

Ecological Influences on Youth Alcohol Consumption Patterns: Scoping Review on Studies within the Timeline of 2000-2015

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Abstract

Alcohol-related harms among young adults who consume alcohol at a riskier level do encounter challenges with biological, environmental, psychological and social factors that affect them and the society at large. The aim of this study is to conduct a scoping review on ecological factors; especially the intrapersonal and interpersonal ecological influences on youth alcoholism.

This scoping review covered a total of 26 studies spanning four themes: studies on ethnic, gender, family and peer influences. The review comprises of 13 cohorts and 13 cross-sectional studies.

Eighteen out of 26 studies, showed significant family and peer influences that were closely related to riskier consumption patterns amongst youth. Whereby, sixteen studies indicated that youth consumption patterns are closely related to their ethnic associations. Studies on gender differences revealed that riskier alcohol consumption and associated risk behaviors are more prominent among female within the age range of 18-25-year-olds.

An integrated prevention package that addresses the risk-taking behaviors which are directly associated with health factors among youth is required. Stokols guideline on Social Ecology Model for Health Promotion; which addresses human-environment interactions that involve individual, families and cultural group's prevention and intervention may be a suited approach.

Keywords: Times roman, image area, acronyms, references

1. INTRODUCTION

In 2011, the World Health Organization has estimated that there were 2 billion people worldwide consuming alcohol beverage and 76.3 million had an alcohol use disorder (World Health Organization, 2011). Alcohol-related harms among young adults who consume alcohol at a riskier level do encounter challenges with biological, environmental, psychological and social factors that affect them and the society at large (DeWit, Adlaf, Offord, & Ogborne, 2000);(Wechsler & Nelson, 2015);(Hughes et al., 2011). These challenges may be loftier at a youth level; issues such as alcohol-related harms to an individual, family, and community at large. Hence, as explained by Lang and Rayner the health behaviours of a community at large impacts everyone collectively (Lang & Rayner, 2012).

Evidence has shown that child usually imitates parents behaviours (Gochman, 2013) and this is no different when the use of substance is observed in a household (Simons, Sutton, Simons, Gibbons, & Murry, 2016); (Hadley et al., 2016); (Hayakawa, Giovanelli, Englund, & Reynolds, 2016). It is a usual inference that a child is first exposed to alcohol consumption through family norms or socialization practices and behaviours (Donovan & Molina,

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2011). The ecological aspects of parenting techniques (Barnes, Welte, & Hoffman, 2002), being in a single parent household (Gabel, 1992), parental monitoring and family closeness (Moore, Rothwell, & Segrott, 2010), all had correlations with the levels of children's drinking behaviours. In addition, families that experience violence, conflicts and liberal attitudes towards substance use, alcohol, and petty crime may also expose children to such risky behaviours that may reflect as cultural and societal norms. In two studies conducted among high school students in Malaysia and Taiwan, there was a significant association between young adolescent consumption patterns against the patterns observed in their households (Wan Rozita, Hanjeet Kaur, & Lim, 2005);(Yeh, 2006).

Other than household practices, young adolescents with parental detachment issues tend to form an attachment to their peers (Catalano & Hawkins, 1996). A study done in Lebanon showed that peers opinion and behaviours seem to be a major contributor towards harmful alcohol consumption practices among youth (Barbour, et al, 2013). Similarly, a review on gender differences and factors influencing alcohol use, also found that peer deviant behaviours are reinforce on riskier alcohol use especially among young male consumers (Schulte, Ramo, & Brown, 2009).

Studies throughout the world have shown that gender differences create a unique intricacy among those who consume alcohol at a riskier level; evidence indicates that men are more inclined to have a higher risk of harmful alcohol consumption practices compared to their opposite sex (Helzer et al., 1990);(Hupkens, Knibbe, & Drop, 1993);(Wilsnack, Vogeltanz, Wilsnack, & Harris, 2000). Such risky alcohol consumption patterns are mainly noted among binge consumers even among men in abstinent countries or where low alcohol prevalence is observed within general population (Assanangkornchai, Sam-Angsri, Rerngpongpan, & Lertnakorn, 2010); (Mutalip, Kamarudin, Manickam, Hamid, & Saari, 2014). However, it is important to note that female alcohol consumption patterns have also increased over the years (Mustonen, Metso, Paakkanen, Simpura, & Kaivonurmi, 1999); (Bloomfield, Gmel, Neve, & Mustonen, 2001); (Bergmark, 2004). Therefore, a better understanding of how gender drinking patterns are evolving over time is equally pertinent.

As described above, alcohol consumption patterns do differ in different segments of the population and these differences are driven by culture, ethnic or gender groups which may elevate with certain environmental or social factors. Several studies on ecological theories revolving around alcohol use have discussed and correlated these factors (Vantamay, 2009); (Bogg & Finn, 2009); (Gruenewald, Remer, & LaScala, 2014) to human ecology; that evolve over time (Lang & Rayner, 2012).

The aim of this review is to collate evidence on ecological influences and its impact on youth alcohol consumption patterns. The ecological influences that will be assessed here are a) intrapersonal influences, such as gender and ethnic group association; along with, b) interpersonal influences that interchanges around family and friend's alcohol consumption patterns. This review also aims to address the research gaps in the areas reviewed.

2. METHODS

This study used computer-assisted searches to collate relevant articles. One large database (EBSCO host integrated database) was searched. EBSCOhost integrated database includes many relevant databases like Access Medicine, BMJ Journals, Medline Complete, Google Scholar, Pub Med and Science Direct. terms used were i) alcohol* AND use and abuse* AND youth*, ii) ecological influences* AND family* AND peer*, iii) gender* AND differences* AND drinking patterns*, iv) ethnicity * AND differences* AND alcohol. Search terms were slightly altered in order to exploit the database effectively and the process is described in Figure 1, listed below. The searches were limited to English Language articles from 2000 to 2015. Unpublished dissertations were not included. Duplicated findings were removed, and remaining articles were reviewed to see if these studies meet the specific criteria set by aims of this review:

- Were there gender differences in alcohol consumption patterns and its consequences?
- How did ethnic groups association differ in riskier alcohol consumption patterns among young consumers?
- What is the impact of interpersonal influences on youth riskier alcohol consumption?

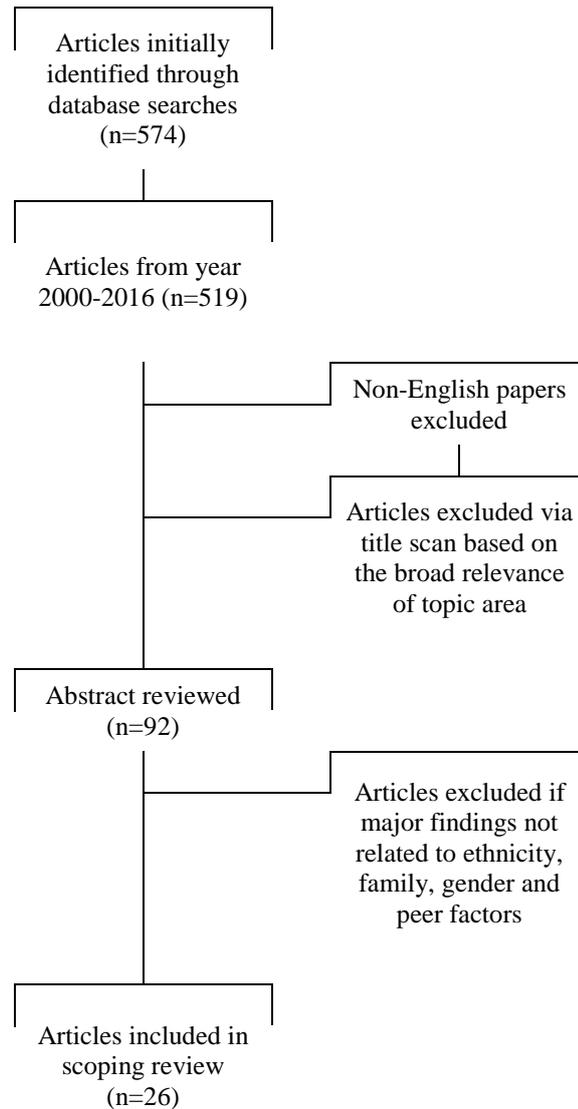


Fig 1: Flowchart explaining search strategy of scoping review

This scoping review is based on the framework proposed by Arksey & O'Malley, 2005; four themes emerged from 26 studies: 8 studies on family influences, 5 on peer influences, 8 on gender and 5 on ethnic differences are analyzed and discussed. Majority of the studies were based in the United States of America, with other studies from Australia, Cambodia, Finland, Italy, Lebanon, Malaysia, New Zealand, Taiwan, and Switzerland. The studies included were mainly cohort ($n=13$) and cross-sectional ($n=13$) studies. Twenty-six studies reviewed here, are assessed for quality through a consultative process to avoid the risk of bias assessment, with the application of Newcastle-Ottawa Scale [NOS]. The scores from this scale are listed in table 1, 2, 3 and 4.

3. EVIDENCE FROM THE STUDIES REVIEWED

3.1 Gender differences

Eight studies comprising of five cross-sectional population surveys [including GENACIS project which is done simultaneously in 35 countries] and three longitudinal studies were reviewed for gender-related differences. The age limitation for youth was not applied in this section on gender consumptions analysis; this is to ensure a comprehensive understanding of the differences between genders in consumption patterns regardless of age. Hence, participants within the age range of 10-70 years old were included. Most studies reported results on gender differences in alcohol consumption, exposure, and behaviour. Majority of the studies were conducted in the United States and Australia. Studies from Cambodia, Finland, Hungary, and Italy were also included.

3.2 Intrapersonal influences

As summarised in Table 1; eight of the studies reviewed here, indicated that there are significant gender differences among women and male consumers. The difference varied from positive to negative factors that are more prominent in male consumers than their counterparts. It is important to note that women may encounter riskier consumption patterns in early adulthood [ages 18-21] or later between the ages range of 35-60 years old. Therefore, it is imperative to ensure gender-specific criteria are amalgamated when interventions or research studies are being explored.

For instance; York, in 2003 reported that 46% out of 1,232 American women were consuming alcohol on a daily basis. Thirteen percent of these women reported a daily consumption of four or more drinks- this, variations in daily consumption ranged from 1 to 30 for men and 1 to 16 for women. This study finding emphasized that age by gender variation was not significantly different over time and frequency of consumption amongst pathological consumers were almost similar among men and women (York, Welte, & Hirsch, 2003).

There is a varied reason as to why and how alcohol consumption patterns differ among men and women. In a study done on 102 social drinkers- alcohol consumption was associated with increased aggression among men (Giancola et al., 2002). Whereby, in a study in Finland; revealed that women associated alcohol consumption patterns to positive outcomes. For example; the women in this study claimed that alcohol consumption made them feel optimistic about life and they felt better even when they had to deal with interpersonal issues at home or at work-places. For the men in this study; they associated alcohol consumption with the socialization factor that built confidence in alluring women. Hence, men perceive hedonistic benefits and women perceived more functional benefits from alcohol consumption (Mustonen et al, 2000).

However, when young women consume alcohol at a riskier level they may experience negative outcomes. A longitudinal study of national representative adolescent data used by Chen and Jacobson in 2012; indicated that greater gender differences in rates of linear change are noted, especially on alcohol use. Basically, this refers to the fact that females tend to show higher levels of substance use in early years compared to their counterparts (Chen & Yin, 2008). Such consumption patterns are concerning because, when females do consume heavily, they are more vulnerable to alcohol use disorders. These, forms of disorders appear to be severe in females compared to males (Nolen-Hoeksema, 2004). In addition to that, other associated riskier behaviours are also closely related to riskier alcohol consumption patterns. For instance, evidence from Cambodian study among 300 youths aged between 10-24 years residing in rural settings – revealed that majority [64%] of female consumers reported vulnerability towards risky sexual behaviours, compared to their male counterparts (Lopez, Mukaire, & Mataya, 2015). Such vulnerabilities among female consumers are more likely to go unnoticed and undiagnosed in healthcare settings by their physicians (Brienza & Stein, 2002). This is concerning, especially when evidence from Cambodia indicated that females who do seek health interventions, they may do so at a non-medical facility (Lopez et al., 2015).

Therefore, adequate and specific strategies are required to address riskier consumption patterns among females, especially when such consumption patterns prolong to later years. For instance, a study in Italy on 1059 daily consumers, revealed that heavy consumption patterns among females continued until later years (Guerrini, Gentili, & Guazzelli, 2006). Similarly, an Australian study of 14,941 females, indicated that risky consumption and associated problem behaviours continue to escalate among females aged 35 to 65-year-olds (Livingston & Room, 2009).

3.3 Interpersonal influences

Gender and associated alcohol consumption patterns also impact a family as a whole. For example, Kelly in 2012 explored the impact of family emotional engagement on adolescent alcohol use and in her findings, she revealed that female emotional closeness to mothers was associated with less frequent alcohol use. This effect appeared to operate by reducing exposure to high-risk peer networks. However, parental disapproval of alcohol use was protective for both genders, but this effect was larger for males than females (Kelly et al., 2011).

A Hungarian study in 2015, indicated that parental socioeconomic status such as mother's education was inversely related to smoking and alcohol consumption among young adults. Whereby, female with father who had high education displayed higher risk behaviours; such association is closely related to the fact that highly educated fathers may have higher permissive attitudes. Once again, emphasizing the need that both parental education and

active involvement in youth's life cycle, will promote better coping mechanism on how to manage substance use patterns among youth (Piko, Varga, & Wills, 2015).

Table 1. Ecological influences from gender perspective reviewed against assessment scale.

| Studies | Sample size and method | * | ** | Findings relevant to this scoping review | NOS /10 |
|--|---|---|----|--|---------|
| 1. Developmental Trajectories of Substance Use from Early Adolescence to Young Adulthood: Gender and Racial/Ethnic Differences. (P. Chen & Jacobson, 2012) | Longitudinal Study of Adolescent Health; examined gender and racial/ethnic. A sample size of 20,160 representatives of national data In US. Mean age at 21.2 (for those age 12 to 25) | | | Alcohol use exhibited the highest rates. <ul style="list-style-type: none"> Substance use increased from age 12, reached a stationary point (i.e., the highest level) at about age 25, and then declined. Females exhibited higher levels of substance use than males during early adolescence. | 7 |
| 2. Characteristics of youth sexual and reproductive health and risky behaviours in 2 rural provinces of Cambodia. (Lopez et al., 2015) | Multi-staged sampling method, 30 villages- 300 rural youths ages within 10-24. | | | The frequency of alcohol use between 1–5 times was evident in 90% of youths. <ul style="list-style-type: none"> More boys used alcohol than girls (74.2 % vs. 57.7 %) 77% of female reported risky sexual behaviours when alcohol consumption is observed. More females 64% reported that they practice risky behaviours than males. | 7 |
| 3. A Study of Motives for Tobacco and Alcohol Use Among High School Students in Hungary. (Piko et al., 2015) | 500 students (age range = 14–20 years; $M = 16.4$, $SD = 1.31$; 34 % males; 99.4 % response rate) | | | The social norm is a dominant motive for youth and mostly they consume in social situations <ul style="list-style-type: none"> Mother's education was inversely related to both smoking and drinking Level of father education was positively related to drinking among girls. | 6 |
| 4. Alcohol consumption and heavy drinking: a survey in three Italian villages. (Guerrini et al., 2006) | Information on alcohol-drinking patterns was collected from 2972 individuals using a questionnaire that included a masked form of the CAGE rating scale. | | | Heavy drinking was significantly higher in females compared to males, but daily drinking was higher in males compared to females. <ul style="list-style-type: none"> Out of 1059 consumers, 25% female were daily consumers | 6 |
| 5. Variations by age and sex in alcohol-related problematic behaviour per drinking volume and heavier drinking occasion. (Livingston & Room, 2009) | Mixed methods to collect data from almost 29,445 Australians aged 12 or older. | | | Both annual volume and risky drinking occasions peak in the early twenties or late teens. <ul style="list-style-type: none"> Total consumption and risky drinking occasion peak at slightly younger ages for females (18–19) There is a possibility that females are displaying high problematic behaviour at specific levels of drinking (eg 8 or more drinks) | 8 |
| 6. Gender differences in the impact of families on alcohol use: a lagged longitudinal study of early adolescents. (Kelly et al., 2011) | A total of 855 Australian students (modal age 10–11 years at baseline) participating in the International Youth Development Study (Victoria, Australia). | | | <ul style="list-style-type: none"> For girls, the emotional closeness to mothers led to lower exposure to high-risk peer network and less frequent alcohol use Parent disapproval of alcohol use was protective for both genders, but this effect was larger for boys than girls. | 8 |
| 7. Gender comparison of alcohol exposure on drinking occasions. (York et al., 2003) | A representative sample ($N = 2,627$) of the U.S. adult population was surveyed using computer-assisted telephone interviewing. | | | <ul style="list-style-type: none"> Of the 1,833 current drinkers (73.4% men & 67.2% women), women reported consuming a mean of 2.2 standard drinks (1 drink = 12 g ethanol) on typical drinking occasions (days); men reported consuming a mean of 3.2. The duration of the drinking episode was similar for women (122 minutes) and men (126 minutes). The hourly rate of drink consumption was thus lower for women (approximately 1.1 drinks/hour) than for men (approximately 1.6 drinks/hour). | 9 |

| | | | | |
|---|--|--|---|---|
| 8. Relationships of drinking behaviour, gender and age with reported negative and positive experiences related to drinking. (Mustonen & others, 2000) | Interviews were performed with a representative sample of the Finnish population between 15 and 69 years of age. | | <ul style="list-style-type: none"> • For women, drinking helped them to sort out interpersonal problems at home or in the workplace, to feel more optimistic about life, and to express their feelings. (Functional benefits) • Men more commonly reported that drinking had helped them to be funnier and wittier and to get closer to the opposite sex. (Hedonistic benefits) | 7 |
|---|--|--|---|---|

Results focused on: *Ethnic group association and ** Family and peer influences.

In conclusion, Table 1 findings above resonates the fact that normative influences that revolve around riskier consumption patterns do contribute to intense alcohol use among youths. These forms of vulnerabilities were also closely tied to ethnic group composition.

3.4 Ethnic group differences

In this section, five studies were analyzed. Two of these, are cross-sectional population surveys, and three are longitudinal studies that reviewed ethnic-related differences. The age range for youths was not considered in this section to ensure appreciation of ethnicity and its associated risk is encapsulated. Hence, studies with age variations of 13 to 70 years were included. The studies reviewed are from New Zealand, Malaysia and the United States of America.

Ethnic group differences are prominent within a multi-racial country such as Malaysia. A study conducted in Kuala Lumpur, involving 8532 students from secondary schools, found that the Chinese students were 1.55 times more likely to consume alcohol compared to other ethnic groups (Wan Rozita et al., 2005). The National Health and Morbidity Survey 2011 in Malaysia also found that current alcohol use is most prevalent among the Chinese. However, riskier alcohol consumptions patterns were noted among local natives from Sabah and Sarawak. Similar risky consumption patterns were also noted amongst the Indians ethnic group with an odds ratio of 1.7 higher than Chinese. It is relevant to note that the national prevalence for the current consumer is at, 24% (95% CI: 21.0, 26.4) and risky drinking patterns are evident. Such consumption patterns are mainly noted among 18-39 years olds (Mutalip et al., 2014).

However, such ethnic differences could also be a beneficial factor for young adults. In a study on 854 young Asian American; revealed that Asian language use was protective against alcohol misuse and alcohol dependence. The study concluded that cultural and socioeconomic factors of problematic consumption could differ for foreign-born Asian American (Cook, Bond, Karriker-Jaffe, & Zemore, 2013).

On the contrary, negative factors are also visible among different ethnic groups. A US study revealed that Whites were younger than Blacks and Hispanics of the same sex at drinking onset and progressed to alcohol dependence at a faster rate. This study emphasized the fact that there a significant association in the course of transition that is noted in alcohol initiation to alcohol dependence by race or ethnicity (Alvanzo et al., 2011).

Some of these ethnic differences are associated with the ethnic group association rather than the cultural identity. For instance, a New Zealand study examined the role of Maori ethnic and cultural identity in alcohol use and misuse. The study concluded that although Maories were found to be associated with modestly increased risk of alcohol use and abuse, there was little evidence to suggest that the rates of alcohol use differed in regards to their cultural identity (Marie, Fergusson, & Boden, 2012).

As noted in Table 2; the studies reviewed here, indicate that there is a significant impact of intrapersonal influences on youth consumptions patterns and their ethnic associations. However, there is a need to apply caution to the above-mentioned findings; because other than ecological issues such as family - peer influences; gender and social economic factors are equal contributors to youth alcohol use. Hence, the riskier consumption pattern factors are still undetermined and some of these associated factors are discussed below.

Table 2. Ecological influences that differ between ethnic groups.

| Studies | Sample size and method | * | * | Findings relevant to this scoping review | NOS /10 |
|--|---|---|---|---|---------|
| 1. Factors related to alcohol drinking among the adolescents in Federal Territory, Kuala Lumpur. (Wan Rozita et al., 2005) | The two-stage stratified sampling design was used to recruit 8532 eligible students from the selected secondary schools in Kuala Lumpur. | | | Significant factors were identified related to alcohol consumption, namely Chinese ethnic group (1.55). | 6 |
| 2. Alcohol consumption and risky drinking patterns in Malaysia: findings from NHMS 2011. (Motalip et al., 2014) | The paper analysed data from the National Health and Morbidity Survey 2011. It was a cross-sectional population-based with two stages stratified random sampling design. A validated Alcohol Use Disorder Identification Test Malay questionnaire was used to assess the alcohol consumption and its alcohol-related harms. | | | Ethnicity was significantly associated with risky drinking where Bumiputera Sabah and Sarawak had the highest odds of 2.7 followed by another ethnicity with the odds of 2.1 higher than Chinese relatively. Indian had odds of 1.7 higher than Chinese. | 7 |
| 3. Who's At Risk? Ethnic Drinking Cultures, Foreign Nativity, and Problem Drinking Among Asian American Young Adults. (Cook et al., 2013) | This study was a nationally representative sample of 854 Asian American young adults extracted from the Wave 4 National Longitudinal Study of Adolescent Health data. | | | <ul style="list-style-type: none"> • Asian language use was protective against alcohol-misuse symptoms and alcohol-dependence symptoms for the foreign-born. • Asian Indians consumed the smallest volume of alcohol, followed by the Vietnamese and Chinese/Taiwanese. Koreans were estimated to consume the largest volume of alcohol among all Asian people, followed by the Japanese. | 9 |
| 4. Race/ethnicity and sex differences in the progression from drinking initiation to the development of alcohol dependence. (Alvanzo et al., 2011) | This study uses data from Wave I of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) to compare a nationally representative sample of White, Black and Hispanic adults 18–44 years of age (n = 21,106). | | | <ul style="list-style-type: none"> • Drinking onset is earlier in Whites compared to Blacks and Hispanics. • White tends to progress to alcohol dependence at a faster rate than Blacks and Hispanics. | 8 |
| 5. The Links between Ethnicity, Cultural Identity and Alcohol Use, Misuse and Dependence in a New Zealand birth cohort. (Marie et al., 2012) | Data were gathered as part of a longitudinal study of a New Zealand birth cohort of 1000 young people. (The Christchurch Health and Development Study). | | | <ul style="list-style-type: none"> • Māori ethnic group association lead to higher alcohol-attributed deaths (1.47-1.63) compared to non-Maori people. • Higher consumption patterns were dominant among youth aged 18-21 years old. | 9 |

Results focused on: * Ethnic group association and ** Family and peer influences.

Table 2 findings conclude the fact that ethnic group association may be a greater affluence that is closely linked to riskier consumption patterns among youth.

3.5 Interpersonal influences

A total of thirteen studies were reviewed on ecological factors [with a specific focus on family and peer influences], that were directly and indirectly associated with youth alcoholism. The majority [6 out of 13], studies utilized a longitudinal approach. Other study methodologies include cross-sectional population surveys and Structural Equation Models (SEM). The sample age for participants were adolescent children aged between 6-26 years old, with the majority of studies focusing on students in schools and universities. Majority of the studies were conducted in the United States of America, with four other studies conducted in Switzerland, Taiwan, and Lebanon.

3.6 Family influence

There have been questions about the impact of parental alcohol-related messages and parenting style on alcoholism in adolescents. Zero tolerance communications by parents appeared to be most protective against alcohol use and consequences. Harm minimization messages were noted to be least effective communitarian strategies. Messaging on minimization of harms or abstinence were less effective especially among young adults (Abar, Morgan, Small, & Maggs, 2012). Parenting style like monitoring and disapproval of heavy consumption were negatively associated with heavy episodic drinking. Where else, higher levels of perceived monitoring and disapproval were associated with lower levels of heavy episodic drinking. Perceived parental permissiveness was significantly and positively associated with heavy episodic drinking (Wood, Read, Mitchell, & Brand, 2004). Contrary to this, another study explored similarities between youth in different countries with different alcohol policies and they concluded that adult-supervised settings for alcohol use resulted in higher levels of harmful alcohol consequences (McMorris, Catalano, Kim, Toumbourou, & Hemphill, 2011). This contradicts with predictions derived from the harm-minimization policy.

An interesting study took parental monitoring a step further by examining the potential gender-specific parental influences on consumption control and alcohol-related problems in 581 university students. The study showed that daughters, perceptions of a permissive father were indirectly linked to more alcohol-related problems; while for sons, perceptions of mother and authoritativeness were directly linked to fewer alcohol-related problems (Patock-Peckham, King, Morgan-Lopez, Ulloa, & Filson Moses, 2011).

In addition to parental assent and monitoring approach; parental consumption patterns do have a direct impact on youth drinking patterns as well. For example; paternal alcoholism and paternal absence were associated with the development of behavioural problems amongst youth. These behaviours were explored in a study and the results revealed that a propensity for physical aggression and low anxiety best-distinguished *son of male alcoholics* [SOMAs] from non-SOMAs at ages 6 and 12 years old (Carbonneau et al., 1998). Yeh, conducted a survey on 779 high school students in Taiwan and found that the probability of developing adolescent drinking problem was fourfold greater in students whose fathers had heavy consumption episodes, with males having a probability of 2.22 - 2.71 fold greater than in female adolescents (YEH, 2006).

Summarization of the results found in the eight of the studies evaluated under family influences shown in Table 3; indicates that it is crucial for parents to have effective and engaging communication on risks associated with alcohol use. Such communication enforcement needs to be tailored to ongoing efforts to build a healthy relationship with a child who is transitioning from adolescent to young adulthood. The transformation from child ecology to young adult life cycle comes with many challenges involving risk-taking practices that could impact alcohol consumption behaviours.

Table 3. Ecological influences, reviewed against assessment scale I – Family influences.

| Studies | Sample size and method | * | * | Findings relevant to this scoping review | NOS /10 |
|---|--|---|---|--|---------|
| 1. Investigating Associations Between Perceived Parental Alcohol-Related Messages and College Student Drinking. (Abar et al., 2012) | A longitudinal study of 585 participants who are less than 21 years completed web-based surveys. | | | Zero tolerance messages seemed to be more protective compared to harm reduction based messages. Harm reduction messages were associated with riskier alcohol use in college. | 9 |
| 2. Influence of Family Factors and Supervised Alcohol Use on Adolescent Alcohol Use and Harms: Similarities Between Youth in Different Alcohol Policy Contexts. (McMorris et al., 2011) | Representative samples seventh-grade students ($N = 1,945$) were recruited from schools in US and Australia. Students completed comprehensive annually from 2002(seventh grade) to 2004 (ninth grade). | | | Adult supervision resulted in higher levels of harmful alcohol consequences contrary to predictions derived from the harm-minimization policy. | 8 |
| 3. Factors associated with alcohol consumption, problem drinking, and related consequences among high school students in Taiwan. (YEH, 2006) | A total of $N=779$ 10th-grade students from four randomly selected high schools in eastern Taiwan were included in the self-reported survey. | | | Parents (fathers) and peer groups influenced alcohol consumption. The probability of developing adolescent problem drinking was fourfold greater in students whose fathers had habits of drinking. | 6 |

| Studies | Sample size and method | * | * | Findings relevant to this scoping review | NOS /10 |
|---|--|---|---|--|---------|
| 4. Do Parents Still Matter? Parent and Peer Influences on Alcohol Involvement Among Recent High School Graduates. (Wood et al., 2004) | N=556 participants (late adolescents) completed a mail survey. | | | Parental monitoring and parental disapproval led to lower levels of heavy episodic drinking. | 8 |
| 5. Gender-Specific Mediation Links Between Parenting Styles, Parental Monitoring, Impulsiveness, Drinking Control, and Alcohol-Related Problems. (Patock-Peckham et al., 2011) | A multiple-group, SEM model with (316 women, 265 men) university students was examined. | | | For daughters, perceptions of a permissive father were indirectly linked to more alcohol-related problems, while for sons; perceptions of mother and authoritative were directly linked to fewer alcohol-related problems. | 7 |
| 6. Sibling Influence on Alcohol Use in a Young Adult, High-Risk Sample. (Trim, Leuthe, & Chassin, 2006) | Data from sibling pairs (n = 169 pairs) in an ongoing longitudinal study of children of alcoholics and matched controls were collected at two-time points 5 years apart. | | | Older sibling influence on younger sibling alcoholism was significant only among sibling pairs who were of the same gender, closer in age, and from higher conflict families | 9 |
| 7. My older sibling was drunk – Younger siblings' drunkenness in relation to parental monitoring and the parent-adolescent relationship. (Gossrau-Breen, Kuntsche, & Gmel, 2010b) | Regression models were conducted based on a national representative sample of 3725, 8th to 10th graders in Switzerland (mean age 15.0, SD ¼ .93) who indicated having older siblings | | | Parental monitoring is important in preventing risky drinking in younger children even if older children engage in riskier consumption patterns. However, a satisfying relationship with parents does not seem to be sufficient to counterbalance older siblings' influence. | 8 |
| 8. The Earlier the More? Differences in the Links between Age at First Drink and Adolescent Alcohol Use and Related Problems According to Quality of Parent-Child Relationships. (Kuntsche, van der Vorst, & Engels, 2009a) | Structural equation models were estimated based on a three-wave, 2-year prospective study of 364 adolescents. | | | Adolescents those who had a late alcoholic first drink and a high-quality relationship with their parents were found to have lower levels of alcohol use | 9 |

Results focused on:* Ethnic group association and ** Family and peer influences.

Table 3, concludes the fact that family influences are dominant factors to take into considerations and there is a need to engage parents to avoid harmful alcohol use throughout the lifecycle of an offspring.

3.7 Peer influence

An example of peer influence evidence on youth alcoholism is seen when Duncan and colleagues studied 405 randomly recruited youth from three age cohorts (9,11,13 years) and assessed them annually for 4 years. The study showed that more peer deviance and peer encouragement of alcohol use was related to an increase in alcohol use rates from ages 9 to 16 (Duncan, Duncan, & Strycker, 2006). These, forms of peer influence continued to remain significant for some adolescent who transitioned into young adults. For instance, from 75% [N=1036] of youths within the age range of 17-22-year-olds - from different universities in Lebanon; claimed that they usually consume alcohol with their friends. Hence, indicating that their consumption patterns revolved around peer's opinion and behaviour (Barbour et al., 2013).

In addition to peer pressure, social anxiety is also an important factor for consideration in youth alcohol use. For socially anxious youth, high levels of perceived peer use in relation to high levels of affiliation need to result in

greater alcohol use in average and more frequent episodic drinking. Specific to heavy episodic drinking, the interaction between social anxiety and perceived peer drinking seemed to affect girls and boys differentially. Thus, it was inferred that alcohol-related risk associated with social anxiety might be gender specific (Anderson, Tomlinson, Robinson, & Brown, 2011).

Some studies highlighted protective factors that may co-exist with peer pressure such as school bonding. In a study of 2582 American Indian and Alaskan Native student; school bonding was associated with lower likelihood of lifetime alcohol use for adolescents younger than age 16, and a lower level use among users for all adolescents. Thus, school bonding is seen as a buffer against peer alcohol use among adolescents younger than 16 years old (Dickens, Dieterich, Henry, & Beauvais, 2012).

There is a certain moderating variable effect of peer's use of alcohol on youth alcoholism, namely perceived harm of alcohol use and risk-taking. The effect of increased exposure to alcohol using friends is stronger when the youth is less likely to perceive the harmful effects of alcohol use, or when a youth indicates increased interest in risk-taking behaviours. Hence, although a friend's use of alcohol is a major predictor of a youth's own alcohol use; some are more likely than others to be influenced by a friend's behaviour depending on the perception of harm and predisposition to risk-taking (Henry, Slater, & Oetting, 2005).

The evidence in this section shown in Table 4; stipulates that alcohol use and misuse are associated with several domains of influence in youth interpersonal ecology. Some predictors of alcohol misuse are closely related to peer opinion and behaviours. These forms of predictors are linked to personal factors like social anxiety, perceived harms of alcohol use and risk-taking behaviour. Therefore, enforcing the need for prevention efforts which encapsulate adolescence, who may be exposed to such risk-taking behaviours from an early age is essential. In addition, there is an equal emphasis to also monitor peer involvements that are equally at risk of alcohol misuse.

Table 4. Ecological influences II, reviewed against assessment scale II –Peer influence.

| Studies | Sample size and method | * | * | Findings relevant to this scoping review | NOS /10 |
|--|--|---|---|---|---------|
| 1. Alcohol Use from Ages 9 –16: A Cohort-Sequential Latent Growth Model. (Duncan et al., 2006) | The sample comprised 405 randomly recruited youth from three age cohorts (9, 11, and 13 years), assessed annually for 4 years. | | | The greater the peer deviance and friend's encouragement of alcohol use, the greater the increase in alcohol use rates from ages 9 to 16 years. | 10 |
| 2. Do personal beliefs and peers affect the practice of alcohol consumption in university students in Lebanon? . (Barbour et al., 2013) | A total of 1500 questionnaire were distributed to students from all universities in Lebanon. | | | Risk factors for harmful drinking were: <ul style="list-style-type: none"> • friends' agreeing with alcohol consumption (crude OR = 6.22), • a higher proportion of friends who drank regularly (OR = 17.3) and • higher frequency of drinking alcohol with friends (OR = 80.1). | 7 |
| 3. Friends or Foes: Social Anxiety, Peer Affiliation, and Drinking in Middle School. (Anderson et al., 2011) | 1,500 early adolescents from southern California completed the Social Anxiety Scale for Children-Revised as well as measures of perceived peer drinking and self-reported lifetime and current drinking. | | | Youth who are socially anxious had higher levels of perceived peer use which led to greater alcohol use on average and more frequent episodic drinking. For heavy episodic drinking, the interaction of social anxiety and perceived peer drinking seemed to affect girls and boys differentially. | 8 |
| 4. School Bonding As a Moderator of the Effect of Peer Influences on Alcohol Use Among American Indian Adolescents. (Dickens et al., 2012) | Survey data were collected from middle and high school students during the 2009–2010 and 2010–2011 school years from 37 school districts in the United States. The sample consisted of 2,582 students | | | Peer alcohol use was seen as a risk factor for <ul style="list-style-type: none"> • lifetime alcohol use and • level of alcohol use among users. • School bonding led lower likelihood of lifetime alcohol use for adolescents younger than age 16 and a lower level of use among users for all adolescents. | 7 |

| Studies | Sample size and method | * | * | Findings relevant to this scoping review | NOS /10 |
|---|--|---|---|--|---------|
| 5. Alcohol Use in Early Adolescence: The Effect of Changes in Risk Taking, Perceived Harm, and Friends' Alcohol Use. (Henry et al., 2005) | 1,065 students were in sixth or seventh grade at the initial survey and provided survey data on three additional occasions over a period of 2 years. | | | Increased exposure to alcohol-using friends happens when an adolescent is less likely to perceive harmful effects of alcohol use and when they are prone to risk taking behaviour. | 9 |

Results focused on: * Ethnic group association and ** Family and peer influences.

4. DISCUSSION

The aim of this review is to gather available evidence on ecological influences such as family, peer, gender, and ethnicity; which, clearly indicates the complexity that revolves around youth riskier alcohol consumption patterns. However, the evidence gathered from twenty-six studies in Table 1,2,3 and 4 emphasised the fact that interpersonal influences – especially positive parental factors, could act as protective buffers in addressing youth alcoholism (Abar et al., 2012);(Wood et al., 2004);(Gossrau-Breen, Kuntsche, & Gmel, 2010a);(Kuntsche, van der Vorst, & Engels, 2009b);(Patock-Peckham et al., 2011);(McMorris et al., 2011). Thus, addressing family-based strategies that improve positive parental involvement in their offspring lives could address riskier alcohol consumption patterns among youth. For instance, prevention strategies packages for parents that encompasses of intrapersonal to interpersonal influences could enhance coping skills that address riskier consumption patterns among young children who transition into young adults (Lopez et al., 2015);(Piko et al., 2015);(Livingston & Room, 2009);(Kelly et al., 2011);(Mustonen et al, 2000);(Wan Rozita et al., 2005);(Abar et al., 2012);(McMorris et al., 2011);(YEH, 2006);(Wood et al., 2004);(Kuntsche et al., 2009b). These family-based intervention model that comprises of distal and proximal factors needs to be packaged in the interactive and integrated package. Such package, could elaborate zero tolerance messages, with added mechanism on improving parental monitoring and positive relationship that have proven to the best approach to minimise riskier consumption patterns among youths (Abar et al., 2012);(Wood et al., 2004);(Kuntsche, van der Vorst, & Engels, 2009a);(Velleman, Templeton, & Copello, 2005). Some of the elements of an interactive intervention package that takes into consideration the transitions that occur in child's life to young adulthood; is described in Figure 2.

In addition, to the above mentioned interactive package; there is also a need to include associated factors that correlated to intra and interpersonal influences. For instance, ethnic group association, gender, and peer influences could all be contributing factors to riskier consumption patterns (Patock-Peckham et al., 2011);(Duncan et al., 2006). Thus, emphasising the need on continuous research to address the riskier alcohol patterns which may be evident among families from a certain ethnic group (Mutalip et al., 2014);(Cook et al., 2013);(Alvanzo et al., 2011);(Marie et al., 2012);(Chen & Jacobson, 2012);(Lopez et al., 2015);(Livingston & Room, 2009);(Kelly et al., 2011);(Mustonen et al, 2000). These forms of influences could also be closely linked to the genetic makeup of youth from specific kinship (Kendler, Myers, Dick, & Prescott, 2010), social or cultural factors (Marie et al., 2012).

Therefore, Stokols guideline on Social Ecology Model for Health Promotion; which addresses human-environment interactions that involves individual, families and cultural groups prevention and intervention may be a suited approach (Stokols, 1996);(McLeroy, Bibeau, Steckler, & Glanz, 1988);(YEH, 2006);(Gossrau-Breen et al., 2010). The following figure 2, demonstrates the need for positive reinforcement messaging from parents that are mapped against growth chart of their offspring.

| | | | | |
|--|---|--|--|---------------|
| Family Influences on youth alcohol use: “Parents promote abstinence messages” | Adolescence | | Youth | |
| | <18 | | 18-25 | |
| | Male | Female | Male | Female |
| | Parents promote abstinence messages | | Parents promote abstinence with information on benefits and risk associated with alcohol usage | |
| | Parents consume alcohol responsibly in front of children <i>(Male not more than 4 drinks at a sitting and female not more than 2 at a sitting; over a period of two to four hours)</i> | | | |
| Parents to build a strong relationship with constant probing to assess knowledge on possible risk factors resulting from substance use | | Fathers or Male family members | Mothers or female family members | |
| | | to also address knowledge on potential risk associated with harmful consumption and another risk (ex; sexual, violence & drunk driving/riding) | | |

Fig 2. Positive reinforcement messaging cater for parent interactions with their offspring.

5. RESEARCH GAPS

As highlighted above, there is a need to build on evidence to ensure interactive intervention packages are catered and directed at the right audience at a specific timeframe.

- The packaging of interactive messaging that focuses on family-based interventions; parents address the protective factors, risk factors and resilience via communication. Parent to build a positive relationship with a child through adolescence and youth. However, such messaging needs to also be mapped against the current gaps identified in relations to gender-specific parental influence.
- Addressing interpersonal influences, which are interwoven with peer’s influence on alcohol consumption should be explored. This might help in tailoring intervention to a certain group of youth who possess specific personal factors which separates them from the high-risk groups.
- Research is also required on the convergence of men’s and women’s consumption patterns. Evidence highlighted above have indicated that there is an increasing trend of alcohol consumption among females that revolves around evolution in women’s lives (Holmila & Raitasalo, 2005). It is crucial to highlight the fact that there is limited research on addressing alcohol consumption patterns within females especially in South East Asia. This form of evidence is crucial since there is an increase in average volume of drinking among women residing in this region (Das, Balakrishnan, & Vasudevan, 2006).
- Finally, the relationship of ethnicity and consumption patterns is critical in addressing its risk and protective factors. These forms of tailored information could inform prevention and intervention activities.

6. CONCLUSION

In relation to the ecological factors that influence youth alcoholism, this review found that intra and interpersonal influences were so inextricably linked to one another. Hence, a multidimensional approach through a primary prevention package needs to be developed for parents so that they could strategically address riskier alcohol consumption patterns among youths.

In addition, studies on gender highlighted the differences in drinking patterns between genders and consumption consequences. The incidence of heavy and problematic consumption seemed to have significant gender differences that are important to consider when planning effective prevention programmes. The gender-specific parental influences should also be taken into account when planning an intervention.

Finally, this review also revealed that ethnicity and cultural identification are relevant factors to be considered in studies on riskier alcohol use. Hence, more studies relating to risk and protective factors of specific ethnic groups in particular locale are warranted. This ensures the fact that ethnic group associations are integrated into prevention and intervention initiatives.

7. LIMITATIONS

Unlike previous reviews which focused on broader aspects, this review has specifically discussed the intra and interpersonal ecological influences of riskier alcohol consumption among youth. However, the 26 studies in this scoping review have been cross-sectional and longitudinal studies from specific countries only; thus, this limits our understanding of temporal patterns of alcohol consumption among individuals in varied age range. Furthermore, the author intended to encapsulate some Asian population studies to ensure regional differences- but, only five studies were included that were aligned with aims of the review.

DISCLAIMERS

The following is author's statement; hence views expressed in the submitted article are the teams and not an official position of the institution or funder.

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CONFLICT OF INTEREST

The authors confirm there are no conflicts of interest pertaining to the article.

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