



YOUNG PEOPLE AND ALCOHOL:

A RESOURCE BOOK



World Health
Organization

Western Pacific Region

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A R E S O U R C E B O O K



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PREFACE

This publication is meant for anyone who has an interest in the health and welfare of young people in the Western Pacific Region of the World Health Organization (WHO). It compiles what is known about the effects of alcohol consumption on young people, the current situation in the Region regarding drinking among young people and what can be done to limit the resulting harm.

Over the last few decades, great advances have been made in the science studying the effects of alcohol consumption on health and what can be done to reduce these effects, which are far greater than previously assumed. WHO has therefore accorded high priority to reducing alcohol-related harm in all parts of the world.

It has also become increasingly clear that the consumption of alcohol by young people deserves special attention, as biological, neurological, social and psychological factors make them much more vulnerable to the negative effects of alcohol. The Western Pacific Region has, generally, a very young population, and overall alcohol consumption is increasing rapidly. Given the growing threat to young people's health and welfare by alcohol consumption in the Region, the WHO Regional Office for the Western Pacific is promoting effective action on this subject, thus contributing to healthy youth in the Region.

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ABBREVIATIONS

AUDIT	– Alcohol Use Disorders Identification Test
GSHS	– Global School-Based Student Health Survey
MUP	– minimum unit price
PICTs	– Pacific island countries and territories
SAVY	– Survey Assessment of Vietnamese Youth
SAR	– Special Administrative Region
SGS	– Second Generation HIV Surveillance
UNAIDS	– Joint United Nations Programme on HIV and AIDS
YRBS	– Youth Risk Behavior Survey
WHO	– World Health Organization

EXECUTIVE SUMMARY

The understanding of alcohol and related harm has advanced significantly in the past few decades, bringing more insight into associated public health policies. The *Regional strategy to reduce alcohol-related harm*, endorsed in 2006 for the Western Pacific Region of the World Health Organization, and the *Global strategy to reduce harmful use of alcohol*, endorsed in 2010, recognize the serious impact of alcohol-related harm, which is particularly relevant to young people due to their biological and psychological vulnerability.

Alcohol is the world's fifth leading risk factor for disease burden. In the Western Pacific, 5.9% of all deaths are attributable to harmful use of alcohol – one person dies for alcohol-related harm every minute. Harmful consumption of alcohol has many negative consequences—it not only leads to many neuropsychiatric disorders and noncommunicable diseases but is also associated with several communicable diseases. Especially among children and young people, it is further linked to injuries.

Adolescence is a key time of behaviour change in an individual's life cycle and for brain reorganization. Alcohol consumption during this period adversely affects these developmental changes. Further, young people have particular reactions to alcohol as compared to adults; while they are less sensitive to sedation and mobility effects, they are more sensitive to its social and rewarding effects. These reactions can make young people easily intoxicated, placing them—and the community—at risk of physical, sexual and emotional harm. Furthermore, young people can develop dependence on alcohol more quickly than adults, and persons who initiate drinking at early ages tend to develop alcohol problems later in life.

Today many more young people are drinking and at younger ages. In the Region, 15–30% of young people drink. While the gender gap in prevalence is generally closing, rural–urban differences remain in some countries and areas, with more drinkers in urban areas. Binge drinking is also becoming more and more common. Young people are reporting increasing alcohol-related harm and risks including injuries, risky sexual activity, suicidality and impaired relationships and participation in education and employment.

Key factors including the availability of alcohol, the price of alcohol and alcohol marketing—easier access, cheaper prices and exposure to an ever-

increasing variety and intensity of marketing efforts—contribute to heavier consumption and related harm. However, they can be effectively curbed by restricting youth access to alcoholic beverages through establishing and enforcing minimal drinking legal age limits, outlet density and trading hours and by increasing alcohol prices through taxation policies. In the interest of young people's health, alcohol marketing can and should be banned or restricted by legislation.

Besides legislative measures, additional interventions such as community action, brief interventions and treatment can prevent or reduce alcohol consumption by at-risk populations. Drink-driving countermeasures, including "zero tolerance" and random breath testing, are effective in reducing alcohol-involved road crashes, saving the lives of countless young people. Involving young people themselves is an important element in developing and implementing appropriate policies and programmes.

1. INTRODUCTION

Until the late 20th century, the focus of health systems and societies was on alcoholism as a disease and its treatment, but it is now widely accepted that this represents a too-narrow view of the broader scope of problems associated with alcohol consumption. The health and social problems linked with alcohol affect many more people than just the alcoholics or problem drinkers (1). For example, alcohol consumption has been shown to have complex links with poverty (2). Further, much of the resulting harm has nothing to do with alcoholism but is the result of actually drinking alcohol, drinking too much or drinking at the wrong moment.

Harmful drinking is a major determinant for a number of neuropsychiatric disorders and other noncommunicable diseases, such as cardiovascular and liver disease and many cancers (3). A causal relationship exists between harmful use of alcohol and incidence of several infectious diseases, such as tuberculosis and the progression of HIV/AIDS. In addition, risky sexual behaviour while intoxicated increases the risk of unplanned pregnancies and sexually transmitted infections. Road traffic and other injuries, associated with alcohol use, are a major cause of significant mortality and morbidity among children and young people, as are violence and suicide. In fact, alcohol is the world's fifth-largest risk factor for disease burden, and it is responsible for 5.9% of all deaths in the Western Pacific Region (4). This translates to one death every minute due to alcohol-related harm in the Western Pacific.

There is now a substantial body of knowledge and policy guidance on the impact of alcohol consumption on public health. In the wake of this growing insight, much research has been conducted on opportunities for controlling the risks associated with alcohol consumption. There is now abundant evidence on the effectiveness of many different strategies and programmes (5). Although most of the research is from developed countries, much of the work applies to other countries and areas around the globe.

The World Health Organization (WHO) has accorded high priority to the impact of alcohol consumption on public health. The WHO Regional Committee for the Western Pacific endorsed, in 2006, the *Regional strategy to reduce alcohol-related harm* (6), and at the World Health Assembly in May 2010, Member States reached a consensus on the *Global strategy to reduce harmful use of alcohol* (7). In addition, many studies

and publications have been produced following up on these decisions.¹ Recently, with the support of the Government of Hong Kong Special Administrative Region (SAR), the WHO Regional Office for the Western Pacific organized the Regional Meeting on NCD Disease Prevention and Control through the Reduction of Alcohol-Related Harm from 10 to 13 April 2012, and the Regional Meeting on Addressing the Harmful Use of Alcohol by Young People from 12 to 14 November 2013 (8, 9). In these and many related documents, particular relevance is attributed to young people—rightly so, as the effects of alcohol intake on the still-developing body and mind of young people are, in many respects, more serious than the effects it has on adults.

Most societies, including those in the Region, traditionally have strict norms and standards that prohibit or severely restrict the use of alcohol by young people. However, these norms and standards, together with those that regulate behaviour, are gradually fading. Thus, drinking is occurring more frequently, and beginning at younger ages (10). As the Western Pacific Region has a very young population, it is therefore logical to focus on this segment of the population. Accordingly, several countries and areas within the Region have already identified young people² as a particularly important group in the development of their alcohol policies.

In the following chapters, the biological and psychosocial aspects of drinking alcohol by young people, the extent of drinking and related problems among young people, contributing and causative factors of harmful drinking among young people and the opportunities for reducing alcohol-related harm among young people are reviewed.

1 Accessible on the WHO website (http://www.who.int/substance_abuse/publications/en/).

2 WHO defines young people as people aged 10–24 years.

2. BIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF DRINKING BY YOUNG PEOPLE

Summary points:

- Adolescence is a key time of behaviour change in an individual's life cycle and typically the time that alcohol consumption commences.
- Adolescence is also a key time for brain reorganization. Rapid changes occur in circuits involved in social and emotional behaviour, and more gradual changes occur in circuits involved in thinking ahead, planning and decision-making. Alcohol impacts on these developmental changes.
- While cognitive processes play an important role in young people's drinking, automatically activated impulsive behaviour appears to be especially important in adolescents with alcohol problems.
- Young people are less sensitive to some side-effects of alcohol (e.g. sedation, impaired mobility) but more sensitive to its social and rewarding effects. This means they can readily reach high levels of intoxication.
- Intoxication in young people puts the young person at risk of physical, sexual and emotional harm and puts the community at risk as a result of disinhibited behaviour.
- Psychosocial risk is closely associated with problem alcohol use.
- Genetic risk is also an increasingly recognized factor in problem drinking.
- Physical harm caused by alcohol includes liver injury, many forms of cancer, gastrointestinal damage, immunodeficiency, cardiovascular disease, abdominal obesity and neurological harm.
- Early onset of alcohol consumption is a predictor of alcohol problems in adulthood.
- The onset of dependence on alcohol occurs more quickly in young people than in adults.

- Interventions to reduce heavy alcohol consumption and alcohol-related problems can be broad-based (e.g. focusing on factors in a young person’s environment) or can be targeted to those at higher risk (e.g. focusing on psychological or biological factors).

2.1 What is known about adolescent development?

Youth, or adolescence, is a stage in an individual’s life during which the transition from childhood to adulthood occurs. It is characterized by physical, cognitive and psychosocial change. WHO defines young people as aged 10–24 years (11).

Adolescent development is not just chronological age or the physical phenomenon of puberty. Adolescence includes developmental tasks, which are achieved in stages as the young brain develops and matures. This is important to keep in mind when dealing with young people, as it influences both the way one communicates with them and what one can expect of them. The stages of adolescent development are summarized in Table 1.

Table 1: Summary of stages of development in young people

STAGE	KEY FEATURES	DETAILS
Early ~11–13 years	Physiological changes of puberty	<ul style="list-style-type: none"> • Concrete thought • Physiological changes of puberty • Increase in social and emotional responses with onset of puberty
Middle ~14–15 years	Peers and identity	<ul style="list-style-type: none"> • Abstract thought • Striving to define identity: experimental behaviour, risk-taking, sense of omnipotence and invincibility that may sometimes place the individual at significant danger (e.g. high-risk drinking) • Sexual identity emerges, dating increases but relationships typically tend to be self-centred in quality
Late ~16–20 years	Planning for future	<ul style="list-style-type: none"> • More mature intellectual capabilities • Sense of their own identity becomes evident • Peers and family relationships remain but one-on-one relationships become important
Young adulthood ~21–25 years and beyond	Establishing and consolidating adult roles	<ul style="list-style-type: none"> • Continuing education or employment • Financial considerations and independence more a priority • Longer-term view of relationships and partnerships

Source: Reproduced by permission of the publisher from Saunders & Rey (12).

It is important to note that within a given individual, cognitive, physical and psychosocial maturation may not necessarily be in sync. Also, young people's development does not progress at the same rate in all individuals. Some young people are capable of mature thinking and decision-making at an earlier age, depending on various factors such as gender, social interaction and cultural context.

Some other caveats may apply to adolescent development as sketched hereabove. First, the developmental tasks as described in Table 1 tend to represent the situation in the societies where independence is perceived as an important part of upgrowing, while in some countries and areas in the Western Pacific Region interdependence is seen as more important. Second, there are specific cultural aspects in some countries and areas that translate into milestones of development that differ from some of those listed in Table 1 (e.g. in many communities in the Region, young people may need to work full-time to assist their families). Likewise in societies where marriages are arranged by the families and where this may occur in early or middle adolescence, the psychosocial developmental trajectory will be different.

The young brain undergoes significant structural and functional change through adolescence and young adulthood (for more details, see [13–15]). Brain connections are refined, with some being removed (known as “pruning”), and others being strengthened to enable improved efficiency and effectiveness of transmission of neural signals. It is also known that the brain maturation process occurs earlier in some parts of the brain but later in such areas as the prefrontal cortex, which plays an important role in executive functions (i.e. the ability to determine the consequences of actions, suppress urges, discern between conflicting thoughts and concepts and good and bad).

Executive functions are still relatively immature during the teenage years. Typically, young adolescents (i.e. ages 12–14 years) do not consistently think logically and can frequently underestimate risk. Instead, pubertal hormones at this time activate the social and emotional areas of the developing brain, driving young people's behaviour during this developmental period (16, 17). By mid-adolescence, young people are becoming more experienced and are increasingly able to think about things in more mature ways. As a result, they become better at recognizing the impact of drinking on their health and well-being and on those of others.

It should be noted, however, that young people in mid-adolescence can still frequently be inconsistent in their thoughts and behaviour. Wide-ranging experimentation and challenging of boundaries with concomitant risk typically flourish at this time. This includes associating with new friend groups, developing different interests and seeking novel experiences (e.g. sexual, drug-related, sensation-seeking). Such developmental behaviour may become problematic in young people, and whether it persists depends on an individual's predisposition and social circumstances. However, unquestionably, these important aspects of adolescent behaviour need to be recognized when developing policies and strategies to reduce alcohol-related harm in young people.

2.2 Why do young people drink?

Motives to drink in young people have been studied extensively (18, 19) and are similar those in adults. Understanding the motives to drink provides insight into the likelihood of drinking, its pattern and its consequences. Thus, interventions to reduce alcohol-related harm can be developed based on this information. Motives to drink have been categorized into four groups and are described in Table 2.

Table 2: Motives to drink in young people

MOTIVE	DESCRIPTION	EXAMPLE
Enhancement	To enhance positive mood or well-being	• Drinking for "the kick"
Social	To obtain social rewards	• Drinking to affiliate with others
Coping	To lessen negative emotions	• Drinking to manage negative mood
Conformity	To avoid social rejection	• Drinking to reduce or avoid social problems

Source: (20)

2.3 What are the psychosocial risk factors for alcohol problems in young people?

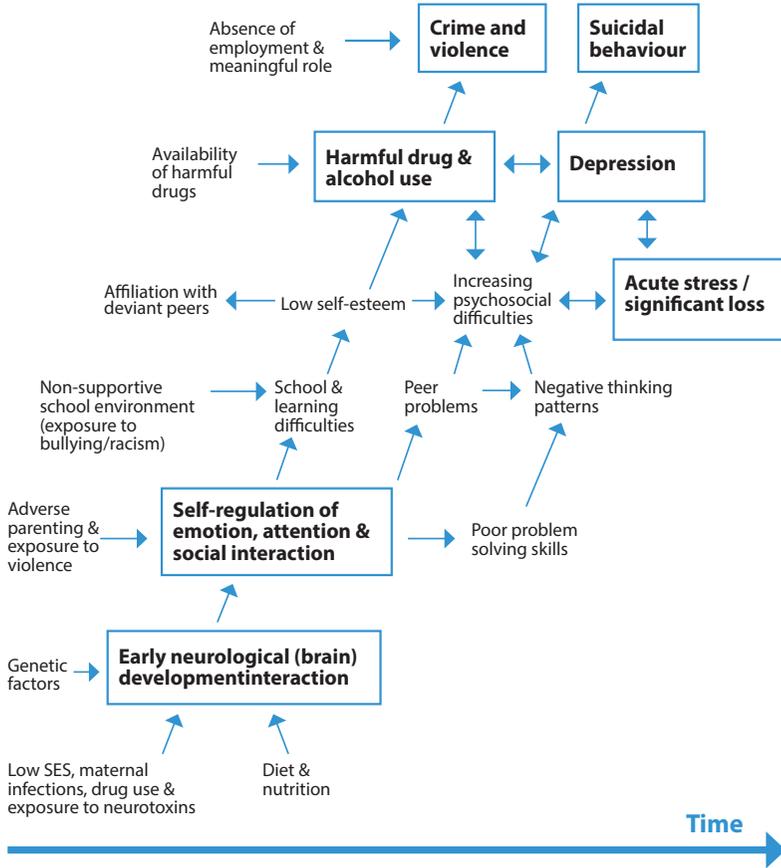
There is no single risk factor that can be attributed to a young person's alcohol use or alcohol-related problems, but a psychosocial risk factor and protective factor framework can be used to understand an individual's likelihood of progressing to problems with alcohol. Alcohol problems correlate with psychosocial risk, which is a function of the balance between risk factors and protective factors. The framework takes into

account not only the characteristics of the individual but also the factors in that individual's environment that contribute to the trajectory he or she may follow.

Resilience is often referenced in this framework, denoting the ability to be well-adjusted and interpersonally effective despite experiencing adversity (21). Factors that counter risk factors and help people deal positively with life changes are referred to as protective factors, which may be events, circumstances or life experiences. Connections to family, school, interest groups or spirituality have been identified as important protective factors. Risk and protective factors may vary over time and have differing impacts at differing points or stages of development (22).

The framework is relevant to interventions at both an individual and a community level and to policy formation, as approaches to managing alcohol use in young people aim to reduce risk factors and strengthen protective factors where possible. Figures 1 and 2 demonstrate typical causal pathways in an effort to show how multiple factors at key points in life interconnect. It can be seen in this model how events can cumulatively lead towards reduced capacity to respond to adverse social outcomes (Figure 1). Alternatively, protective factors can work towards resilience and positive outcomes (Figure 2).

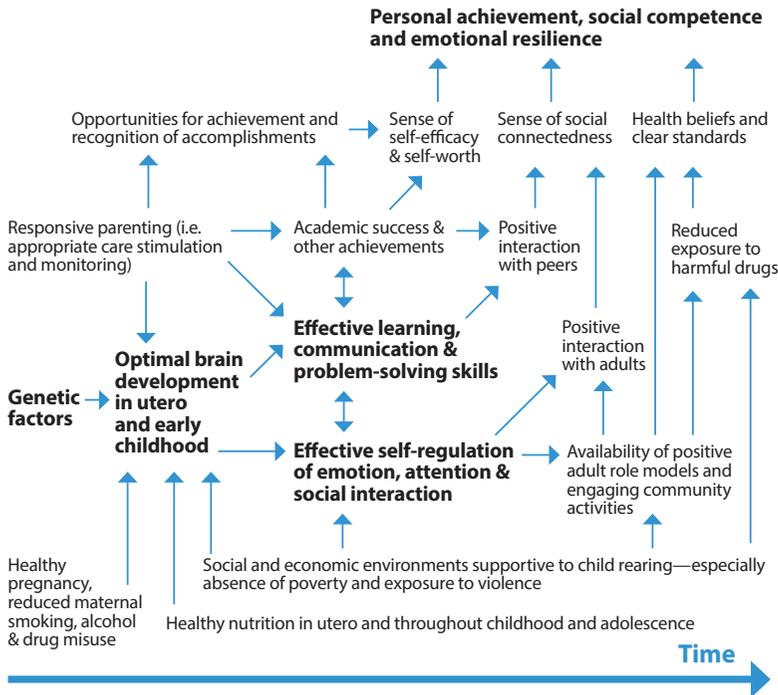
Figure 1: Understanding the casual pathways³



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³ This figure was originally produced by the Telethon Kids Institute.

Figure 2: Pathways to Resilience⁴



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2.4 Why can alcohol use be excessive among young people?

The psychosocial risk factors that can contribute to excessive alcohol use among young people can be broadly categorized into (1) environmental; and (2) individual.

Environmental factors relate to society, community and family. They include favourable messages about alcohol in mass media, such as those in social media; ready availability of alcohol, such as the clustering of alcohol outlets; parental modelling of drinking; and peer influences. While the initiation of alcohol use by young people may be associated with modelling, curiosity or wanting to “fit in”, maintenance and escalation of

⁴ This figure was originally produced by the Telethon Kids Institute.

use have much to do with the perceived rewards—personal or social—that the young person links with the use of alcohol.

While environmental influences appear to be important factors in the early teenage years, genetic factors increasingly influence heavy drinking in the later teenage years into young adulthood (13, 14, 23). Detailed evidence for the role of genetics on heavy drinking in young people is steadily growing, and it is clear that there are multiple inherited influences on alcohol use. For instance, young people with a family history of alcohol problems have reduced sensitivity to alcohol (i.e. feel less intoxicated at high blood alcohol levels than others). Some individuals are genetically predisposed to react at lower doses of alcohol, with facial flushing and feeling generally uncomfortable; this reaction has been attributed to inactive dehydrogenase enzymes in the metabolism of alcohol, estimated to be present in approximately 40% of those of Asian descent.

The interplay between genetic susceptibility and environment is complex but important, as demonstrated by the suggestion that genetic predisposition can even influence selection of environmental factors (e.g. antisocial peers) that are associated with alcohol problems (23). In short, environment can play an important mitigating, or alternatively augmenting, role in the expression of genetic risk for alcohol problems.

Age of onset of drinking

Early onset of drinking (before age 16 years) is strongly associated with the development of alcohol use disorders (15). Both genes and environment are thought to influence the transition to alcohol consumption. A process of “kindling” may, in part, explain the link between early onset of drinking and greater risk of problem drinking—cycles of regular exposure to alcohol early in brain development result in neurophysiological changes that drive further, escalating consumption of alcohol.

Pattern of drinking

A pattern of drinking is strongly associated with both short-term and long-term alcohol problems. Binge consumption, usually defined as more than five standard drinks on a single occasion of drinking, tends to be a prominent association with short-term consequences, while frequency of consumption has been linked to the development of longer-term problems. Binge drinking leads to a high blood level of alcohol, and this impacts the normal cerebral processes of inhibition and self-control,

leading to a heightened risk of accidents, aggression or unsafe sexual behaviour. Frequent consumption of alcohol induces both acute and chronic tolerance in young people (24), and this is thought to prime the brain for perpetuating heavy, and therefore problematic, alcohol use.

Psychological processes in alcohol use

Drinking motives. Certain motives have been linked to heavier drinking and to alcohol-related problems. Drinking for social reasons is the most common motive for alcohol consumption for both young people and adults, but does not appear to predict alcohol problems. On the other hand, drinking to enhance positive mood and drinking to cope are related to overall heavier alcohol use, but it is the coping motive that has particularly been related to alcohol problems (18). Individuals who drink to cope frequently report that they tend to drink alone, and it has been noted that their reliance on alcohol can lead to a further deterioration in the ability to cope (24).

Alcohol expectancies. Anticipated outcomes of alcohol consumption, known as expectancies, influence drinking (25). Early research focused on exploring positive attitudes (26), but later research has determined that negative attitudes can also influence drinking behaviour. This is important when considering strategies to reduce alcohol-related harm, because the drinking outcomes that individuals anticipate can be addressed (27–29). However, there is also research indicating that impulses can drive drinking, and these are distinct from more conscious deliberations. That is, while young people may understand the negative consequences of heavy drinking, they can find it difficult to resist the automatically triggered impulse to drink (30). Motives and expectancies are relatively good predictors of drinking in adolescents with relatively well-developed executive functions, but in adolescents with weakly developed executive functions, automatically activated associations are the better predictor (31).

Peers and parents

Peer influence is a significant factor in a young person's pattern of alcohol consumption. The role of peers in the initiation of adolescent alcohol consumption is crucial (20, 32). Once a young person starts drinking, he or she then tends to seek out friends who also drink. It has also been observed that young people tend to increase their consumption of alcohol when associating with drinking peers. Further, they are more likely to

accept offers of alcohol; feel the pressure to drink or “fit in” with the peer drinking norm; and follow social modelling, observing and imitating their peers’ attitudes to drinking (e.g. that alcohol is a good way to enhance positive feelings). The National Drug Strategy Household Survey in Australia demonstrated that young people who consume alcohol reported that almost all of their peers drink alcohol, whereas those who do not drink reported that less than one-third of their friends consume alcohol (33).

Parental modelling of alcohol consumption, whether for recreational or coping purposes, is also a significant factor influencing when and how young people initiate and maintain the use of alcohol (34). For some young people, for instance, their developmental trajectory occurs within a context of excessive parental alcohol consumption; alcohol use is almost normative for them. In addition, parents appear to influence peer selection, because adolescents who have parents who frequently smoke or drink alcohol are more likely to choose to associate with peers who display these behaviours as well (35).

Personality characteristics

Impulsivity, an area of great interest in alcohol and drug research, is a personality characteristic, with some individuals being more impulsive than others. Impulsive individuals prefer not to wait and often act before thinking. They are also often very curious about the unknown and are consistently attracted to excitement in activities and with peers. There is evidence suggesting that adolescent drinking may reinforce and strengthen impulsivity (36). When young people start drinking at a young age, their later drinking behaviour appears more strongly impulsive, triggered by the drinking environment, and less influenced by any reflection or consideration of possible consequences of drinking.

It has long been recognized that there is not one kind of addictive personality. Different personality characteristics are associated with progression to alcohol problems. Individuals with childhood issues like conduct problems, aggression and attention deficit hyperactivity disorder (known as “externalizing problems”) are one risk group. Research shows that this group often scores highly on measures of sensation-seeking, impulsivity and related traits. Another group at risk are young people with a tendency towards depression, anxiety and related problems (known as “internalizing problems”).

Practical approaches based on these findings are currently being explored. For example, a brief screener, the Substance Use Risk Profile (37), has been developed that focuses on four high-risk traits (i.e. sensation-seeking, impulsivity, anxiety sensitivity and hopelessness). With this measure, adolescents with high scores on one of these traits are included in a personality-based, targeted preventive intervention (e.g. in the group identified as sensation-seeking, better ways to address this aspect of their personality than alcohol and drug use were explored). Variants of this programme have been found to reduce alcohol and drug use in adolescents with a high-risk personality profile (38).

Mental health

Abuse of alcohol or other drugs is strongly associated with mental health problems (39). The onset for mental disorders, especially depression, self-harm, anxiety and early onset psychotic illness, peaks in the teenage and young adult years (40). It is estimated that up to 10% of young people experience significant depression (41).⁵ As this risk period coincides with the time of experimentation with alcohol and other substances, alcohol is consumed by some young people to relieve anxiety, forget problems or elevate their moods.

Depression and suicide are closely linked to alcohol consumption. Intoxication is associated with impairment of decision-making and impulse control, and states of significant intoxication with alcohol or other drugs are linked to self-harm, suicidality and completed suicides. A history of childhood sexual abuse and its impact on subsequent mental health have also been documented to be strongly associated with alcohol abuse.

When a mental health disorder is co-morbid with heavy alcohol use, there is a greater likelihood of alcohol problems persisting into young adulthood and a poorer longer-term prognosis (43).

Other factors

Certain groups of young people typically demonstrate patterns of higher alcohol consumption. These include young people in isolated geographical regions such as rural areas, young people working in the hospitality industry, individuals with chronic illness (e.g. diabetes), young

⁵ Data from the Western Pacific Region regarding the prevalence of these disorders are limited, but it is thought that the prevalence may be increasing, similar to those reported in other parts of the world (42).

people who have witnessed violence, youth involved in the juvenile justice system, youth out of home (e.g. homeless or street youth), individuals with multiple sexual partners or involved in sex work, and bisexual and same sex-attracted young people. Moreover, in certain marginalized communities, the use of alcohol is endemic and thus normalized. The reasons underlying heavy alcohol consumption in these groups are complicated, usually multifactorial, and both individual and environmental in nature (see Chapter 4).

Other substance use

Other substance use is also associated with alcohol consumption. In general, alcohol used with other drugs increases the chance of negative consequences, largely as a result of behavioural disinhibition. Other drug use may also predict problem alcohol use in the longer term. For example, tobacco and cannabis use by young people were identified in an Australian longitudinal study to increase the risk of heavy alcohol consumption continuing into young adulthood (44). Drug use in combination with alcohol may impair brain development more than if only alcohol is consumed, although it seems that some illicit drugs in combination with alcohol may be more harmful than others. Further work in this area is still needed to clarify how poly-drug use affects the young brain.

2.5 What are the consequences of alcohol use in young people?

Short-term harm

Alcohol is a powerful agent of disinhibition and, in conjunction with immature decision-making processes and/or impulsive or sensation-seeking personality characteristics, often manifests in risk-taking behaviour that puts the individual and the community at great risk. There are four broad categories of risk-taking behaviour that are consistently documented to be associated with excessive alcohol consumption in young people: (1) high-level intoxication that results in loss of consciousness and risk of death (sometimes known as “coma drinking”); (2) accidents (e.g. road trauma (45), machinery);⁶ (3) violence (e.g. assaults, injuries); and (4) risky sexual behaviour, including unprotected sexual intercourse resulting in sexually transmitted infections or unplanned pregnancies, and sexual intercourse that young people later regret (47).

⁶ Less data exist for other alcohol-related accidents such as accidental drowning which, in the Western Pacific Region, is the seventh leading cause of death in those aged 15–29 years (46).

Persistence of alcohol problems

When harmful alcohol-related consequences in young people occur repeatedly, they are associated with increased risk of alcohol use disorders persisting into young adulthood. In a large study of young Australians followed from ages 15 to 21 years, it was found that the clearest predictor of alcohol dependence in adulthood was regular recreational drinking in their teenage years. Regular drinking has consistently been noted to cluster with a range of other health risk behaviours including injuries under the influence of alcohol, tobacco smoking in higher doses, cannabis use and sexual risk-taking (44, 48).

Harm to physical health

Physical harm caused by alcohol includes liver injury, many forms of cancer, gastrointestinal damage, immunodeficiency, cardiovascular disease, abdominal obesity and neurological harm. These are rarely diagnosed in young people but manifest in later adulthood when the body becomes less able to repair and regenerate in response to repeated high-level exposure to alcohol. The vast majority of individuals with alcohol-related diseases report that they commenced their drinking in adolescence or young adulthood.

2.6 What are the effects of alcohol on the brain?

The effects of alcohol on a young person's brain differ from the effects on an adult brain. Young people's brains appear to be more sensitive to damage from alcohol but less sensitive to some of the side-effects of alcohol (15). For example, young people appear less sensitive to the sedative effects and to the effects of alcohol on balance and motor coordination. Human studies of the effects of alcohol are limited by ethical considerations, but animal experiments have demonstrated that adolescents can stay awake and mobile at higher blood alcohol levels than adults. This may explain why young people seem to be capable of consuming more alcohol than adults, with the resulting disinhibition manifesting in the many significant problems observed with youth binge drinking such as injuries and accidents.

In addition, it has been observed that even at moderate doses, alcohol seems to stimulate a loss of control over drinking. Mechanisms underlying this loss of control still need to be clarified. It may be a result of the disinhibiting effects of alcohol, or it may reflect an inherited sensitivity to

alcohol because some individuals, once they start drinking, are far more likely to notice and respond to alcohol-related cues (known as “attentional bias”), perpetuating their drinking (49).

In recent years, there has been much concern about young people’s binge alcohol consumption and brain damage. Alcohol impairs brain maturation processes through inflammation and neural injury, although the exact mechanisms of this injury are not yet entirely clear. Neurocognitive impairments caused by drinking are typically subtle. Females may be more vulnerable; female binge drinkers demonstrated poorer neurocognitive performance compared to male (50). Young people’s memory and learning capacities are the most vulnerable to alcohol (13, 51), but these deficits often may not be noticed in a learning environment. Deficits in executive functions such as problem-solving, flexibility in thinking and in ability to inhibit impulses have also been described in young heavy drinkers (52). These can persist into adulthood, while in others, they abate with abstinence.

Alcohol abuse has also been associated with structural brain abnormalities. For example, the hippocampus, a part of the brain that is important for memory and learning, undergoes significant change during normal adolescent development (53) and appears particularly sensitive to the toxic effects of alcohol. Studies of adolescents with alcohol use disorders show that they have smaller hippocampal volumes (54). Other structural abnormalities, mostly in the form of smaller brain volumes (e.g. prefrontal cortex, amygdala), have also been identified (13, 52).

2.7 What is the natural history of alcohol consumption in young people?

Alcohol problems in young people are not static. In those who are vulnerable, the onset of dependence can occur relatively quickly (i.e. within one year) when compared to adults, for whom it generally occurs over several years. Even those individuals with a formal alcohol use disorder can manifest fluctuations and transition in and out of dependence on alcohol over as short a period as months. It is important to note that many young people with alcohol (or other drug use) problems resolve without formal intervention or treatment, through natural recovery. In fact, research suggests that patterns of heavy drinking in young people tend to continue until early adulthood but then can resolve (48).

Key factors differentiate between those who will, and those who will not, spontaneously reduce their heavy drinking (55), including marriage,

employment, religious affiliation, attitudes towards drinking (56), a change in peer groups or improved engagement with parents (57). Similarly, strategies that young people most commonly use to reduce drinking are environmental exposure management (e.g. avoiding drinking situations), both informal and formal interpersonal supports (e.g. peer support groups), behavioural self-management (e.g. limit consumption) and alternative activities (e.g. recreation, sports). There are also specifically targeted preventions that have been shown to be successful in reducing alcohol-related harm, based on various risk profiles (e.g. challenging the positive outcomes individuals expect from drinking, working with young people with certain risk factors related to personality such as sensation-seeking and impulsivity).

In summary, in recent years, there has been tremendous growth in the understanding of alcohol and its effects on young people. It is clear that the impact of alcohol on young people is significant, both acutely and in the longer term. Young people are sensitive to rapid intoxication, experience harm associated with the resulting behavioural disinhibition and risk longer-term impairment in their learning and development of life skills. Some young people are more vulnerable to harm from alcohol by virtue of the interplay between biological and environmental factors. Moving forward, there is a need to continue to explain the effects of alcohol on cognitive development not only generally, but also in terms of which individuals are particularly at risk and why. The response to the burden of alcohol-related harm is not straightforward and therefore needs a strategic approach, effective by way of its specific targeting of groups at risk.

3. ALCOHOL USE AMONG YOUNG PEOPLE IN THE WESTERN PACIFIC REGION: PATTERNS AND TRENDS

Summary points:

- The prevalence of recent use of alcohol by young people is generally 15–30% for the Region.
- Gender differences in alcohol consumption by young people are eroding across the Region, but some rural–urban differences remain.
- Reduction in use of alcohol by young people is evident in a number of countries and areas, but possibly by less frequent consumers of alcohol reducing or ceasing their use, as there do not appear to be reductions among frequent and heavy consumers.
- A binge pattern of alcohol use is common.
- Significant harm and risks related to alcohol consumption by young people are evident, such as injuries, risky sexual activity, suicidality and impaired relationships and participation in education and employment.
- More routine surveys are needed to determine trends and priority prevention targets, especially for subpopulations that bear a greater burden of alcohol-related difficulties. Mixed methodologies are needed, with qualitative approaches adding to a better understanding of issues. In addition, better data will allow for evaluation of both prevention and treatment interventions.

3.1 What is known about the use of alcohol by young people in the Western Pacific Region?

The prevalence of alcohol use in the Western Pacific Region is diverse between and within countries and areas, and for specific subgroups.

Data reliability

While there have been recent attempts to utilize more standardized surveys across the Western Pacific Region, such as the WHO Global School-Based Student Health Survey (GSHS), Health Behaviour in School-Aged Children Survey, the United States Centers for Disease Control and Prevention Youth Risk Behavior Survey (YRBS), and the Second Generation HIV Surveillance (SGS) supported by the Joint United Nations Programme on HIV and AIDS (UNAIDS), not all questions in the survey instruments are used consistently. Thus, some countries and areas have data on some variables for some years, and some countries and areas omit various questions for unclear reasons.

There is also significant variation in what comprises a standard drink in each survey. For example, in Australia, it is 10 grams, and in Japan, it is 19.75 grams. Further, in many surveys, the definition of a drink is vague. In the GSHS, the relevant question describes “one drink containing alcohol”, and that a drink, imprecisely, “is a glass of wine, a bottle of beer, a small glass of liquor, or a mixed drink”. The Survey Assessment of Vietnamese Youth 2 (SAVY2) in Viet Nam asks if one has “ever finished a glass of beer or a cup of liquor”; for the YRBS, it asks, “during your life, on how many days have you had at least one drink of alcohol?” The SGS defines “a standard drink [as] a can of beer, a glass of wine or port, a nip of spirits, etc.” Thus, such variation makes interpretation, reliability and generalizability of the data problematic.

The various surveys target different ages, as well. For example, the GSHS usually reports on students aged 13–15 years, while the YRBS targets grades 9–12 (i.e., ages approximately 15–18 years). Some target youth in and out of school, and use differing methodologies, such as in-class surveys or computer-assisted, face-to-face, and telephone interviews. Also, data may be edited at different stages, sometimes deemed sensitive or out-of-date.

As such, statistical analyses could not be performed due to the variability of data and lack of access to the majority of data sets. Any differences reported are mostly observations, unless otherwise specified as significant. Taking into account these caveats, however, the available data do provide for the identification of some trends and issues.

Age of drinking onset

The age of initiation to alcohol use, an important marker for future problems in a variety of domains (e.g. disengagement from education, participation in

crime, and physical and mental health concerns and alcohol dependence) appears to be declining in some countries and areas in the Region, for example, China, where males initiate drinking earlier than females (58) and Hong Kong SAR (59). For Australia, there has been little change since 1995 (60), and the age of initiation to alcohol use of 12.6–13.0 years appears to have been stable in the Republic of Korea since 2005.⁷

Drinking prevalence

Table 3 displays the latest available data for the recent use of alcohol. Recent use is, generally, the use of alcohol in the 30 days prior to the survey. Acknowledging the data cautions above, it can be observed that proportions of young people who reported recent use of alcohol vary considerably across the Western Pacific Region, but are generally lower than those for Australia and New Zealand, other than for some Pacific island countries and territories PICTs. It can be observed in Table 3 that for the majority of the PICTs included, the prevalence of recent use of alcohol ranges from 15% to 30%. Some—as in Cambodia, China, Japan, Malaysia, Mongolia, and the Philippines (Mindanao and Visayas)—have lower levels of recent use. Others have higher levels, as in Cook Islands, older youth in the Lao People’s Democratic Republic, the Marshall Islands, New Caledonia, New Zealand, the Commonwealth of the Northern Mariana Islands, Solomon Islands, Tonga and Vanuatu. However, data for some are mostly from wider age range samples, more at-risk youth and PICTs.

Table 3: Recent youth alcohol use in the Western Pacific Region^a

COUNTRY OR AREA	SURVEY USED AND SAMPLE	YEAR	MALE %	FEMALE %	TOTAL %
American Samoa	YRBS Students aged 15–18 years ^b N = 2577	2011	24.2	21.4	22.8
Australia	Secondary School Survey Students aged 12–17 years N = 24 854	2011	29.6	27.8	29.1
Cambodia	GSHS Students aged 13–17 years N = 3806	2013	10.3	4.2	7.3

⁷ Kim K, Korea Youth Risk Behaviour Web-Based Survey, personal communication, 2013.

Table 3: Recent youth alcohol use in the Western Pacific Region^a(cont.)

COUNTRY OR AREA	SURVEY USED AND SAMPLE	YEAR	MALE %	FEMALE %	TOTAL %
Cambodia ^c	Cambodian YRBS Students aged 11–18 years N = 9388 In school, N = 4284 Out of school N = 5104	2004	43.2	37.6	42.0
			71.0	44.2	63.4
China: Beijing	GSHS Students aged 13–15 years N = 2348	2003	17.1	8.6	13.0
China: Hangzhou	GSHS Students aged 13–15 years N = 1802	2003	20.9	15.0	18.1
China: Hong Kong SAR	Survey of Drug Use among Students Students aged 10–23 years ^e N = 155 859	2011/ 12	20.1	16.9	18.4
China: Wuhan	GSHS Students aged 13–15 years N = 1947	2003	19.7	9.7	14.8
China: Wulumqi	GSHS Students aged 13–15 years N = 2918	2003	16.3	11.0	13.7
Cook Islands	SGS Youth aged 15–24 years N = 258	2006	-	-	57.0
Cook Islands	GSHS Students aged 13–15 years N = 1274	2011	29.4	28.7	29.1
Fiji	GSHS Students aged 13–15 years N = 1673	2010	22.1	11.1	16.4
French Polynesia	Survey on Addictive Behaviours of Adolescent Polynesians Students aged 12–18 years ^d N = 4591	2009	40.7	42.9	41.8
Guam	YRBS Students aged 15–18 years ^b N = 1385	2011	24.2	25.4	24.7
Japan	Japanese YRBS Students aged 16–18 years ^f N = 9778	2011	14.7	16.0	15.4
Kiribati	GSHS Students aged 13–15 years N = 1582	2011	43.7	19.3	30.3

Table 3: Recent youth alcohol use in the Western Pacific Region^a (cont.)

COUNTRY OR AREA	SURVEY USED AND SAMPLE	YEAR	MALE %	FEMALE %	TOTAL %
Lao People's Democratic Republic: Luangnamtha Province	Health Risk Behaviour Survey Youth aged 14–15 years N = 447	2011	21.2	31.9	27.5
	Youth aged 16–19 years N = 913		54.8	44.2	49.8
Lao People's Democratic Republic: Vientiane, Luangprabang and Champasack	Household survey Youth aged 15–24 years N = 200	2012	51.1	48.9	50.0
Malaysia	GSHS Students aged 13–17 years N = 25 507	2012	11.0	6.3	8.6
Marshall Islands	YRBS Students aged 15–18 years ^b N = 1522	2007	51.0	33.4	41.7
Mongolia	GSHS Students aged 13–17 years N = 5393	2013	10.8	7.1	8.9
New Caledonia	SGS Youth aged 15–24 years N = 292	2005	64.7	42.5	54.8
New Zealand	Secondary School Survey Students aged 13–17 years ^d N = 8500	2012	45.3	45.5	45.4
Nauru	GSHS Students aged 13–15 years N = 578	2011	27.1	17.6	21.9
Niue	GSHS Students aged 13–15 years N = 141	2010	35.5	-	23.0
Northern Mariana Islands, Commonwealth of the	YRBS Students aged 15–18 years ^b N = 2074	2005	47.6	40.0	43.6
Palau	YRBS Students aged 15–18 years ^b N = 1116	2011	50.1	37.5	43.4
Philippines	GSHS Students aged 13–15 years N = 5290	2011	22.5	15.4	18.7

Table 3: Recent youth alcohol use in the Western Pacific Region^a (cont.)

COUNTRY OR AREA	SURVEY USED AND SAMPLE	YEAR	MALE %	FEMALE %	TOTAL %
Republic of Korea	Korean YRBS Students aged 13–19 years N = 80 000	2012	22.7	15.8	19.4
Samoa	GSHS Students aged 13–15 years N = 2418	2011	43.4	25.4	34.2
Solomon Islands	SGS Youth aged 15–24 years N = 592	2008	41.5	29.5	35.5
Solomon Islands	GSHS Youth aged 13–15 years N = 1421	2011	21.2	13.4	18.0
Tokelau	SGS Youth aged 15–24 years N = 207	2007	56.0	30.0	44.0
Tonga	SGS Youth aged 15–24 years N = 387	2008	45.0	28.0	40.0
Tonga	GSHS Students aged 13–15 years N = 2211	2010	14.9	17.9	16.4
Vanuatu	SGS Youth aged 15–24 years N = 301	2008	38.9	19.0	28.5
Vanuatu	GSHS Students aged 13–15 years N = 1119	2011	10.3	5.8	8.3
Viet Nam	GSHS Students aged 13–17 years N = 3331	2013	31.7	16.5	23.7

GSHS : World Health Organization Global School-Based Student Health Survey, SGS : Second Generation HIV Surveillance, YRBS : Youth Risk Behavior Survey.

^a For some Pacific island countries and territories (e.g. Cook Islands, Solomon Islands, Tonga and Vanuatu) data from two different surveys are presented.

^b Students in grades 9–12.

^c Of those who reported ever drinking (14% of those surveyed).

^d Students in secondary and professional schools.

^e Students in upper primary, secondary and post-secondary schools.

^f Students in grades 10–12.

^g Students in grades 9–13.

Sources: (61–70); Centre for Alcohol Studies, Thailand, A baseline survey on alcohol consumption behavior and harm to others from drinking in three provinces, namely Vientiane capital, Luangprabang and Champasack, Lao People's Democratic Republic, 2013 unpublished preliminary data; and Kim K., Korea Youth Risk Behavior Web-Based Survey. Personal communication, 2013.

Some countries and areas not in Table 3 have undertaken surveys of young people and their use of alcohol, but only reported “ever” use of alcohol was made available. It must be noted that “ever used alcohol” is a rough measure, and does not indicate risk and morbidity. A positive response may denote one sip and then abstinence, or the onset of heavy, frequent drinking.

For the Federated States of Micronesia, the 2007 SGS found that 80.0% of males and 55.2% of females aged 15–24 years reported ever use of alcohol (66). In the 2010 Singapore Adolescent Health Survey of over 1500 secondary students, 34% of the sample reported ever drinking (71), and the SAVY2 in 2009 indicated that 79.9% of males and 36.5% of females aged 14–25 years had drunk alcohol (72). In addition, the 2010 Cambodia survey of over 1000 10–19-year-old most-at-risk young people aged 10–19 years found 81.4% of males and 57.6% of females reported ever drinking alcohol (73).

Trends in drinking prevalence

This section reports on trends, where more than one year’s data are available and allow for some comparisons. Again, the same survey may not have been used in each time period. It is also important to note that differences between surveys, especially decreases, may be a result of a reduction of those experimenting with alcohol or irregular consumers. While some may tend to remain drinking frequently and heavily, this cannot be confirmed from the available surveys. Overall, there is no clear regional pattern, and there also appears to be some variation within countries or areas (e.g. the Philippines).

Probable decreases. The proportion of Australians aged 14 years and over who reported drinking alcohol on a weekly basis fell, with the 2010 survey revealing that 39.5% reported weekly drinking, while 33.8% reported drinking on a less-than-weekly basis, 7.2% on a daily basis and 19.5% report being nondrinkers (comprising 7.4% ex-drinkers, and 12.1% alcohol abstainers). The proportion of 12–15-year-olds abstaining from alcohol increased from 69.9% in 2007 to 77.2% in 2010, and for 16–17-year-olds, from 24.4% to 31.6%. Data from the national survey of secondary school students in 2011 revealed similar data and trends to those from the broader national household survey in 2010, which included youth in and out of school. For example, more than seven-day drinking for 12–15-year-olds fell from 22% (2005) to 11% (2011) (62).

For Hong Kong SAR, while between 2005/06 and 2008/09 the percentage of youth aged 18–24 years who consumed alcohol in the previous month rose from 27.1% to 37.1% (74), the most recent survey showed a decline in both ever and recent use. However, between 2008/09 and 2011/12, the percentage of youth aged 10–21+ years who consumed alcohol in the past 30 days dropped from 25.5% to 20.1% for males and from 21.4% to 16.9% for females (66).

There is some evidence of significant decreasing use of alcohol among young people in the Republic of Korea and Japan. Current use of alcohol declined from 27.0% of students surveyed in the Republic of Korea in 2005 to 19.4% in 2012.⁸ Nozu et al. (68) found that, for young males in grade 10 (i.e. ages about 15–16 years) in Japan, 71% reported ever drinking in the 2001 survey, and 42% in the 2011 survey. For grade 10 females, the change was from 64% in 2001 to 37% in 2011. For grade 12 students (i.e. ages about 17–18 years), the changes were from 86% in 2001 to 55% in 2011 for males, and for females from 81% in 2001 to 50% in 2011.

The influence of parental modelling of alcohol use and home supply appear to be factors in the reduction in drinking by young people in some countries and areas. For example, Osaki et al. (75) suggested that the decrease in Japan may be associated with a decrease in the drinking prevalence of male family members and a limitation of sources to obtain alcoholic beverages.

The 2013 GSHS survey in Mongolia also indicated a reduction in alcohol use, down from 5.6% in the 2010 survey to 4.5% in 2013 for recent drinking (64). The 2007 New Zealand health and well-being survey reported a slight decrease in alcohol use among Māori and Pasifika youth (76, 77), and the 2012 student survey demonstrated a significant decline in alcohol consumption from the 2007 survey (78). Data from the YRBSs undertaken in some PICTs with smaller populations, presented in Table 4, indicated reductions in use, including reductions in binge drinking, except for Palau (4).

8 Kim K, Korea Youth Risk Behaviour Web-Based Survey, personal communication, 2013.

Table 4: Changes in alcohol consumption by gender in selected PICTs^a

ALCOHOL CONSUMPTION	GENDER	AMERICAN SAMOA		GUAM		PALAU	
		1993	2011	1995	2011	1999	2011
Ever had at least one drink of alcohol on at least 1 day	Male %	53.5	43.4	65.0	57.3	76.8	68.5
	Female %	48.6	39.1	68.1	59.7	66.7	62.7
Drank alcohol for the first time before age 13 years (other than a few sips)	Male %	34.8	16.8	37.6	20.4	34.1	29.9
	Female %	30.5	8.2	19.8	15.8	21.1	15.1
Had at least one drink on at least 1 day during 30 days before the survey	Male %	34.8	24.2	37.6	24.2	51.7	51.0
	Female %	30.5	21.4	30.5	25.4	29.2	37.5
Had five or more drinks of alcohol in a row within a few hours on at least 1 day during 30 days before survey	Male %	27.4	15.5	16.6	14.6	39.6	39.7
	Female %	18.3	13.1	12.7	12.6	10.5	26.4

Sources: (61, 65).

Possible increases. There is some evidence that the proportion of young people who drink and the amount of alcohol consumed are increasing in China. The proportion of adolescents who drink increased with age and grade in school (58).

There appears also to be an increase in alcohol use among young people in Viet Nam. Results from SAVY2 undertaken in 2009 were compared to those from SAVY1 in 2003. SAVY2 asked whether respondents ever had a drink of beer or liquor; 58.6% of respondents (79.9% of males and 36.5% of females) reported that they had; this represents a 10% increase for males and 8% increase for females over SAVY1. Of those who drank, being drunk at least once in past month was reported by 30.8% of SAVY2 14–17-year-olds, 52.1% of those aged 18–21 years, and 60.2% of those aged 22–25 years (79, 82).

Stable and mixed trends. For Malaysia, there does not appear to have been much change in drinking prevalence for those aged less than 18 years. Ahmed (80) reported 11.2% for “ever use” alcohol in 2006, and the GSHS reported 11.0% in 2012 (64).

Data from the Philippines 2003 and 2011 GSHSs indicated that recent drinking has increased for the island of Luzon, the most urban area of the Philippines, but has decreased for Mindanao and the Visayas islands (64).

3.2 Do gender, rural–urban differences and ethnicity influence drinking of alcohol by young people in the Western Pacific Region?

Gender

Gender differences among adolescents who drink alcohol appear to be narrowing in a number of countries and areas in the Region, with rates for young females gradually approaching those for males. Gender differences for recent use of alcohol are virtually nonexistent for a number of countries and areas, for example in American Samoa, Australia, Hong Kong SAR, Cook Islands, Japan, the Republic of Korea, Mongolia (urban areas), Nauru, the Commonwealth of the Northern Mariana Islands and New Zealand. Gender differences exist for a number of the PICTs, Malaysia, Mongolia (rural areas), the Philippines and Viet Nam, where male rates continue to be significantly higher (Table 3).

Some gender differences appear where the level of drinking and consequences are examined. For example, in Japan, where gender differences regarding drinking are not very significant, boys exhibited more binge drinking and drinking problems, such as fighting, vomiting, having hangovers and blacking out (68, 81).

Gender differences are also evident for Cambodia, where the most-at-risk youth 2010 survey found that 70% of female and 91% of male respondents reported drinking alcohol for reasons such as socializing with their peers, celebrating, coping with stress and looking fashionable or wealthy. The median age of first drinking of alcohol among those aged 10–19 years was 17 years for females and 16 years for males. Among respondents aged 10–19 years, 8.09% of females and 1.11% of males identified themselves as heavy drinkers. This higher number of female heavy drinkers may be related to many working in karaoke bars or nightclubs, where they are required to drink with their customers (74).

Likewise, for China, the results of many surveys showed that there is a significant difference between the drinking rates and patterns of young men and young women (58, 64). Males preferred drinking beer, while females preferred wine, and, as for a number of countries, males began to drink at a younger age. For Viet Nam, the SAVY2 revealed that young

males (79.9%) used more alcohol than young females (36.5%), and 60.5% of young males and 22.0% of young females reported ever being drunk.

Rural–urban differences

The Western Pacific Region demonstrates diversity in rural and urban areas regarding alcohol consumption among young people. Zhou et al. (82) reported on a 2007 household survey of 9866 households in Hunan and Henan provinces in China. They revealed that for those aged 18–24 years in the more rural Hunan sample, 56.0% drank alcohol, with 9.4% drinking heavily and 2.1% reporting acute intoxication in the past three months with homemade wine, beer or high-content spirits. In the more urban Henan sample, 68.8% drank alcohol, with 19.6% drinking heavily and 6.2% reporting acute intoxication in the past three months with beer or high-content spirits being consumed. However, Ling (58) reported that students in urban areas of China were more likely to be drinkers than those in rural areas, and those in occupational schools were more likely to be drinkers than those in key (i.e. prestigious) or general schools. This is similar for Mongolia, where the 2013 GSHS found that urban students drank more than those from rural areas (urban males, 7.1%; rural males, 2.7%; urban females, 5.5%; rural females, 2.6%) (64).

The reverse is the situation for New Zealand, where 67% of rural students and 55% of urban students reported ever drinking alcohol. Current drinking was reported by 44% of urban and 56% of rural students. These rural–urban differences were also valid for binge drinking (28%, rural; 22%, urban) (69).

For Vanuatu, the Vanuatu National Statistics Office (83) report noted that for rural areas, 7.2% of males aged 15–19 years and 1.2% of females reported drinking alcohol in the week before the 2009 census, whereas for urban areas, 13.9% of males and 4.6% of females reported the same.

For Viet Nam, the SAVY 2 survey noted that urban youth were slightly more likely to report ever having had a drink of alcohol than those in rural areas (61.1% versus 57.8%). While there has not been much change in urban drinking in the past five years, in rural areas, there was a 10% increase.

Ethnicity

Ethnicity appears to be associated with differing patterns of alcohol use in some countries in the Region, especially for marginalized and indigenous populations. For instance, in Guam, binge drinking was highest among Caucasian secondary school students (40%) followed by Chamorro (22%), Micronesian Islander (17%), Filipino (14%) and Other Asian (14%) students. Since 2005, binge drinking decreased markedly among Micronesian Islander students, but increased among Caucasian, Filipino and Other Asian students (84).

A Malaysian survey of alcohol use found that among those ages 18 years and below, the prevalence of having ever consumed alcohol was 7%, and consuming alcohol in the past month was 2% (85). Among the adolescents who consumed alcohol in the past month, the prevalence was highest among Chinese (9%) and Christians (11%).

Of the New Zealand students participating in the 2007 health and well-being survey (86), Māori suffer disproportionate harm from alcohol use than other ethnic groups. While rates of ever and recently using alcohol were higher for both male and female Māori students than the national averages (76), they were lower for New Zealand Samoan and Tongan youth, with Cook Islands and Niue youth at the national average or slightly higher (77).

Being from Hmong and Yao ethnic groups appeared to be protective against consumption of alcohol, according to data from the Longnamtha youth study in the Lao People's Democratic Republic (70). In Australia, while fewer Aboriginal Australians drank alcohol than non-Aboriginal, those who did drink did so at riskier levels (60).

3.3 Are there evident harm and risks for alcohol consumption by young people in the Western Pacific Region?

Harm and risks associated with alcohol consumption, including kava and home-brewed alcoholic drinks, are significant but not evenly distributed among young people. This section focuses broadly on risky patterns of drinking, irrespective of risk group, gender, sexual risks and alcohol-related injuries. Early onset and frequent drinking of alcohol has numerous and serious social, health and educational impacts, including underachievement and early departure from education, training and employment. Alcohol consumption levels tend to be greater for those

young people who are unemployed, of indigenous identification, from remote locations or attracted to the same sex. Of particular concern are the associations with road accidents, other injuries, sexually transmitted infections, violence and suicidality (87). Cautions regarding the data are again important, as definitions of standard drinks, binge drinking and low- and high-risk levels of consumption vary, making comparisons problematic.

Binge and heavy drinking

The proportion of 14–19-year-old Australians consuming alcohol in quantities that were considered to be low-risk to health in the long term declined between 2007 and 2010, but not so for risky, binge consumption (Table 5). A potential explanation for these trends is that the reductions in alcohol consumption among young people are due to a decline in consumption among less risky drinkers.

Table 5: Alcohol consumption and risk of harm in the long and short term in the last 12 months: proportion of the Australian population aged 14–19 years, 2007 and 2010

GENDER	ABSTAINERS %		LOW RISK %		RISKY %	
	2007	2010	2007	2010	2007	2010
All	29.0	35.4	56.9	49.8	14.1	14.8
Male	29.2	35.4	53.7	48.5	17.1	18.7
Female	28.7	35.4	60.3	54.0	11.0	10.5

Source: (60).

In Guam, the prevalence of binge drinking among secondary school students in 2011 was 14.6% for males and 12.6% for females. Surveys were also undertaken in 2003, 2005 and 2007, and showed that the proportion of binge drinking increased overall between 2003 and 2007. Between 2003 and 2005, it was found that more males were binge drinking, and between 2005 and 2007, more females were binge drinking. However, the proportion has declined for males since then (61). For out-of-school youth, the prevalence of binge drinking was much higher, with rates of 79% for males and 57% for females in Solomon Islands (2008), with reports of usually drinking five or more standard drinks per drinking occasion. In 2008 in Vanuatu, 57% for males and 52% for females reported consuming more than five standard drinks in a drinking session at least monthly (66).

The New Zealand 2007 student survey found that Māori youth, who drink less frequently than other ethnic groups, usually drank more per drinking occasion (78). The 2012 student survey found that 23.0% of males and 22.2% of females reported binge drinking in the past month, which was a decrease in rates reported in the 2007 survey (69). For Japan, there appears to have been significant reductions in binge drinking from 2001 to 2011; grade 12 male students, from 42.6% to 12.6%, and for females, 27.2% to 8.5% (68). Data on Chinese college students suggest that a larger proportion of students from small towns and rural areas were episodic heavy drinkers than those from urban or suburban areas, 58.3% versus 45.4% (58).

The Singapore national surveys from 1992 to 2010 showed an increase in binge drinking among young people aged 18–29 years from 6.1% to 15.5% in 2010.

Harm

Australian studies of alcohol-related injuries for young males (88) found expected associations between alcohol use and road accidents, violence, self-harm and falls. The frequent cluster of risk behaviours, of which alcohol forms a part, were noted. Aboriginal Australian youth bore a significant burden of alcohol-related morbidity and mortality. Chikritzhs & Pascall (89) found death caused by drinking among Aboriginal Australian youth was 2.3 times higher than for non-Aboriginal Australian youth. It was also higher for youth from nonmetropolitan areas—1.7 times greater—and alcohol was associated with suicide among young Aboriginal Australians. The report on health of young males (90) indicated that 43% of males aged 14–19 years were at risk of injury from a single occasion of drinking alcohol, compared with 39% of females of the same age group. In addition, recent and frequent use of alcohol was also found to be common for young people seeking mental health care. Weekly use of alcohol was 12% for those aged 12–17 years and 39% for those aged 18–19 years in a sample of young people aged 12–19 years presenting for mental health assistance. These rates were about twice those in comparable national data (91).

Young males in industrialized countries tend to die from external causes, such as accidents (especially road), suicide, poisoning, violence, drowning and falls. If death is not the outcome, then significant disability may be, which has significant costs, both personal and economic. While

recognizing data flaws, Australian data on attributable fractions indicated alcohol use contributed to 12–14% of injuries in 1998, and 13–77% of falls, 21–47% of water-related injuries, 3–16% of work-related injuries and about 12% of intentional injuries (88).

Research from China indicated links between alcohol use and traffic accidents, and numerous health and social problems. Ling & Newman (58) reported that 5% of 15–19-year-old males were daily drinkers, and 15% drank alcohol in the past 30 days. The 2003 GSHS showed variable results in the four cities where it was conducted: Beijing, Hangzhou, Wuhan and Wulumqi. The data demonstrated that 8.4–13.5% of 13–15-year-olds had so much alcohol that they were drunk one or more times during their life, and 4.2–6.3% of students had had a hangover, felt sick, got into trouble with family or friends, missed school or got into fights as a result of drinking alcohol one or more times during their lifetime.

Further, excessive drinking among young Fijians has been reported as a significant contributor to road accidents, violence and aggressive behaviour, unwanted pregnancies, sexually transmitted infections, criminal activities, mood changes and mental health diagnoses. In many instances, young people often end their kava drinking session by consuming alcohol. It is also reported that most youths drink excessively to manage their problems, but it may result in new problems like unsafe sex, crime and violence and even suicide. The study in Fiji revealed that alcohol was a factor in 58% of all homicides between 1982 and 1992, and approximately 80% of the crime in the country was alcohol-related (92).

The Guam 2007 YRBS indicated that the prevalence of drinking and driving among secondary school students was 8%, a decrease since 2005 due to decreased drink-driving among males. Drink-driving, however, was higher among males (10%) than females (6%). The prevalence of current and lifetime alcohol consumption was similar among secondary school students and court-involved youth; however, court-involved youth were more likely to binge drink and to drink and drive than their secondary school peers (93). Similarly, for youth out of school, out of home and in detention who are not captured by the YRBS, a sample of 2239 young people under 18 years (with about 60% ages 14–16 years) found that 15% began drinking prior to age 13 years, 20% had ridden in a motor vehicle driven by someone who had consumed alcohol, and about 10% had driven a motor vehicle after consuming alcohol. It also must be noted that Chamorro and Chuukese youth in Guam had a greater number of suicides

in 2000–2010 than in Filipino and Caucasian youth. Current and binge drinking were correlates of youth suicide ideation (94).

For the Republic of Korea, 2012 data for those who are current drinkers suggested that more young females (50.8%) are drinking at risky levels than males (45.6%), but problem drinking was equal between the sexes at 41%.⁹ Delva et al. (95) reported on a sample of 2077 female students with a mean age of 15 years, and found an association between alcohol use and depression. Problems associated with drinking included fighting, arguments and family conflict. Kim and Kim (96) found that early initiation to alcohol use predicted suicidal ideation and suicide attempts for both males and females.

Kava use was associated with suicidal ideation and attempts among a sample of 16–25-year-olds in New Caledonia, as was early alcohol initiation and same-sex attraction, especially among Kanak youth (97).

In a 2010 Cambodian survey of most-at-risk young people, 57.6% of females and 81.4% of males drank alcohol, and 8.1% of females and 1.1% of males were categorized as heavy drinkers. Many of the young women worked in nightclubs, and often engaged in sex work. Alcohol use was also linked to early sexual debut, unsafe sexual practices and violence (73).

In the Lao People's Democratic Republic, 21% of young people aged 15–24 years surveyed in Vientiane, Luangprabang and Champasack reported drinking five to seven days a week. Risks associated with alcohol consumption included inability to meet financial obligations, driving while intoxicated, blacking out and losing employment.¹⁰

Of students reporting current drinking in the New Zealand 2013 health and well-being survey, 19.8% of males and 9.8% of females consumed 10 or more drinks in a usual drinking session. Among students who consumed alcohol in the past month, substantial numbers reported problems from drinking alcohol, such as unsafe sex (9.5% of males and 13.3% of females), unwanted sex (3.6% of males and 5.4% of females), injuries (12.8% of males and 17.6% of females) or injured others (5.6% of males and 3.7% of females) or being in a road accident (2% of males and 1% of females) (69).

9 Kim K., Korea Youth Risk Behavior Web-Based Survey, personal communication, 2013.

10 Centre for Alcohol Studies, Thailand, A baseline survey on alcohol consumption behavior and harm to others from drinking in three provinces namely Vientiane capital, Luangprabang and Champasack, Lao People's Democratic Republic, unpublished preliminary data, 2013.

A 2005 research report on Vanuatu also highlighted an association between binge drinking and increased number of sexual partners (98). Lee and Jenner (99) indicated concerns about the consumption of home-brewed alcohol, which was particularly prevalent among young people who were unable to afford store-bought alcohol. Around one in four young people, some as young as aged 12 years old, interviewed in Port Vila admitted to drinking home-brewed alcohol. They added, "Harms from home brew include variations in quality and strength, leading to acute intoxication and possible toxicity, accidents and injuries, drink-driving, aggression and violence, and possible exposure to contaminants."

Data from the YRBSs undertaken in some PICTs indicated reductions in potentially risky behaviours, such as drinking on school premises, riding in a vehicle driven by someone who had been drinking, driving after drinking, and drinking before last sexual intercourse (61), for American Samoa, the Marshall Islands, and the Commonwealth of the Northern Mariana Islands, but not for Palau. For example, American Samoa had a reduction from 55% of males and 41% of females riding with a driver who had been drinking in 1993 to 35% of males and 25% females in the 2011 survey. Alcohol-associated sexual activity did not generally show any declines over time.

3.4 Do sexuality, occupations and workplaces, and risk status influence the drinking of alcohol by young people in the Western Pacific Region?

Alcohol-related morbidity and mortality are not evenly distributed; minority status, marginalization and occupations and workplaces can elevate risks. The 2011 review of alcohol and other substance use among young people in the Western Pacific Region (81) noted that the burden of disease and morbidity fell heavily on vulnerable young people, often referred to as most-at-risk young people, which includes very young adolescents, same sex-attracted persons, minority populations or cultures, young sex workers, young workers, young parents, those in juvenile justice or other closed settings, and those living in very risky situations and environments.

These young people may have different patterns of alcohol and other substance use and harm, and may need specific approaches targeted to their unique needs. In addition, increased risk results from the interplay of individual, familial, community, societal and broader risk and protective factors. Young people away from home, such as students in dormitories; trainees in marine colleges or military camps; and those who travel away

from home for work, like those in forestry, are often exposed to different influences. Various occupations also expose young people to alcohol and other substance use, such as hospitality, sex work, mining, fishing and construction. In many of these settings and occupations, there is exposure to heavy alcohol consumption, and expectations and even pressure from experienced peers or older co-workers to consume alcohol often at risky levels.

Sexual orientation

Alcohol use and sexual orientation are related in complex ways. As Howard and Arcuri (100) suggested, alcohol can be used to ease social situations in which sexual activity is anticipated or desired, to enhance sexual pleasure, as an excuse for inadequate sexual performance, or to excuse desired unsafe sexual activity such as the avoidance of condom use or abusive sex. Alcohol can also be used to ease transitions between public and private sexual identities or behaviour, for example, heterosexual young men having sex with other men, or moving from more normative patterns of sexual activity to more exotic behaviour. Alcohol use also has a role to play in celebrations related to sexuality, such as “coming out” in some same-sex attracted subcultures.

There is increasing recognition that rates of substance use are considerably higher among same-sex-attracted youth than among heterosexual populations (101). The Hillier et al. (102-104) studies of same-sex-attracted young people in Australia confirmed that despite reductions in alcohol use among same-sex-attracted youth, the levels remained well above those of opposite-sex-attracted youth population in Australia. Many of these young people were, in fact, self-medicating to ease the pain of the rejection and hostility in their families, schools and communities. Associations with suicidality have also been consistently found in studies in Australia and the United States of America (105-107).

An analysis of data from the 2007 New Zealand youth health and well-being study data found links between the quantity of alcohol consumed and suicidality among students attracted to the same sex or both sexes, 39% suicidal ideation among youth attracted to the same sex or both sexes versus 13% for heterosexual youth, and 20% of same and/or both sex-attracted youth reported making a suicide attempt versus 4% for heterosexual participants. They were also three times more likely to have had depressive symptoms, and twice as likely to have self-harmed. Prevalence of weekly alcohol use among participants attracted to the

same sex or both sexes was 33% (18% for heterosexual), and binge drinking was reported by 48% (36% for heterosexual) (108). A qualitative New Zealand study of young people attracted to more than one sex found that binge consumption of alcohol was associated with minority stress, stigma and discrimination, and the venues for coming out (109).

Higher suicidality among same-sex-attracted young people who drank alcohol was also found by Pinhey and Millman (110) in Guam. Likewise, for New Caledonia, same-sex-attraction and frequent kava drinking was associated with suicidal ideation and attempts (98).

Not all young men who have sex with men are attracted to only men. In the Lao People's Democratic Republic, the 2004 Vientiane men's sexual behaviour study found that 18.5% of the men reported a same-sex experience, 8.0% reported having sex with both men and women in the preceding six months, and the role of alcohol in same-sex activities was highlighted (111).

Occupations and workplaces

Unfortunately, data are insufficient to gain a better understanding of occupation and workplace risks for alcohol use among young people in the Western Pacific Region. However, the Cambodian and other most-at-risk young people surveys, as well as men's surveys in the Lao People's Democratic Republic, have noted the links between alcohol use and those in hospitality, service and sex work (73, 111–113). In addition, hospitality, mining, fishing and construction workers have demonstrated higher levels of alcohol consumption than other occupations in Australian studies (114).

Street youth and most at-risk young people

It has been estimated that 1–5% of the population of adolescents and young people in each country and area in the Western Pacific Region is defined as most-at-risk youth (112). Overall, the situation for most-at-risk young persons is clear: they live in very risky environments; engage in many concurrent risky behaviours, by choice or necessity; and bear significant morbidity in relation to alcohol and other substance use. A 2008 survey of street and non-street children aged 13–17 years in the Philippines (115) found that 74% of street and 45% of non-street children drank alcohol. The top three reasons for use were “help calm down”, “help forget problems” and “deal with feelings of worry”.

The Cambodian Ministry of Education, Youth and Sports (73) survey of most at-risk young people found high levels of alcohol use and associations with risky behaviour and occupations. The following extracts give some voice to the young participants:

- “My friend proposed me a drink and I refused, so they threatened to beat me ... so I had to drink a glass.” (male, age 15–19 years)
- “If I refuse to drink, it means I could not be trusted in the group.” (female, age 10–14 years)
- “I drink when I was disappointed with my exam.” (female, age 15–19 years)
- “My [boy]friend left me for another girl [so I started drinking].” (female, age 15–19 years)
- “In general, we have to drink with customers; if we do not drink, we cannot have this job [Karaoke worker].” (female, age 20–24 years)

Table 6: Risk drivers of using alcohol and/or drugs among most at-risk young persons in Cambodia

	SELF	PEER	FAMILY, COMMUNITY SOCIETAL NORMS
Immediate drivers	<ul style="list-style-type: none"> • Misconceptions that using alcohol or drugs can reduce stress • Underestimating the effect of addiction 	<ul style="list-style-type: none"> • Having friends who drink alcohol or use drugs • Having a network that can access drugs 	<ul style="list-style-type: none"> • Failing exams • Arguments with friends or family • Arguments with boyfriends/girlfriends • Easy access to alcohol • Socializing or celebrating • Family break-up • Feeling depressed
Long-term drivers	<ul style="list-style-type: none"> • Having an urge to try new things • Onerous working conditions • Lack of knowledge about the harmful effects of drugs or alcohol 	<ul style="list-style-type: none"> • Social acceptance and inclusion • Demonstrating loyalty and trust with peers • Socializing 	<ul style="list-style-type: none"> • Failure at school • Looking trendy • Exposure to alcohol or drugs in the community environment • Unstable family environment • Parents’ lack of skills to deal with their children’s high-risk behaviour • Drinking habits in a family • Following role models or celebrities

Source: Adapted by permission of the publisher from Ministry of Education, Youth and Sports, Cambodia (73).

3.5 Moving forward

Alcohol use among young people in the Western Pacific Region appears to be as diverse as young people themselves; in some countries and areas where data are available, rates have plateaued, but in others, it has risen or fallen. Unfortunately, the available data do not allow for a clear picture of rates, patterns and trends. It is clear, however, that governments are concerned about alcohol use among their youth, but they may not have adequate data to determine best policies or preventive and treatment interventions.

Thus, there is an urgent need for more and better data. Countries and areas must ensure that available data can be disaggregated for age and sex. Further, as not all young people are in school, it is essential that specific subpopulations of concern, such as most-at-risk young persons and young workers, are surveyed, as they bear a greater burden of alcohol use-related morbidity. It is also necessary to obtain data for young people away from home. This can be a costly task, but routine surveillance of adolescent and youth risk behaviours is essential if effective preventive and treatment interventions are to be developed to address substance use-related issues (e.g. accidents, unplanned pregnancies, violence, crime and lack of participation in education and employment) and the spread of blood-borne infections and sexually transmitted infections. These outcomes are more costly to individuals, families, communities and nations in many ways, including loss of productivity.

Standardized surveys (e.g. GSHS and YRBS) have been used in some countries, but often they have not been repeated to gain information on any emergent trends. The timing of repeat surveys needs consideration. Choosing questions that are relevant for measuring not only consumption and patterns, but also risks, consequences and effectiveness of interventions is important. Timing may be influenced by a need to ascertain the impact of a recently introduced, specific intervention.

While there is some concern about the reliability of self-report surveys, it appears that they can provide adequate information on levels and patterns of alcohol and other drug use as well as discern trends and emerging issues. However, other survey methods warrant consideration. While face-to-face surveying has some benefits, telephone and online surveys also provide benefits.

It is also necessary to consider how and where surveys are undertaken. Schools offer a variety of advantages, but the length of surveys can be limited by attention span. Confidentiality issues need to be addressed, such as the presence of known teachers, how completed surveys are returned, passive parental consent, and if questions can be skipped (as those with more alcohol use could be identified by peers according to how long they take to complete their surveys). For out-of-school young people, in addition to issues of access, finding suitable locations to take the survey needs to be addressed. Obtaining representative samples can offer challenges, especially in countries and areas made up of many islands, or large and varied land mass.

Routine youth surveys of sentinel youth populations would be beneficial in addition to regular school student studies. Rapid assessment and response methods, mixed methodologies, respondent-driven sampling, peer interviewers, peer educators, outreach workers and/or those skilled in locating and engaging with marginal and hidden populations can be explored for their usefulness regarding key subpopulations and identifying their patterns of use and emerging concerns (116).

Ideally, questions used in surveys should be comprehensive enough to cover key issues such as: ever use of alcohol; age of initiation to actual drinking; use in last 30 days; amount of alcohol consumed; binge patterns; reasons for use; what type of alcohol consumed, including home-brewed or informally produced alcohol; how acquired; where used; consequences of use; cultural and religious influences; and health beliefs, attitudes and intentions. A core set of questions, to which other questions of interest can be added, has been utilized in some countries and areas to keep the surveys as brief as possible, and allow for core questions to be asked of the whole sample, and additional groups of questions asked of representative subsamples.

Another key issue for consideration is surveying younger ages, such as from age 10 years. As the age at which youth initiate drinking has been declining, obtaining data on children may be beneficial in building up a more comprehensive pattern of the drinking journey. This raises obvious ethical considerations, but these have been addressed in such countries and areas as Hong Kong SAR, which conducts serial surveys on children ages 14 years and below.

Also requiring consideration may be the ability to identify and link surveys of the same individual over time, while ensuring anonymity to explore particular concerns and trends.

The issues raised above underscore the need to build the capacity of those developing and administering surveys, aided by technical support provided by WHO, experienced researchers and experts in the Region who can share their experiences for local adaptation.

4. CONSUMPTION AND ALCOHOL-RELATED HARM AMONG YOUNG PEOPLE: CONTRIBUTING FACTORS AND PREVENTION MEASURES

Summary points:

- Key factors contributing to heavy consumption of alcohol and related harm among young people include the availability of alcohol, the price of alcohol and alcohol marketing.
- The easier it is for young people to purchase or obtain alcohol, the more consumption and harm will occur among young people.
- The cheaper alcohol is for young people to buy, the more drinking and harm will occur.
- The more alcohol marketing to which young people are exposed, the more alcohol they will consume.
- Many countries and areas in the Western Pacific Region urgently require interventions to reduce drinking and alcohol-related harm among young people.
- Policies that restrict youth access to alcohol are very effective in reducing heavier consumption and alcohol-related harm.
- Taxation policy, which makes alcohol less affordable, is very effective in reducing heavier consumption and alcohol-related harm.
- Policies that legally restrict alcohol marketing are needed to prevent alcohol companies from recruiting young people to be drinkers (and from encouraging them to be heavier drinkers).
- At-risk youth require additional effective interventions such as community action, brief interventions and treatment.
- Drink-driving countermeasures including “zero tolerance” and random breath testing are effective in reducing alcohol-involved crashes among young people.

4.1 How does the availability of alcohol affects young people?

The availability of alcohol affects adolescents' ability to access and consume alcohol. Overall availability comprises (1) physical; (2) economic; and (3) social availability.

The physical availability of alcohol is the availability of alcohol in one's physical environment mediated by the likelihood that one will come into contact with these sources of alcohol (117). The physical availability is affected by regulations such as the minimum legal drinking or purchase age, days of sale and trading hours, and locations and numbers of alcohol outlets (117–119). Also relevant to physical availability in the Region are informal and illegal sources of alcohol.

The economic availability relates to the real price of alcohol, that is, the price of alcohol after accounting for inflation. Thus, people's income is also relevant, and when this is taken into account, the measure is often referred to as affordability. Taxation and a minimum unit price (MUP), the cost at which the sale price must not drop below per unit, are policy measures that can affect affordability.

The social availability of alcohol, sometimes referred to as the social supply of alcohol, refers to the supply of alcohol to minors by social sources, such as friends or parents (120). In some jurisdictions, legislation is in place to prohibit the supply to minors. Alcohol may also be available socially as part of rituals, ceremonies and events throughout the Region.

Physical availability

Minimum legal age. Young people are often the subject of specialized laws affecting their access to alcohol; the minimum legal drinking age and purchase age are good examples. A minimum legal drinking age specifies at which age it is legal to consume alcohol, while a minimum legal purchase age specifies at which age it is legal to purchase alcohol. Most countries and areas set the minimum legal age limit of somewhere between 18 and 21 years. Several countries and areas in the Region have no minimum age limit, including the Lao People's Democratic Republic, China, and Cambodia (121).

Studies show that increasing the legal drinking age reduces consumption among those under the drinking age (122). Increasing the minimum legal age can also reduce total population consumption (123). Increasing the

legal drinking age also reduces alcohol-related road accidents in the affected age group (124).

Enforcing the legal drinking age limit can improve the success of the legislation (125-128). In the United States, communities with higher enforcement of laws against minors' possession of alcohol had lower rates of alcohol use and binge drinking (126). Adolescent alcohol use and heavy drinking appeared to be reduced by enforcement of underage drinking laws (among other factors) (125). In New Zealand, greater enforcement of the legal purchase age by licensing officers significantly reduced sales of alcohol made without age identification (129). In contrast, in Viet Nam, for example, it is very easy for young people to buy alcohol, even though there is a minimum age of 18 years for wine and stronger alcoholic drinks—but not for beer. This is due to ineffective measures and mechanisms for inspection, supervision and penalty (9). While minors are legally excluded from consuming alcohol in some countries, such as Fiji, the sale of alcohol beverages to underage drinkers is common (130).

There is also evidence, as in Australia and New Zealand, that when legal purchase age restrictions are lowered, road accidents, accident-related hospital admissions, rates of juvenile crime and intoxication cases at emergency departments increased for the age groups affected (131-135). A 21% increase in alcohol-involved crashes was found among drivers aged 18-19 years up to 10 years following the lowering of the purchase age in New Zealand (the purchase age was lowered from 20 to 18 years in 1999) (136). This may suggest that a purchase age of 20 years is more effective in preventing harm than setting the law at 18 years.

Alcohol outlet density. The number and density of alcohol outlets is a key aspect of a neighbourhood's alcohol environment, and alcohol outlets play an important role in regulating the risks to which young people are exposed (137). Higher outlet density is related to heavier drinking among young people internationally (138-141), and in some Western Pacific countries and areas, such as Australia, New Zealand and the Republic of Korea (120,132-144).

Higher outlet density is related to alcohol-related harm, including drink-driving among young people (139,141), the probability of becoming a youth homicide offender (145) and the likelihood of engaging in other violent behaviours (146). Densities of bars have been associated with assaults among young people (137) as well.

Alcohol outlet trading hours. Premises that close late are generally associated with increased intoxication levels among patrons and increased levels of alcohol-related harm. Restricting trading hours at off-premises has been found to reduce hospital admissions for intoxication among young drinkers (147). Restricting trading hours of on-premises reduced assaults in Newcastle, Australia among young people (148). Alternatively, extended trading hours has been found to increase alcohol-impaired driver road accidents, alcohol consumption and blood alcohol concentration levels among young male drivers (149, 150).

Economic availability

Price of alcohol. The price of alcohol is a key factor influencing levels of consumption and subsequent levels of alcohol-related harm. Young people, in particular, are a population group who are price-sensitive. This means that population-based policies to influence price are also effective at targeting groups at risk such as young people (121). The evidence suggests that as the price of alcohol increases, consumption and related consequences will decrease, both overall and in certain high-risk groups, including young people (151). There are a number of studies that demonstrate this correlation in low- and middle-income countries as well as high-income (152).

Studies have found that when the price of alcohol is increased, drinking and heavy or binge drinking among young people will fall (153,154). Studies have also found that when the price of alcohol is reduced, increases in consumption (e.g. Switzerland [155]) and in harm (e.g., Denmark [156]) have occurred among young people. Several studies, however, have also found no relationship between price and outcomes for young people (157,158).

Modelling of United Kingdom data suggested young hazardous drinkers would be positively affected by a MUP option. A MUP that increased the price in both the on-premise and off-premise trade (more so than a minimum price introduced in the off-premise trade only) was more effective, reflecting their use of on-premise drinking environments (159).

In Malaysia, alcohol excise duties were increased by 26% on beer and 20% on other alcoholic beverages in 2004. Industry documents showed a decrease in beer consumption of 5% in 2005 and 8% in 2006 among the total population (121).

Affordability of alcohol. The price of alcohol in relation to income, that is, the affordability of alcohol, is another key influence on alcohol-related behaviours. While studies conducted among youth are rare, studies among adults have shown that as affordability increases, so too does consumption (5). Further, very few countries link their tax rates to inflation, which usually makes alcohol more affordable over time. Falling costs of importation and production and marketing strategies, such as selling alcohol at a loss to attract customers, can all increase the affordability of alcohol.

A MUP can decrease the affordability of the cheapest alcohol. There are no studies on the effects of MUP among young people, aside from Meier et al. (160) but a MUP implemented in Canada resulted in a significant decline in population-level consumption (160).

Social availability

Cultural contexts and ceremonies are relevant to how young people access alcohol socially in the Region. In Viet Nam, for example, *nhau* (i.e. informal social drinking) is common, with alcohol used to celebrate special events, aid socialization, “drown one’s sorrows” or facilitate business. In some communities, especially remote areas, alcohol consumption is a local custom (9). In Fiji, in many instances, social ceremonies and rituals, such as kava drinking, now include alcohol consumption. Young people in Fiji often end their kava drinking session with a “wash down”, which features alcohol (161). Finally, in China, alcohol has both social and cultural roles and is commonly consumed at sociocultural functions and at celebrations. Young people, in Hong Kong SAR, view this as the cultural endorsement of alcohol (9).

The social availability of alcohol can also refer to alcohol supplied to young people by parents, caregivers or friends. In China, adolescents reported that they were introduced to alcohol at home via a taste from their parents’ beverages during dinner or family gatherings (9). In the Lao People’s Democratic Republic, young people learn about drinking (and to be drinkers) from family, nearby households or the surrounding community including friends (9). In Australia and New Zealand, parties and social gatherings among young people are common situations in which alcohol is likely to be socially available to minors. In Australia, underage risky drinkers obtain alcohol mainly from friends (48%) and parents (19%) (162). In New Zealand, around 71% of drinkers aged 14–17 years (i.e. under the legal minimum purchase age) had obtained alcohol

from a social source at least once in 2004 (163). Young people aged 12–17 years who obtained alcohol through social sources consumed significantly higher occasion quantities of alcohol (120).

Informal alcohol. As well as commercial beverages, which are legally produced and taxed, drinkers, including young drinkers, can often access informal and/or illegal alcoholic beverages, including alcohol produced in noncommercial settings, as well as smuggled and counterfeit alcohol.

In the Western Pacific Region, estimates of adult per capita consumption of unrecorded alcohol beverages range from very low in Australia (0.13 litres) to around 3 litres in the Republic of Korea (164). Estimates of consumption of informal beverages among young people only are not available.

“Bush beers”, “toddies” and other home-produced alcohol beverages are produced in many countries and areas of the Region. These are typically sold at lower cost than commercially produced beverages (165). Consumption of home-brewed alcohol is especially widespread in Fiji and other PICTs. These beverages usually contain up to three times the alcohol content of commercially produced beer and are mostly consumed by young men (9). Homemade wine is produced in Viet Nam, and is available in almost all rural villages. Currently, homemade wine is unregulated by the government, and no procedures are in place to assure the quality of the alcohol sold (9). Similarly, in the Lao People’s Democratic Republic, especially in rural areas, villagers produce alcohol for drinking during main traditional events such as the racing boat festival after the harvest and rocket festival (9).

Lastly, informal alcohol may have cultural or health significance, such as in China, where certain herbal alcoholic drinks are viewed as traditional health or medicinal products (9). Informal alcohol may also be an important source of income for many low-income persons in the Region, particularly in rural areas.

Alcohol marketing. The Western Pacific Region includes various traditions in regard to youth alcohol use and a mix of mature and emerging alcohol markets. There are patterns of heavy youth drinking in Australia and New Zealand, where alcohol advertising and other forms of marketing have increased over the past three decades. There are also concerns about young people and heavy drinking in PICTs and Asian countries where alcohol availability and marketing are increasing (165).

Alcohol marketing is used to recruit new drinkers from youth cohorts and to expand the drinking population, particularly in emerging markets. Alcohol marketing is likely to be an increasing problem, in particular, for those countries and areas that are developing economically. For example, in China, a young person who watches two hours of evening television on average would see over 900 alcohol advertisements per year (166).

Alcohol marketing includes more than traditional media outlets such as print, television and radio. Marketing includes the development of new products (e.g. sweetened beverages), place-of-sale and price promotions (167). It also includes new media opportunities, including the Internet (i.e. websites of producers and their products) and alcohol advertising via text messaging, sponsorship and cultural events, merchandising and on social networking sites (e.g. Facebook, Bebo and MySpace).

In Viet Nam, there are regulations restricting the promotion of wine to the general population, including at cultural events. Wine and spirit advertising is banned on television. However, there are no restrictions on beer advertisements and promotions (9). In Fiji, there is no specific legislation regulating the promotion of alcoholic beverages to young people (9). In Hong Kong SAR, there are some codes of practice for alcohol promotion on television and radio. In Japan, there is none. However, self-imposed regulation by Japan's alcohol industry prohibits alcohol advertisements on television during 05:00–18:00. Some alcohol promotions are comical, cute and fashionable, appearing to target to young people (9) and children. In New Zealand and Australia, systems of alcohol industry self-regulation are in place, where advertisers must comply with a number of advertising codes.

Alcohol producers have begun to focus on social marketing on websites that connect young people globally. On Facebook, for example, alcohol producers have product pages available for young people to “Like”, and, in return, receive product information. Young people may upload links to alcohol advertisements (situated on YouTube or other websites) to their Facebook wall for friends and others to watch and to subsequently share. While there may be age limits restricting those who are under 18 from accessing alcohol product pages, young people can circumvent this obstacle easily by entering their ages to be 18 or older when creating their profile. In addition, young people, in New Zealand, have been found to routinely tell and re-tell drinking stories online, share images depicting drinking and be exposed to often intensive and novel forms of alcohol marketing (168).

In several countries throughout the Region, including Australia, New Zealand and the Republic of Korea, exposure to alcohol advertisements among adolescents (i.e. ages 12–17 years) was found to be strongly associated with drinking patterns (169). In New Zealand, liking of alcohol advertising and brand allegiance at age 18 years was found to predict volume of beer consumed at age 21 years (170).

Thus, alcohol marketing is a factor contributing to negative outcomes for young people (168), and numerous studies internationally report associations between exposure to alcohol advertising and increased consumption among young people (171). There is also evidence of a dose-response effect of alcohol marketing on young people's drinking (5).

Product development. The development of beverages designed for beginning drinkers and others, which are branded specifically for younger consumers, is an important part of alcohol marketing. Alcopops (or ready-to-drink drinks) are sweet-tasting, pre-mixed alcohol-based drinks of around 5–7% alcohol content. Young people report they primarily drink alcopops because of the taste, followed by alcohol strength and cost (172).

Most studies have found that alcopop consumers tend to have heavier drinking patterns (i.e. drink more of every beverage type) rather than there being a specific association between alcopops and heavier drinking (173–175). One study from New Zealand, however, found that alcopops were independently related to heavier drinking among females aged 14–17 years (while controlling for overall volume of consumption) (176).

Sponsorship. Sponsorship includes alcohol advertising during sporting broadcasts, as well as the sponsorship of sporting events or sportspersons by the alcohol industry (177). It can also include music or cultural events. There is limited research on the effects of alcohol sponsorship specifically; however, sponsorship is a key aspect of alcohol marketing. In Australia, for example, sponsorship of sportspersons (the mean age of the sample was 21 years) by the alcohol industry was predictive of higher Alcohol Use Disorders Identification Test (AUDIT) scores (178, 179).

Inducements to drink. Marketing approaches, such as competitions and beer promoters, are common in the Region. In Cambodia, for example, beer promoters, called locally "beer girls" (a derogatory term) or "promotion girls" (by their companies), wear "uniforms" of the beer brands that they

exclusively sell in restaurants and bars (180). Similar techniques have been introduced into the rapidly expanding China market (182–184).¹¹

Caregivers and parents. As stated previously, caregivers and parents can influence their child's drinking behaviour by their own use, by their parenting practices or their attitudes towards alcohol use. One of the key risk factors for adolescent alcohol-use problems is the presence of alcohol-use problems among parents (32).

However, caregivers and parents who monitor young peoples' alcohol use and who implement house rules around alcohol use are less likely to have children who drink (184). Likewise, protective parental attitudes have been found to generally deter alcohol use among youth (184) as has family connectedness (185). Greater parental disapproval of alcohol use is also associated with less involvement with friends and peers who use alcohol, less peer influence to use alcohol and lower subsequent alcohol use and related problems (186, 187).

Much of the literature reported above has come from developed countries. It is likely that relationships between caregivers and their child's drinking practices differ throughout the Region due to different cultural and economic contexts (and differences in parenting practices and familial roles).

Peer influences on alcohol consumption among young people. Relationships with peers become more important during adolescence, and affiliation with drinking peers has been shown to consistently correlate with adolescent alcohol use (188–190). In other words, friends have been shown to be similar to one another in drinking behaviour (190).

In developed countries, some studies have reported that adolescents (usually attending school) tended to overestimate how many of their peers drink, and how much and how often they drink, which contributed to their own increased alcohol consumption (191, 192). However, a majority of young people in the Region are not enrolled in (or completing) secondary education, but instead work. Therefore, exposure to work-based peer environments is common. Some work places are high risk for young people, as previously mentioned, as alcohol use can be normative in such environments, and perhaps even enforced (or part of the work in the case of beer promoters).

¹¹ See <http://www.beergirls.com>

4.2 What are the potential prevention measures?

Physical availability of alcohol

Minimum legal age limit. Legislation that sets a minimum legal age is among the most effective means of protecting young people from detrimental drinking and related harm. Thus, a minimum legal purchase age is recommended for countries and areas in the Region. A minimum legal purchase age should range from 18 to 21 years of age, with an age limit of 20 or 21 years providing the most protection.

Setting the minimum age at which alcohol can be sold allows for punishment of premises that break the law. Punishments can include loss of liquor licenses or fines. It is also important to make it an offence for a young person to use counterfeit age identification, but the main focus is to prohibit adults from selling alcohol to underage drinkers (121).

Enforcement. A minimum legal purchase age is effective already by itself with minimal enforcement; however, enforcement substantially increases effectiveness. Yet enforcement is commonly lacking in the Region, even where legislation exists.

Pseudo-patron purchase operations may be conducted by researchers, health promoters, law enforcement agencies, and nongovernmental organizations. These operations include sending young-looking people into the premises to purchase alcohol without age identification. Publicizing the results of the survey can be a tool to encourage change in retailers' behaviour and increased enforcement by police or others with a regulatory function such as licensing staff.

Enforcement strategies also include controlled purchase operations. Young people, who are underage, are sent into premises by law enforcement to purchase alcohol; if successful, the premises may then receive a fine or a licence impingement, or lose their licence. In some countries (e.g. Australia and New Zealand) such operations are a routine part of enforcement activity.

Outlet density. Provisions for controlling the numbers and locations of alcohol outlets should be made in legislation. A national framework has been found useful to prevent extreme differences between localities and the impact of local politics on licensing decisions. However, a system incorporating some recognition of local difference has also been advocated.

To regulate outlet density, it is recommended that an alcohol-specific licensing system be established with proportionate fees at levels that cover the costs involved with monitoring and enforcement. Each outlet that wishes to sell alcohol must obtain a liquor licence. The type of premise that may apply for a licence should be specified (e.g. not a small food or petrol store), and hours of trading should be specified.

The licensing system should allow grounds for control of density of outlets. One way in which this can be achieved is through the refusal of new licenses. Considerations for refusal may include the harm or ill health caused to people from use of alcohol, impacts on the neighbourhood and community sentiment. For already-existing licences, a “sinking lid” policy can be used to reduce the number of licences (e.g. there will be no more licences issued in area X until there are Y or fewer licences in that area). Regular renewal cycles should be in place for all licences, so that problem premises can be dealt with.

The location of outlets should also be regulated; this can be done by allowing the refusal of a new licence based on location. Banning outlets from operating near sensitive sites (e.g. schools or alcohol treatment facilities) may be another way to regulate the location of outlets; however, this can be more difficult in highly built-up areas. Restrictions on the numbers and density of alcohol outlets may have the most impact in areas with high availability and high numbers of outlets (5).

Trading hours. Provisions for controlling trading hours should be made in national legislation (or through local government if national legislation is not possible, or in licence conditions if a licensing system is already in place). In Samoa, for example, hours of trading are not addressed in the legislation but are set by the Liquor Board (121). All bars and restaurants close at 22:00 from Monday to Thursday, and close at midnight on weekends (although Sunday trading is not permitted) (121).

Restricting outlet trading hours is considered an effective strategy to reduce harmful drinking and harm when changes in trading hours meaningfully reduce the availability of alcohol or where problems, including late-night violence, are specifically related to hours of sale (3). Meaningful restrictions to trading hours may mean, for example, restricting trading hours to a time prior to peak levels of harm or violence in that context.

Alcohol-free environments or settings. Alcohol-free environments or settings can include alcohol-free events or parties for young people. While these strategies may reduce the availability of alcohol to young people in these specific settings, there is little known about their actual, broad impact (5).

Liquor bans. Liquor bans prohibit drinking in public places such as parks, beaches, recreational locations or in city areas or streets. There are few rigorous evaluations determining if liquor bans reduce arrests or alcohol-related harm among young people. It is possible that a liquor ban may displace the drinkers (and the problems) to a nearby area, not reduce them.

New Zealand has many local governments that implement liquor bans. Anecdotal evidence suggests that liquor bans are useful because they allow problem individuals to be removed from an area by police before they become involved in, or cause, trouble. The problem of displacement is less likely to occur when liquor bans cover large areas of city centres (or whole city centres). However, more rigorous evaluation is needed.

A variation on a liquor ban is in place in Tonga via the Order in Public Places (Amendment) Act of 2010. The act empowers police to prohibit and control the availability of alcohol in general and in specific locations and times for reasons of public order and public safety (9).

Economic availability

Taxes. Alcohol-specific taxes, which increase the real price of alcohol, are generally an effective strategy to reduce destructive consumption and related harm among young people. To maximize effectiveness, effort should also be placed to increase the proportion of alcohol that is taxed. The availability of untaxed (i.e. illegal or informal) alcohol in the marketplace should not preclude using a taxation policy to reduce harm among young people, as there is evidence the price of untaxed alcohol follows that of taxed alcohol (e.g. Thailand).

It is recommended that alcohol tax rates reflect the pure alcohol content of the beverage, rather than simply the value of the alcohol product. Higher tax rates for spirits may be justified under an alcohol tax policy that aims to maintain or increase alcohol prices paid by drinkers. Further, the scale of tax rates based on pure alcohol content should be sufficiently graded to avoid anomalies that may make pure alcohol cheaper in one beverage type rather than another. Experience indicates that the alcohol

industry will tailor its products and its marketing to take advantage of tax and price differences.

Mechanisms are also necessary to ensure that tax rates are adjusted regularly for inflation, falling costs of import and production, marketing strategies such as selling alcohol at a loss to attract customers, and income to affect affordability.

Dedicated fund or tax. A dedicated levy on all imports and manufacturers of alcohol can be set annually by regulations and the levy used for the purpose of reducing harm related to the use of alcohol. Alternatively, a fund can be established as part of the taxation regime (and comprise x% of the proceeds of excise tax) (121). It is important that such funds be used for evidence-based strategies to reduce the harm from alcohol.

Minimum pricing. Introducing a MUP at which alcohol may be sold may be necessary particularly if the structure of the market means alcohol is made available below cost to encourage shoppers to purchase additional goods. Establishing a MUP may be an effective strategy to reduce heavy consumption among young people (159). In Canada, a MUP has been shown to be effective in reducing alcohol consumption at the total population level (160).

Alcopop taxes. While alcopop taxes reduce the consumption of alcopops, this reduction has tended to be offset by substitutions with other beverages (173, 193). The current evidence suggests that focus should be placed instead on the implementation of an effective overall taxation scheme that affects all alcoholic beverages.

Social availability

The social availability of alcohol to young people should be regulated via legislation. Laws on social supply have tended to be ineffective without police enforcement, so enforcement is needed. An example of a good social supply law is from New South Wales, Australia: it is illegal to supply alcohol to a minor unless by a parent or guardian to have with a meal. Large fines can be introduced as punishment for those supplying alcohol illegally but are only likely to be effective if people perceive that they will be caught.

Informal alcohol. High availability of informal alcohol products, such as home-brewed alcohol, may affect the effectiveness of alcohol taxation and

physical availability as public health interventions to reduce consumption and alcohol-related harm. It seems there may be declining interest in informal alcohol when consumers can afford branded commercial alcohol (e.g. in Thailand). Illicit supply of commercial alcohol is likely a necessary focus of police enforcement in some jurisdictions (e.g. in Viet Nam).

One effective strategy to counteract the impact of the informal and/or illegal alcohol markets includes bringing the informal market under control of the government so that these beverages may be taxed to increase their price. This is likely to be a gradual process in which enforcement of illegal production and supply is essential and reliant on minimizing corruption. Informal traditional alcohol can also gradually be included within a taxation system through the use of taxation stamps, as is occurring currently in Viet Nam (194). In Mongolia, a programme of quality inspection and accreditation has been introduced to bring home producers under regulation; this strategy may either reduce the number of producers or encourage them to move up to commercial scale.

In Japan, one outcome of taxing village production of traditional beverages was that global companies began producing these drinks (5, 121). In Thailand, producers and importers are registered, licensed and taxed so that any unregistered products, lacking excise duty stamps, can be identified as illegally produced or smuggled (although much of the illegal traditional alcohol appears not to be popular or seen as fashionable among young people) (121).

Alcohol marketing. Comprehensive restriction of exposure to alcohol marketing is the most effective means to protect young people from the effects of alcohol marketing, as young people are still exposed to high levels of alcohol marketing when partial bans are implemented (5, 195, 196).

A good example of alcohol marketing legislation comes from France. The *loi Évin* specifies the media in which marketing is allowed, and, for many years, this was restricted to print media with low youth audiences. The French law permits neither advertising on television and in cinemas, nor sponsorship of cultural or sport events. When advertising is permitted, its content is controlled, that is, messages may refer only to the qualities of the products (5).

Another, perhaps better, example of alcohol marketing legislation is from Sri Lanka. There, legal regulation has effectively banned public alcohol

advertising since 2006 (National Authority on Tobacco and Alcohol Act 2006). Alcohol advertisements are not permitted on television, print media, radio or at public events. An alcohol advertisement is defined as any distinctive writing or moving picture, sign, symbol, colours, visual image, audible message or any combination of the aforesaid that promotes or is intended to promote drinking or liquor, the purchase of an alcoholic product, the trademark of alcohol products, the brand name or name of the manufacturer.

Addressing alcohol marketing in social media and on the Internet would be helped by an international agreement. A partial attempt to restrict Internet marketing is currently under way in Finland (197).

Drink-driving countermeasures. The most effective strategies for reducing drunk driving and the harm associated with drink-driving among young people are (1) a zero-tolerance approach in which the legal breath alcohol content for young, inexperienced drivers is zero; and (2) random breath-testing, where police are legally permitted to undertake breath-testing on any motorist at any time by setting up random checkpoints. Effectiveness depends on the number of drivers directly affected and the extent of consistent and high-profile enforcement (5).

Modifying the drinking environment. Interventions directed at modifying the drinking context usually include a complex combination of content (5), so this may be more difficult to implement. They usually involve training bar staff members and/or police enforcement of laws in on-premises including serving intoxicated patrons. However, staff and management training to manage aggression on premises have been shown in limited research to be effective in the short term (5). Enhanced enforcement of on-premises laws and legal requirements are effective, but sustained effects depends on making enhanced enforcement part of ongoing police practice (5).

Education

The general consensus, based on the research evidence, is that strategies and interventions based on education, without affecting factors such as marketing, availability and affordability, have little to no effectiveness in achieving long-term behavioural change although they may be effective at increasing knowledge of alcohol and its risks.

Classroom education. Classroom education may increase student knowledge and attitudes but has generally been found to have no long-term effect on drinking behaviours (5). However, more recently, there is some evidence to suggest that classroom programmes focusing on harm reduction through skills-based activities can produce medium- to long-term reductions in alcohol use and in particular, risky drinking behaviours (198).

Other education-based programmes. Other stand-alone education-based programmes, listed below, have been shown to have little to no effectiveness in reducing consumption or harm (5).

- College student normative education and multicomponent programmes
- Stand-alone mass media campaigns including drink-driving campaigns (with no enforcement)
- Warning labels and signs, including on bottles
- Social marketing

More recently, social media and websites have been used as sites for health promotion and intervention. The available evidence suggests that users can benefit from online alcohol interventions and that this approach could be particularly useful for groups less likely to access traditional alcohol-related services, such as women, young people and at-risk users. However, caution should be exercised given the limited number of studies (199). Further outcome research is needed to understand if, and under what conditions, computer-tailoring leads to positive health outcomes in online behavioural interventions.

Community action

A community action approach utilizing and actively promoting collaborative sustained partnerships can lead to improved health outcomes if changes in alcohol environments are achieved (200–204). Such an approach may also work to stimulate greater regional consistency and coordination in planning strategic health promotion activities (205). Further, the evidence suggests that community action approaches can be effective, but the effects are not sustained unless implemented over the long term (5).

Community action usually comprises several levels of intervention operating simultaneously to reduce drinking and related problems,

including community mobilization, enhanced community awareness and increased enforcement of laws governing alcohol (or increased monitoring in areas where problems are occurring).

In the Region, a community intervention approach may be appropriate in many areas. As mentioned above, many young people in the Region are not in school, or only attend part of secondary education; thus, preventive efforts focusing on young people at work or on the streets could be effective. In addition, training centres, universities and marine colleges across the PICTs, Malaysia, Hong Kong SAR and the Philippines may be appropriate sites for community action and prevention activities for potentially high-risk groups.

At-risk young people

Brief interventions. The management of high-risk young drinkers can occur in primary health care and other settings using brief interventions. Brief interventions are low intensity and short in duration, consisting of one to three sessions of counselling and education (5). Brief interventions can be administered by primary care practitioners or other trained professionals, and rigorous evaluations have shown that brief interventions can be an effective strategy to reduce consumption and harm among young people (5).

First, a young person is screened to identify his or her risk level. Assessments should be undertaken by staff members competent in talking to young people (e.g. a youth worker, teacher, paediatrician or adolescent health-trained medical practitioner or nurse) and their parents or caretakers (depending on the age of the young person) (206). A number of alcohol screening tools have been recommended for use among young people, including the AUDIT (206), Single Alcohol Screening Questionnaire (206) and Short Mental Health Screening Questionnaire Interview for Adolescents that includes questions on substance misuse (206). Once a young person is identified as high risk, he or she can be referred to a brief intervention or more specialized treatment.

Brief interventions have also been administered electronically. A randomized controlled trial in which brief interventions were administered electronically (using a computer) to tertiary students in a primary health care setting in New Zealand found positive impacts among the intervention group relative to the control (lower consumption and problems levels) at the six-month follow-up (207).

Integrated care interventions. Most evidence for interventions to reduce alcohol-related harm in young people relate to school-based education and prevention programmes. As noted previously, these show benefits in increasing knowledge, but the evidence for their effectiveness in changing drinking behaviour is less clear. For young people outside of the educational system, there is a limited evidence base for successful interventions. Many of the studies are methodologically flawed, which limits the conclusions that may be drawn and their generalizability.

At present, counselling interventions, including family-based counselling, motivational interviewing, cognitive behavioural therapy and community reinforcement, have been shown to have merit, although the duration of these interventions can vary considerably between one session and 20 or more sessions. Further, while pharmacotherapy for more persistent alcohol problems is used in adults, there have been very few studies exploring this in young people. Multidisciplinary input is usually required for persistent problem alcohol use in young people. Some young people benefit from opportunities for detoxification or from longer-term rehabilitation in the form of day programmes or residential programmes. Many young people need treatment for underlying mental health disorders, such as depression and anxiety, and any co-morbid physical health disorders. Similarly, the need to address cognitive impairments resulting from alcohol through cognitive rehabilitation and coping skills in young people is increasingly gaining attention. Evaluations using rigorous methodological techniques are, however, still needed to draw clear conclusions about the best interventions for young people with alcohol problems (208).

Integrated care programmes are more effective than, for example, medical and social detoxification programmes alone (5).

Mutual help and/or self-help organizations. Mutual help and/or self-help organizations, such as Alcoholics Anonymous meetings, are a feasible, cost-effective complement to (or alternative to) formal treatment in many countries and areas for adults (5). However, there is very limited research on the effectiveness of Alcoholics Anonymous among young people. Findings from a review of the literature suggested that youth may benefit from these groups participation following treatment, but conclusions were limited by a lack of rigorous research evidence (209).

Implementing policy

Among the most effective prevention strategies, discussed above, are policies that require the introduction of legislation or regulation. The following section discusses the key issues for policy implementation.

First, the priorities for policy implementation need to be identified, as this will provide a guide on which policy(s) should be formulated and selected for attempted implementation. Where possible, the priorities should be decided based on the best evidence or data available.

Second, a decision should be made on whether the policy should be introduced nationally or locally. Often, the ideal level at which to advocate for alcohol policy implementation is at the national level. However, when this is not possible, policy may be implemented at the local government level if applicable.

Implementing a policy usually requires a multicomponent and multisectoral approach.

Advocacy. First, the policy must be placed on the political agenda. Advocacy such as media campaigns, meetings with politicians and protest marches can help get a policy on the political agenda. If trying to introduce policy to protect young people from alcohol and its associated harm, young people themselves should be involved. Young people have first-hand information, can be energetic and innovative and play a role no other actor can, which is attractive to the media. This process can also empower young people, involve them in decisions about their own lives, help strengthen youth–adult partnerships and train leaders for the future. Policy work involving young people, for example, has been successfully undertaken in Guam.

Key stakeholders. Increasing awareness and gaining support from key stakeholders is necessary so that the largest possible group is advocating for the policy change.

Political support. For alcohol policy to be implemented, it needs to have political support at the highest level, and politicians will likely need to be convinced that the community supports the policy (which maybe done via community consultation) (210).

Industry lobbying. To avoid increased regulation, the alcohol industry will often lobby politicians. In response to industry lobbying, public health officials should meet with politicians and advocate for the public health policy position as much if not more so. It is important to use very convincing public health arguments ideally supported by local or national evidence (including any cost-savings that the policy will achieve for the government and any money the government will make, particularly if it is a tax policy). Advocacy is a critical part of the policy-making process, and many policies are not introduced or are weakened at this stage because of industry lobbying.

International trade agreements may need to be considered when developing policy. In many trade agreements to date, a clause allows governments to protect the health of the people, and this has been used to justify policy when challenged, for example, the challenge to the *loi Évin* around the mid-2000s. It is essential, therefore, that the policy be clearly framed in this regard and without any protection of local production. However, the increasing breadth of trade agreements, for example, the Trans-Pacific Partnership, means more restrictions on government capacity to protect health (211).

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