems (Conger, 2010). It is also possible that adolescents feel under greater stress because of having lower financial resources to afford certain goods than their peers which make them vulnerable to substance use in order to achieve higher self-image. Since lower SES is related to lower education attainment, adolescents may engage in drinking in order to achieve social success (Sweeting, 2015).

Hypothesis 4 which stated that male gender, older adolescents, and adolescents from low socioeconomic status are more likely to involve in alcohol use was confirmed through this study. The hypothesis is confirmed by multivariate logistic regression model in which the odds of becoming involved in alcohol use are greater for boys, older age, and low SES adolescents.

- Family and parents

Situations in family are important for adolescent's development and can impact adolescent's decisions regarding alcohol use. Results of the present study indicated that adolescents whose parents drink have an increased risk of drinking, confirmed by many other studies (Kovacs, 2008; Latendresse, 2008). This may be because children observe their parents' behaviour and imitate them trying to show that they belong to adult-lifestyle (Silbereisen et al, 1990). Social learning theory explains that adolescents shape their beliefs, attitudes, and perceptions on the basis of what they have learned and saw from the people around, and the closest people to them are family and, later, friends (Bandura, 1971; Bandura, 1977). Adolescents learn through the observation of others, in this case, parents, and if they observed their parents drink and that this is acceptable behaviour, there is a great chance they will imitate them. Descriptive results showed that there are almost twice as more parents who drink alcohol than parents who do not drink alcohol. As Slovenia is known as a "wet" country, it is not rare that people use alcohol on almost every occasion. However, it is important how their children perceive their drinking. If they perceive parental drinking as acceptable and normal, there is greater chance that children will also use alcohol. Children of drinking parents may perceive alcohol as less harmful and involve in drinking earlier (Hawkings 1997). Although few sips of alcohol are not seen as risky behaviours in adulthood, it is seen as a risky behaviour in adolescence because early initiation and experimentation with alcohol may lead to harmful drinking in future life-course. In the present study, parental permissiveness to drink emerged as the strongest factor associated with their children's drinking. It is possible that parental permissiveness may be related to parental drinking status and attitudes toward alcohol use. In

line with previous studies, parental permissiveness has great influence on drinking among adolescents (Donovan, 2004; Igra, 1996). On the contrary, Mrug and McCay (2013) stated that parental disapproval of alcohol use lowered the likelihood of alcohol use.

Although low parental monitoring was associated with increased likelihood of drinking behaviour in bivariate analysis, this association was lost in the multiple-regression model. However, it is worth mentioning that previous literature highlighted the importance of parental monitoring on adolescents alcohol use (Habib et al, 2010). Because of modern lifestyle, parents are occupied with their job and earning money, so they may not be able to spend enough time with their children what makes them unable to monitor leisure time and activities of their children. Some parents have to take two jobs in order to secure safety and existence of their children. In that situations, some children may think that they are free enough to do what they want because their parents do not pay enough attention to them and their out-of-home activities. Moreover, they may look for the acceptance in their friends and peers who may drag them into the involvement in risk behaviours. Although not significant in multiple-regression model, previous literature suggested that poor family management, such as low control, the negative relationship in the family, and conflicts may lead to adolescent alcohol use (Cerkez, 2015; Habib, 2010; Igra, 1996; Kristjansson, 2009; Mathijssen, 2014; Shucksmith, 1997; Visser, 2012). Situations in family influence adolescents behaviour and may be of great importance for involvement in risk behaviour, such as alcohol use. Family environment in which children grow up and develop their identity is important for becoming independent physically, emotionally, and cognitively adult person who is responsible for their own behaviour. That is why adolescents need a stable home environment that will provide them secure emotional base from which they can explore and experience the world. If the environment in which they grow does not function very well, risk behaviours may emerge.

Moreover, social learning theory motivated me to set this hypothesis and investigate if adolescent's drinking is the reflection of parental drinking through the process of observation and imitation. Hypothesis 1 which stated that parental alcohol use and family characteristics have a significant association with adolescent's drinking was partly confirmed. The first part of hypothesis which stated that parental drinking has an impact on adolescent's drinking was confirmed by the multivariate model. Moreover, parental permissiveness to drink was confirmed as being associated with adolescent's drinking. From the cross-tabulation of adolescents who drank at least once during the life and those who never drank, it is notable that more adolescents drink if their parents drink, if parental monitoring is low, if parents allow them to drink, and if the family climate is bad. Bivariate logistic regression model confirmed the association between all family variables and adolescent lifetime drinking. Furthermore, low parental monitoring and bad family climate showed weakness in the multivariate model. Although significant results were not confirmed for family climate and parental monitoring in the multivariate regression model, this does not mean that bad family climate and low parental monitoring were not associated with adolescents' involvement in alcohol use, but that the other factors have a stronger influence on adolescents' drinking. So, when we take all the factors into consideration, some factors are stronger than the other ones and this was exactly what happened with the variables family climate and monitoring. To

summarize, findings on parental influences were partly confirmed. Parental alcohol use and permissiveness to drink were confirmed as being associated with drinking in adolescence, while family climate and parental monitoring were not.

- Friends' drinking

Consistently with previous studies, the results suggested that friends have a strong impact on adolescent's behaviours (Mrug and McCay, 2013). Indeed, adolescents' drinking had a stronger association with friends' drinking than with parental drinking, parental monitoring, and family climate. Among all identified factors, the second strongest effect on adolescent drinking was involvement with friends who drink with a dose-response effect: with an increased number of friends who drink, the risk of drinking among adolescents increases, consistent with the findings of Anderson's study (2010). There are many reasons for such influence: adolescent's perception of friends' drinking makes it desirable and normative, friends' may increase the availability of alcohol, and adolescents can be under the pressure of peers to drink (Simons-Morton, 2004). In order to be accepted by the friends' group, adolescents perform the same behaviour by conforming to the social norms by their friends, as implied by the social norm theory (Berkowitz, 2003). Adolescence is a period of migration from parents to friends and friends' behaviours seem to be more acceptable at that age (DiClemente, Hansen and Ponton, 1996). Friends who drink alcohol may push adolescent toward drinking because of their own drinking status, through the pressure to drink, and approval of drinking. Many adolescents find it easier to drink alcohol than not being the part of the peer group (Ajzen and Fishbein, 2005). Such behaviour may be explained by vicarious reinforcement described in social learning theory which states that observing social models being rewarded for aggressive behaviour increases the likelihood of this behaviour in the observer. In other words, it is not important what model does, but what are the consequences of model's behaviour. If an adolescent observed that drinking alcohol has positive consequences such as being popular, "cool", or being part of a peer group, he/she will learn and imitate that behaviour in order to gain the same effect of drinking (Muuss, 1996).

Hypothesis 2 which stated that friends' drinking is one of the strongest factors for adolescent's involvement in alcohol use was based on the problem behaviour theory. Namely, the PBT stated that friends' models for problem behaviour belong to the proximal structure variables which are directly linked to problem behaviours. Because this variable is so proximal, it should have a stronger association with problem behaviour than any other variable. Findings of the present study are consistent with the problem behaviour theory from which it results that friends' model for drinking results with observers' greater involvement in the same behaviour (Jessor and Jessor, 1977). This hypothesis is confirmed by the multivariate logistic regression model in which the odds of becoming involved in alcohol use are greater if adolescents have friends who drink alcohol.

- Personal factors

As already known, personal factors have great influence on the behaviours and decisions we make. Adolescents are influenced by many factors from their environment that contribute to the shaping of their attitudes and beliefs about alcohol. Beliefs are based on personal experience, observation, or information received by other people. As beliefs are the basis for developing attitudes and intentions to behave in a certain way, they play an important part in determining behaviour (Ajzen and Fishbein, 2005). The results of this study suggest that positive beliefs toward alcohol are positively associated with drinking among adolescents. These findings are in line with Willner (2001) and Anderson (2010) studies which suggested that positive beliefs toward alcohol increase the risk of alcohol use. Slovenian adolescents perceive alcohol as a way of having better fun, being “cool”, forgetting the problems, etc., which makes them prone to experimentation with alcohol (Dekleva, 1998; Hibell, 2011; Zalta, 2008). That happens because adolescents misperceive alcohol as a normative behaviour. That misperception leads to the involvement in unhealthy behaviour because it is perceived to be accepted and avoiding health behaviour because it is perceived as non-accepted (Berkowitz, 2002; Berkowitz, 2003). Adolescents want to conform to the misperceived norms because they believe that behaviour they exert is accepted by the peer group. In order to not be expelled from the peer group, adolescents refrain from expressing discomfort with that behaviour (Berkowitz, 2002; Berkowitz, 2003). To summarize, “everybody drinks more because everybody thinks that everybody drinks more” (Berkowitz, 2002; Berkowitz, 2003).

Low self-esteem was associated with increased probability of involvement in alcohol use, consistent with problem behaviour theory (Jessor and Jessor, 1977). This statement can be related to Prinstein and Dodge (2008) findings where they found that negative peer influences are more likely to occur among adolescents with low self-esteem. From the psychological point of view, a greater sense of social awareness through the influence of significant others arises in adolescence. Issues of self-esteem are likely to arise in adolescence. Self-esteem at that age refers to the measure between adolescents’ self-image and ideal self. Moreover, self-esteem refers on how one feels about one's self-concept, or, in other words, how much one likes to perceive oneself and how much he/she feels about certain parts of himself/herself. The physical changes that happen in adolescence may strongly influence their self-esteem because physical appearance is one of the most important indicators that determine self-esteem. “Low self-esteem happens if there is a gap between one's self-concept and what one believes one should be like” (American Psychological Association, 2009). Due to modern lifestyle, false ideals, un-reasonable images of the body, and behaviours that are received through the media, adolescents may not be capable of thinking by themselves. However, their measure of the ideal and beauty goes through the opinion of the others. Adolescents respond in different ways on low self-esteem and one of that responses may be an involvement in risk behaviours because they may believe that their self-esteem will arise if they drink or exert other risk behaviours.

In line with the previous study, adolescents with low decision-making skills were more likely to drink alcohol than adolescents with high decision-making skills (Stephens et al, 2009). Decisions that adolescents make are related to many other functions, such as their attitudes

toward alcohol use and information they have about alcohol consumption. Intentions are the results of decision-making the process that includes evaluation of the actions and its possible consequences. Adolescents may think that social and physiological effects of drinking are worth the costs and so the decision of drinking is made (Ajzen and Fishbein, 2005). Adolescent's decisions regarding alcohol may be influenced by what they believe their friends do (Beckmeyer, 2015). If adolescents get information from their peers that drinking is fun and "cool", there is a great probability that their decision will be inclined toward their peers' information. Adolescent's decisions may be influenced by beliefs and misperceptions of social norms. So, before the behaviour performance, adolescents have decided to do it or not to do it (Ajzen and Fishbein, 2005).

Positive beliefs toward alcohol, low self-esteem, and low decision-making skills may lead to low resistance skills to peers influence and development of alcohol use in future (Willner, 2001). Low refusal skills were associated with greater odds of lifetime drinking. Probably, with an increased offer of alcohol by peers, refusal skills become lower and adolescents more often involve in risk behaviours. Literature suggested that resilient adolescents have higher self-esteem, which means that their resilient skills are influenced by many other individual and social characteristics (DiClemente, Hansen and Ponton, 1996). "Resilience is seen as the internal strength or awareness of a difficult reality combined with a commitment to achieve one's goals despite the negative circumstances to which one has been exposed" (DiClemente, Hansen and Ponton, 1996). In the terms of alcohol use, resilience may be represented as a social skill to struggle against peer pressure that pushes them toward alcohol use.

Hypothesis 3 stated that personal factors have a strong association with adolescent alcohol use. This hypothesis was confirmed by this study. Personal factors were represented by beliefs, self-esteem, decision-making skills, and refusal skills. All four of them proved to be significantly associated with the lifetime alcohol use among Slovenian adolescents.

- Socioeconomic status of the school area

To my knowledge, there are not many studies that examined SES characteristics as a risk factor when examining other potential factors. Less attention has been paid to inequalities related to the socioeconomic status. Early socioeconomic exposures have effects on lifelong health and represent an important factor for the development of unhealthy or healthy behaviours. Some differences in risk factors emerged when stratified by socioeconomic status.

Adolescents attending low SES of the school area were associated with greater odds of drinking if their parents drink and if their parents are permissive toward drinking. These two variables had the strongest association with lifetime drinking among low SES adolescents. These results suggested that adolescents of low SES schools are more susceptible to parental behaviour than adolescents from the other SES groups. One reason may be that parents from low SES drink more often than the parents from the other SES groups because of stressful living conditions or because they do not perceive the risk associated with the behaviour. Furthermore, it is possible that through the process of observation their children imitate them.

It was also reported that low SES adolescents are more sensitive to parental modelling (Spijkerman, Eijnden and Huiberts, 2008). Wilkinson and Pickett (2009) assumed that people at the bottom of society suffer more problems because circumstances in which they live cause their problems and because they are more prone to problems which drag them down. As low SES is related to lower educational background (Henkel, 2016), parents from low SES might not be enough educated about the negative consequences of drinking, so they may be more permissive toward their children's drinking. Furthermore, parents from low SES may drink alcohol more often at home, while high SES parents at some restaurants, so low SES adolescents again have greater chances of seeing their parents drinking. Moreover, low decision-making skills were of great importance for low SES adolescents to involve in alcohol use. Friends who drink alcohol were only partly associated with drinking among low SES adolescents.

The present study has suggested that age and gender played a significant role among adolescents attending high SES schools, but not among adolescents attending middle or low SES schools. Friends who drink, low refusal skills and low self-esteem were also significantly associated with adolescents' drinking. It may be that parents from high SES groups do not spend enough time with their children because they are dedicated to their careers, so adolescents feel that they are not loved enough by their parents and they are turned toward their friends looking for understanding and acceptance. Luthar (2003) suggested that high SES adolescents may be involved in problem behaviour because of excessive pressures to achieve and isolation from parents. Because of constrained relations with their parents, adolescents migrate to peers seeking for alternative behavioural models (Hemovich, Lac and Crano, 2011). Due to the low quality of relationship with their parents, they may develop low self-esteem which may lead to their greater identification with the peer group. Adolescents are motivated to adjust their behaviour to friends' to be socially accepted which makes them vulnerable to peers' pressure (Dusenbury, 1990; Patrick, 2010). Adolescents may also drink in order to achieve positive self-image. Low self-esteem and low resilient skills on alcohol make them vulnerable to friends' influence and pressure to drink. Literature suggests that adolescents are more likely to drink alcoholic beverages as the greater freedom from parental supervision is and as the stronger inclination toward peers is (Silbereisen et al, 1990). Parental alcohol use and parental permissiveness were only partly associated with drinking among high SES adolescents.

The greatest number of factors was associated with drinking among adolescents from the middle SES schools. Variables from all the groups (friends, parents and personal skills) were significant for middle SES adolescents.

In addition, since many behaviours and decisions in adolescence are related to their social environment, it is possible to observe all of the factors in the frame of social context. Indeed, adolescents' behaviour is modified and decisions are made on the basis what they perceive around them. In order to fit into a social network, they conform to norms that may be different from the norms their parents imposed on them. Decisions and beliefs toward alcohol are mostly based on what they think it is acceptable by their peer network. Moreover, their skills may be highly influenced by the same environment depending on the position they have in the social network. In such environment, parents may have a strong effect on their children because their behaviour may buffer the negative effect of the local environment. In order to have clear insight into adolescents' lives and understanding of their functioning, it is important to observe their behaviour considering both social and individual factors because of their mutual relationship. As shown in the present analysis, both social and personal factors have a great impact on adolescents. The only difference is that some factors are stronger compared to the others. Parents and friends are shown to have the strongest influence on adolescents' alcohol use. These two groups of factor may have an impact on adolescents' low or high self-esteem, positive or negative beliefs toward alcohol as well as decisions they will make regard alcohol. So, these personal factors may be understood in the frame of social context. In the perfect world, if adolescents would have strong refusal skills they could be easily resistant to all the negative influences from social surroundings. Since people are social beings who act inside of social processes and are being influenced by changes and conditions in social environment, their behaviour is actually a reflection of social interactions. For a successful socialisation during the already very difficult adolescent period of changes and development, parents should be provided with support in upbringing their children and adolescents should be helped to learn how to deal with social challenges that are imposed to them.

- Study limitations and strength

Findings of this study should be considered in light of several limitations. First, the findings are limited by the cross-sectional nature of the study, which does not allow causal inference. However, most of the factors investigated, such as socio-demographic characteristics, parental drinking, permissiveness to drink, parental monitoring, and self-esteem, should naturally precede the outcome, therefore limiting the risk of reverse causation. Moreover, risk factors were investigated by applying a multivariate logistic regression model, taking into account a large number of confounders. So, although we cannot exclude uncontrolled confounding, the risk of attributing causal pathway to a factor should be minimized. Missing values reduced the sample for the adjusted analyses. However, 2614 subjects were included in the multivariate model, which is still a big sample. Parents were not directly interviewed so the information on them is perceived and referred by pupils. Adolescents' perceptions of parental disapproval may not accurately reflect parental behaviour. All the information, including the experiences and behaviours of participants, were self-reported, and this could weaken the reliability of the information provided. However, the anonymous administration of the questionnaire is likely to attenuate this risk. Finally, the measurement of socioeconomic status may not be so reliable, because it could happen that not everybody attending the same school belongs to the same SES. On the other hand, it is difficult to measure the real socioeconomic status today, because many people do not behave in accordance with their real income opportunities. In other words, many people who do not have enough money for some basic needs go to holidays, trips, and buy expensive mobile phones just to conform to others. Willkinson and Pickett (2009) wrote in their book: "Some people rather afford a mobile phone than food to keep up with the rest of the society". That statement proves how difficult is to measure SES on the basis of material things.

In spite of all possible limitations, this study has some strength. It is a large study. The enrolment of the schools and the assessment were conducted according to a standardised protocol and a standardised questionnaire, minimizing possible biases related to data collection. The number of items included in the questionnaire was very large allowing the study of a large number of risk factors. Bivariate and multivariate logistic regression models were used to examine the association between factors and outcome. Socioeconomic status differences are also investigated in its depth. It was difficult to compare some of the present findings to the other studies because of the lack of studies investigating the relations between factors and lifetime drinking modified by socioeconomic status.

V CONCLUSION

There is not one particular factor that puts adolescents at risk of drinking alcohol. However, there is a multitude of interrelated causes with no single factor being a sufficient condition for the initiation of alcohol use. Thus, multivariate models have been developed to describe interrelations among diverse factors. These factors may be related to each other or, in other words, the presence of one factor may trigger the presence of the other factor and increase the risk. In order to prevent alcohol use, researchers have to take into consideration all of these factors and include them in the preventive programs.

The present study clarifies the role of parental, social, and personal risk factors on alcohol use among adolescents. Parental permissiveness to drink and friends' alcohol use are confirmed to be the strongest risk factors. This finding implies that adolescents are strongly influenced by the conditions that are happening in their social environment. Family factors have higher effects on adolescents of low SES schools, while friends have higher influence on adolescents of high SES schools. Observing the differences between adolescents of high and low SES schools, adolescents from high SES schools are more sensitive to friends' drinking, low self-esteem, and inability to resist their influence, while adolescents of low SES schools are more sensitive to parental drinking and parental permissiveness to drink.

Parents and friends strongly influence adolescents because adolescents shape their beliefs, attitudes, and perceptions on the basis of what they learned and saw through the interaction with people around them, and the closest people to them are friends and family. By changing their behaviours towards children, parents can prevent adolescent's risk behaviours and that is the reason that parents are of crucial importance in prevention strategies. In order to reduce inequalities in alcohol-related outcomes, prevention efforts towards specific SES schools appear to be a priority for the public health. Parents should be in focus for preventive program toward low SES adolescents, while low refusal skills, peer pressure, and low self-esteem should be in focus for preventive program toward high SES adolescents.

It is well known that social norms in Slovenia express greater tolerance toward alcohol which may be one the most important reasons that Slovenian adolescents exceed European drinking average. Moreover, the number of adolescents who started to drink at the age of 13 or younger increased (2002 year 28.5% < 2014 year 39.5%) (Jeriček Klanšček et al, 2014). The risk for developing alcohol dependence is greater for persons who used alcohol once before in comparison with those who have never experimented with the alcohol. In order to be able to prevent future negative consequences of alcohol use, professionals should work on prevention of early initiation of alcohol use. In that way, many future diseases caused by alcohol use would be prevented and avoided.

Furthermore, information of this study may be helpful in designing preventive programs. Since adolescents are greatly influenced by their social environment, more attention should be paid to the quality of interaction between individual and social environment. Thus, social and educational actors should be oriented toward strengthening social competences because upbringing and education is socially determined. On the other hand, the responsibility of social actors lies on taking responsibility for implementing of such programs that may help individuals to realise the power of their decision-making process. By empowerment of individuals to take control over their own life decisions and social acting, programs of health and social institutions may reach great success. In that process, the role of social pedagogues may be of crucial importance in preventing alcohol use among adolescents and its consequences by designing and implementation of preventive programs in schools. Their understanding of behavioural disorders in the social context may help in planning and implementation of programs. Moreover, social pedagogues may detect risk groups for drinking by deeper insight into social background, skills, living conditions, social competences, family relations and leisure activities. While prevention programs based on pure information have been shown as ineffective, life-skills and social influence prevention programs have been widely effective in the prevention of substance use and other risk behaviours. Based on results obtained from this study, social pedagogues may plan and implement preventive programs which include life skills training with the special accent on strengthening self-esteem, decision-making skills, and refusal skills with the aim of taking control over their own behaviour. Understanding the control they may have over social interactions they make may motivate them to improve the quality of relations with friends and peers. By spreading the knowledge on negative consequences of alcohol use among students and teachers in schools, positive beliefs toward alcohol use may be decreased and teachers may become more interested in taking part in the school prevention programs. Since parental permissiveness was shown to be one of the strongest factors associated with adolescent's alcohol use, social pedagogues may collaborate with parents and communicate them on negative effects of alcohol use in adolescence through meetings or workshops. In that way, parents would be guided and supported in their rearing practices and empowered to strengthen protective factors in family surrounding.

With this thesis I was also interested in providing information on SES differences and how being part of certain SES schools may be important in undertaking risk behaviours. Adolescents attending low SES schools were found to be associated greater involvement in alcohol use, and factors that contributed to involvement in alcohol use for both low and high SES groups were investigated. Reducing social inequalities, providing better living, working, educational, learning and health conditions for low SES families and adolescents attending low SES schools, greater support for parents of low SES in upbringing their children, accessibility of social goods to low SES groups and provision of equal opportunities for success and progress should be one of the main goals of social actors. When talking about social inequalities, accent is rather on deprivation in social context than economical and material resources. Society may contribute to development of risk behaviours by creating the groups that are automatically expelled from education, job market and community because of their social position. As a consequence, inequalities have negative impact on psychical and

mental health, family structure and relations, stress and frustration, leading to involvement in risk behaviours. Hopefully, the present study will motivate future young researchers to understand these issues seriously and take part in dealing with problems affecting our society and individuals.

However, the measurement of social status I offered in this study may not be as good as measures of social status by income, education or family affluence status. Being aware of problematic in definition of socio-economic status measures, I completely encourage future researchers to continue investigating socio-economic status as an important factor for development of certain behaviours. By studying this phenomenon more we may be able to actually do positive changes and decrease social inequalities and its impact on risk behaviours.

Moreover, social pedagogues may work on strengthening protective factors through health promotion activities. Health promotion activities may enhance quality of life and offer alternative leisure activities to adolescents. Through the organization of health promotion activities, orientation toward healthy aspects of life, empowerment, creating positive living conditions and healthy social interactions, much can be achieved in preventing risk behaviours.

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VII ADDITIONAL DOCUMENT (EU-DAP SURVEY)

EU-Dap survey will be added to the thesis.