



Harmful use

**of alcohol, alcohol
dependence and mental
health conditions:**

a review of the evidence for
their association and integrated
treatment approaches





Abstract

Harmful use of alcohol is a key risk factor for noncommunicable diseases and mental health conditions. An evidence review was carried out to better understand the links between harmful alcohol use or dependence and mental health conditions (anxiety, depression, self-harm and suicidal behaviour) and opportunities for more integrated care. The evidence suggests clear associations between harmful alcohol use or dependence and the mental health conditions studied, although the causality and nature of the associations remain unclear. Coexistence of harmful use of alcohol or dependence and mental health conditions affects the course, severity and outcomes of both disorders as well as treatment outcomes. A limited number of studies indicate beneficial effects of combined treatment approaches. Further studies are needed to find and test integrated treatment for individuals with comorbid mental health conditions and alcohol use disorders.

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> Contents

Acknowledgements	— 4
Summary	— 5
1. Introduction	— 6
2. Harmful use of alcohol as a risk factor for noncommunicable diseases	— 7
3. Links between harmful use of alcohol or dependence and mental health conditions	— 9
3.1 Depression	— 11
3.2 Anxiety disorders	— 12
3.3 Self-harm and suicidal behaviour	— 13
4. Treatment approaches for people with mental health conditions and comorbid harmful use of alcohol or dependence	— 14
4.1 Depression	— 14
4.2 Anxiety disorders	— 15
4.3 Self-harm and suicidal behaviour	— 16
5. Conclusions	— 17
6. References	— 18



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> Summary

Several key risk factors for noncommunicable diseases (NCDs) have been identified, including the harmful use of alcohol. Half the world's population drinks alcohol, and harmful alcohol use is the third leading cause of ill health and premature death globally. WHO's European Region is the region with the highest levels of alcohol consumption and alcohol-related harm. Harmful use of alcohol or dependence often co-occurs with mental health conditions, and this affects the course, severity and outcomes of both disorders as well as treatment outcomes. A clearer understanding of the links between these disorders could form the basis for a more integrated response in terms of prevention and treatment.

A review of the evidence on the associations between harmful alcohol use or dependence and anxiety, depression and self-harm or suicidal behaviour indicated:

- › strong evidence for a link between anxiety disorders and harmful alcohol use or dependence, with several potential causal pathways;
- › some evidence that harmful alcohol use or dependence is a risk factor for depression and vice versa; and
- › clear evidence that harmful use of alcohol or dependence is a risk factor for self-harm and suicidal behaviour, although the causality and nature of these associations could not be specified.

Co-occurring conditions must be treated simultaneously, as evidence suggests that either disorder can affect the course and treatment of the other, increasing the risk for relapse. Integrated treatment, which includes concurrent management, has not been common clinical practice, and its effectiveness is not yet sufficiently supported empirically. A limited number of studies of simultaneous monitoring of the course of these comorbid disorders have, however, indicated that combined treatment can effectively reduce symptoms. This is the case, for example, for integrated treatment of depression and alcohol use disorders. The evidence for the effectiveness of integrated treatment for anxiety and alcohol use disorders is inconsistent; while some studies found beneficial effects, others did not. Recent studies have shown beneficial effects of integrated interventions for individuals with concomitant suicidal behaviour and alcohol use disorders.

Overall, further studies are clearly needed to develop and test integrated treatment for individuals with comorbid mental health conditions and alcohol use disorder and to replicate the findings of existing trials.

Introduction

The third high-level meeting of the United Nations General Assembly on the prevention and control of noncommunicable diseases (NCDs) in September 2018 led to a political declaration of the desire and commitment of national governments to include mental health conditions in the NCD agenda (1). Although mental health conditions are defined as NCDs, they had not been formally included in the NCD global agenda previously. Moving from “4 by 4” to “5 by 5” (Fig. 1) has established greater parity between mental health conditions and other NCDs, enabling a more holistic, collaborative approach to the joint prevention and management of NCDs.

Fig. 1. Moving from “4 by 4” to “5 by 5” noncommunicable diseases



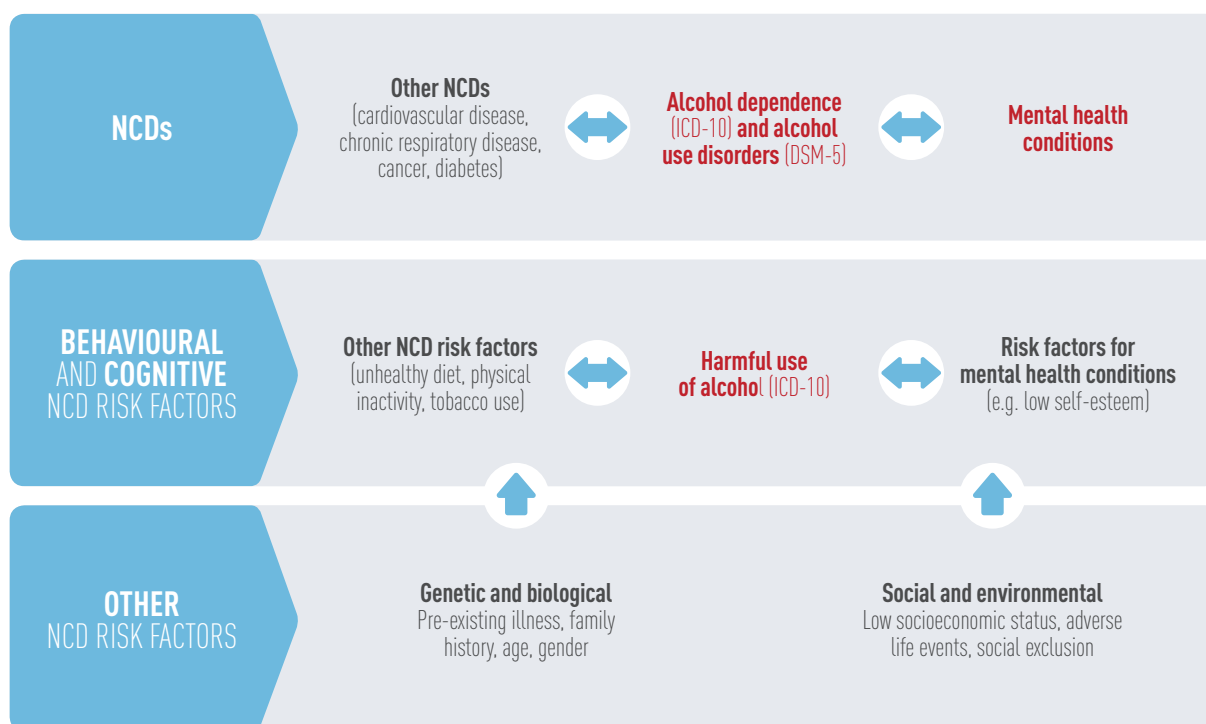
Furthermore, the goal of promoting mental health to reduce the onset or exacerbation of NCDs is clearly identified in the Action plan for the prevention and control of noncommunicable diseases in the WHO European Region 2015–2025 (2). The rationale for the new political declarations can be seen in the strong links and common features of mental health conditions and other NCDs:

- › Chronicity: NCDs persist over time and require continuing monitoring and management, frequently throughout the life-course.
- › Common determinants: NCDs arise from a combination of biological, behavioural and environmental factors.
- › Co-occurrence: Mental disorders and other NCDs often co-occur.
- › Consequences: NCDs lead to significant degrees of disability, which in turn diminish socioeconomic opportunities.

The proposed interactions between NCDs and their risk factors are summarized in Fig. 2. Mental health conditions affect and are in turn affected by other major NCDs. For example, mental health conditions can be

precursors or consequences of other chronic conditions such as cardiovascular disease, diabetes and cancer. Risk factors for mental health conditions (e.g. low mood) are strongly associated with other risk factors and are also risk factors for other major NCDs. Moreover, genetic, biological and social and environmental risk factors influence the development of mental health conditions and other NCDs. Within this framework, emphasis is placed on the links between harmful use of alcohol (as a risk factor for disease and injury), alcohol dependence (as an NCD in its own right) and mental health conditions (also self-standing NCDs).

Fig. 2. Interactions between NCDs and risk factors for NCDs



2 Harmful use of alcohol as a risk factor for NCDs

Alcohol consumption varies considerably around the world. Globally, over two billion people (43% of the global adult population aged 15 years and older) are current drinkers, defined as consuming alcohol in the previous 12 months (3). Alcohol use is an integral part of many cultural, religious and social practices, and alcoholic beverages are a part of the landscape in many of today's societies. Alcohol is, however, a psychoactive substance, with toxic and dependence-producing properties, and harmful use can trigger diseases as well as lead to violence and injuries. Although only half the world's population drinks alcohol, it is the third leading cause of ill health and premature death globally (4). In 2016, harmful use of alcohol resulted in an estimated 3 million deaths worldwide (3), the European Region accounting for about one million of those deaths.

WHO's European Region is the region of the world with the highest levels of alcohol consumption and alcohol-related harm (4). In the Region, alcohol is consumed by more than half the population (59.9% of current drinkers). It is estimated that 6.4% of males and 1.2% of females in the European Region are alcohol dependent and

12.6% of males and 2.9% of females have an alcohol use disorder (5). Definitions of harmful use of alcohol, alcohol dependence and alcohol use disorders are provided in Box 1.

Box 1. Definitions of harmful use of alcohol, alcohol dependence and alcohol use disorders

In the Global strategy to reduce the harmful use of alcohol (6), published by WHO in 2010, harmful alcohol use is defined as “drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as patterns of drinking that are associated with increased risk of adverse health consequences”. This definition covers all categories of drinking as defined in the recently presented 11th version of WHO’s International Classification of Diseases (ICD-11). In ICD-11, the diagnostic categories range in their severity and duration from short-term acute alcohol intoxication to life-long disabling conditions such as dementia due to the use of alcohol. In ICD-10, the harmful use of alcohol and alcohol dependence are coded separately (F10.1 and F10.2). Elsewhere, specifically in the fifth edition of the Diagnostic and statistical manual of psychiatric diseases (DSM-5) of the American Psychiatric Association, alcohol use disorders are defined as a problematic pattern of alcohol use leading to clinically significant impairment or distress.

ICD-10 diagnostic criteria for the harmful alcohol use (F10.1)

- › There is clear evidence that substance use is largely or wholly responsible for mental and/or physical harm, including impaired judgement or abnormal behaviour, that can cause impairment or adverse consequences in interpersonal relationships.
- › The nature of the harm caused by the substance should be clearly specifiable and describable.
- › The pattern of harmful use has been present for at least 1 month or repeatedly over the past 12 months.
- › The diagnostic criteria for another mental or behavioural disorder caused by the same substance are not simultaneously satisfied (with the possible exception of acute intoxication, F10.0).

ICD-10 diagnostic criteria for alcohol dependence (F10.2)

Three or more of the following should be present together for at least 1 month or repeatedly during 1 year:

- › a strong desire or sense of compulsion to take the psychoactive substance (alcohol);
- › difficulty in controlling substance-taking behaviour in terms of its onset, termination or levels of use;
- › a physiological withdrawal state when substance use has ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms;
- › evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses;
- › progressive neglect of alternative pleasures or interests because of psychoactive substance use; and
- › persistent substance use despite clear evidence of overtly harmful consequences (mental and/or physical).

DSM-5 diagnostic criteria for alcohol use disorders

At least two of the following symptoms within 12 months:

- › Alcohol is often taken in larger amounts or over a longer period than intended.
- › There is a persistent desire or unsuccessful efforts to reduce or control alcohol use.
- › A great deal of time is spent in activities necessary to obtain alcohol, use alcohol or recover from its effects.
- › There is craving or a strong desire or urge to use alcohol.
- › Recurrent alcohol use results in failure to fulfil major role obligations at work, school or home.
- › Alcohol use is continued despite persistent or recurrent social or interpersonal problems caused or exacerbated by its effects.
- › Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
- › Alcohol is used recurrently in situations in which it is physically dangerous.
- › Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.
- › Tolerance has developed, as defined by either a need for markedly increased amounts of alcohol to achieve intoxication or desired effect or a markedly diminished effect with continued use of the same amount of alcohol.
- › Withdrawal symptoms are present, as manifested by either the characteristic withdrawal syndrome for alcohol or using alcohol (or a closely related substance, such as a benzodiazepine) to relieve or avoid withdrawal symptoms.

3

Links between harmful use of alcohol or dependence and mental health conditions

Harmful use of alcohol has been identified as a leading risk factor in several health policy frameworks and action plans of the WHO and the wider United Nations system, including the European action plan to reduce the harmful use of alcohol 2012–2020 (4) and the United Nations Sustainable Development Goals (SDGs) (7) (Box 2). Harmful use of alcohol is one of the key risk factors for the development of NCDs, including mental health conditions, as well documented (3). Comorbidity with harmful alcohol use or dependence and mental health conditions has been recognized worldwide as a crucial public health concern, affecting the profile, course, patterns, severity and outcomes of the disorders (8). There is still, however, limited understanding of the links between the harmful use of alcohol or dependence and mental health conditions. Greater understanding of the comorbidity and/or causality between the disorders could have important implications for prevention and treatment and could advance the development of novel, integrated treatment strategies for people with these comorbid conditions.

Box 2. Guiding international frameworks for reducing the harmful use of alcohol

Global strategy to reduce the harmful use of alcohol (WHO, 2010) (6)

The Global strategy to reduce the harmful use of alcohol is the most comprehensive international guidance on reducing the harmful use of alcohol at all levels. The strategy, agreed by WHO Member States in 2010, emphasizes reduction of the harmful use of alcohol and its associated health and social burden as a public health priority. The strategy provides guidance for action at all levels and recommends 10 target areas for national policy and interventions. Regional strategies and action plans have since been developed, providing further guidance and support to countries while accounting for regional backgrounds and priorities.

European action plan to reduce the harmful use of alcohol 2012–2020 (4)

The European action plan to reduce the harmful use of alcohol 2012–2020 highlights harmful alcohol consumption as a public health priority and endorses action to reduce the associated health burden. The plan was endorsed by 53 European Member States at the meeting of the Regional Committee for Europe in September 2011 in Azerbaijan. It proposes 10 areas of action to reduce the harmful use of alcohol for all European Member States and offers a range of evidence-based policy options. The overarching aims are to reduce the harmful use of alcohol, promote health and well-being, improve productivity and enhance human, health and social capital throughout the life-course, from birth to old age.

United Nations Sustainable Development Goals (7)

Harmful alcohol use has a direct impact on many health-related targets of the Sustainable Development Goals (SDGs), including those for maternal and child health, infectious diseases, NCDs (including mental health), injuries and poisoning. The SDGs consist of 17 goals with 169 targets that all United Nations Member States have agreed to try to achieve by the year 2030. Alcohol is specifically mentioned under health target 3.5. The inclusion of a separate health target to strengthen the prevention and treatment of substance use disorders highlights the recognition of harmful use of alcohol as a development issue in itself. It is proposed that actions to reduce the harmful use of alcohol will also contribute to many of the other goals and targets of the 2030 agenda.

In order to provide an overview of the evidence on the topic, the following guiding questions were addressed:

1. What are the links between harmful use of alcohol or dependence and mental health conditions?
2. What is the evidence for integrated treatment approaches to address comorbidity between harmful use of alcohol or dependence and mental health conditions?

To limit the scope of the review, the links between harmful use of alcohol or dependence and depression, anxiety and self-harm or suicidal behaviour were investigated. Depression and anxiety were selected because they are two of the most prevalent, costly mental health conditions in the European Region, and self-harm or suicidal behaviour was selected because it is a major cause of mortality in the Region, especially among young people.

Comorbidity is the rule rather than the exception in mental health disorders (8). The relations between substance use disorders and mental health conditions are generally complex and depend on the mental health condition. Four non-exclusive etiological and neurobiological hypotheses have been proposed to explain comorbidity (9):

- 1 The substance use disorder and the mental disorder represent **independent conditions** (by chance or due to the same predisposing factors, e.g. stress, genetic influences).

2. The psychiatric disorder is a **risk factor** for development of the comorbid substance use disorder (e.g. "self-medication hypothesis").
3. The substance use disorder is a **risk factor** for development of the psychiatric disorder.
4. The temporary psychiatric disorder is a **consequence of intoxication** with, or **withdrawal** from, a specific type of substance (also called a "substance-induced disorder").

Boden and Fergusson (10) also discussed the hypothesis of a reciprocal causal relationship between alcohol and a mental health condition (depression), each disorder increasing the risk for the other simultaneously.

3.1 Depression

The associations between patterns of alcohol use and depression have been addressed in a number of studies, which suggest close links. It is still unclear, however, how the two disorders affect each other. There is some evidence that alcohol misuse is a risk factor for depression and that depression is a risk factor for harmful use of alcohol.

Research over the past 20 years has demonstrated considerable comorbidity between alcohol use and depression; for example, one study found that all odds ratios for an association between alcohol use disorders and major depression in the general population were significantly greater than 1.0 (11). In a cross-sectional study of data from four epidemiological investigations in Europe and the USA, the lifetime prevalence of depression was three to four times higher in people with alcohol abuse or dependence (12). In a study based on data on more than 43 000 adults in the USA, the adjusted odds ratio for lifetime major depressive disorder and any alcohol use disorder was 1.9 (95% confidence interval [CI], 1.7–2.0) (13).

Reviews and meta-analyses

In a recent systematic review and meta-analysis of epidemiological studies conducted over the past 25 years, the risk for major depression was three times higher for a person with alcohol dependence than for individuals without such a disorder (pooled odds ratio, 3.09 [95% CI, 2.38–4.03]), and the pooled odds ratio for major depression and alcohol abuse was 1.53 (95% CI, 1.20–1.95) (8). In another review, a moderately strong association was found between alcohol use disorders and major depression (10). The presence of either disorder doubled the risk for the second, with pooled adjusted odds ratios of 2.00–2.09.

Harmful use of alcohol or dependence as a risk factor for depression

The results of several studies suggest an effect of harmful use of alcohol or dependence on the incidence of depression (14–16). In their review, Boden and Fergusson (10) proposed a causal linkage, such that increasing alcohol consumption increases the risk for major depression, rather than vice versa. The evidence is, however, mixed, as some studies did not find that harmful alcohol use constitutes a risk factor for depression (17, 18).

Depression as a risk factor for harmful use of alcohol or dependence

There is some evidence that depression is a risk factor for harmful use of alcohol or dependence, although the results are mixed. In one study, for example, it was found that prior major depression significantly affected the risk for alcohol dependence (19). Similarly, people with depressive symptoms at baseline were reported to be at significant risk for alcohol dependence at the 1-year follow-up (15). In respondents with major depressive disorders, the lifetime prevalence of any alcohol use disorder was reported to be around 40% (13). Other studies did not confirm an effect of depression on harmful use of alcohol or dependence (20, 21). For example, Wang and Patten (20) found that people who were depressed were generally not at higher risk of starting to drink or of drinking more frequently than once a week. Nevertheless, major depression was a risk factor for frequent heavy alcohol use among women in this study.

In general, the studies of associations between harmful alcohol use or dependence and depression included a wide variety of measures and patterns of alcohol consumption (e.g. alcohol dependence, alcohol abuse, direct measures of alcohol consumption) and depressive symptoms, a variety of instruments and differences in the time-frame for measurement of each disorder. These differences may explain some of the heterogeneity of the findings (10).

3.2 Anxiety disorders

There is strong evidence for a relation between anxiety disorders and harmful alcohol use (especially alcohol dependence); however, little is known about the etiology and nature of this relation. Empirical evidence points to multiple causal pathways, which may depend on the individual and the anxiety sub-type.

The National Epidemiologic Survey on Alcohol and Related Conditions in the USA has repeatedly found a high risk for comorbidity with alcohol use and symptoms of anxiety (22, 23). In a report published in 2004, the 12-month odds ratios for any anxiety disorder in individuals with alcohol dependence or abuse were 2.6 and 1.1, respectively (22). A report in 2006 showed significant odds ratios for any anxiety disorder for individuals with alcohol dependence (but not with harmful alcohol use) (23). The results suggest that the relation between anxiety disorders and alcohol dependence is stronger than that between anxiety disorders and harmful use of alcohol. Moreover, the relations differed by gender, harmful use of alcohol and anxiety disorders being more closely related for women than for men (24).

Reviews and meta-analyses

In a recent meta-analysis, anxiety disorders were strongly associated with alcohol use disorders: the odds ratio for any anxiety disorder and alcohol abuse was 1.63 and that for alcohol dependence was 2.53 (8). Kushner and colleagues (25) reviewed the relation between anxiety and alcohol use disorders and concluded that anxiety disorders or alcohol dependence could serve as a causal stimulus in the development of the other disorder. Moreover, they stated that anxiety disorders could contribute to the persistence of alcohol use disorders and

relapse. They proposed a vicious cycle of increasing anxiety symptoms and alcohol use that could result in comorbidity; once both alcohol use and anxiety are present, each disorder could promote the maintenance or exacerbation of the other.

Harmful use of alcohol or dependence as a risk factor for anxiety

In a sample drawn from four epidemiological investigations in Europe and the USA, individuals with harmful alcohol use or dependence showed a two to three times increase in the lifetime prevalence of anxiety (12). A prospective study conducted by Kushner and colleagues (26) indicated that a diagnosis of alcohol dependence 1 or 4 years after baseline quadrupled the risk for a new anxiety disorder at 7 years. Sabourin and Stewart (24) proposed that alcohol-induced anxiety could have a psychosocial or physiological mechanism, as alcohol may interfere with normal adaptation to stressful stimuli. Moreover, the negative consequences of problematic drinking (e.g. job loss) may lead to anxiety and increase vulnerability to anxiety disorders. Physiologically, alcohol withdrawal may produce symptoms of anxiety such as shakiness.

Anxiety as a risk factor for harmful use of alcohol or dependence

There is ample evidence from studies in clinical and non-clinical populations that symptoms of anxiety precede and contribute to increased alcohol use (24). In a prospective study, Kushner et al. (26) found that people with an anxiety disorder diagnosed 1 or 4 years after baseline had a five times increased risk of alcohol dependence at year 7. In further studies, people with anxiety disorders reported using alcohol to manage their anxiety (25, 27). Thomas and colleagues (27) found that socially anxious individuals reported drinking to feel more comfortable in social situations and avoiding social situations if alcohol was not available. In another study, participants with social phobia consumed more alcohol after an anxiety-provoking activity than after a control activity that was likely to reduce their anxiety (28). In a study in which moderate drinkers kept diaries, feelings of anxiety or nervousness (but no other negative mood states) predicted increased alcohol consumption later in the day (29). Several other factors, such as alcohol expectancy, self-efficacy, drinking motives and anxiety sensitivity, may interact to explain problematic alcohol use by anxious individuals (24).

3.3 Self-harm and suicidal behaviour

An extensive body of literature has indicated associations between harmful use of alcohol or dependence and self-harm or suicidal behaviour. Harmful use of alcohol (especially severe alcohol use disorders) appears to be a risk factor for self-harm and suicidal behaviour.

Self-harm

Alcohol can increase impulsivity and the pain threshold and may impair judgement; therefore, it can trigger self-harm (30). Problematic use of alcohol is commonly found among people who deliberately self-harm

(30, 31). Haw and colleagues (32) showed that 26.7% of people in the United Kingdom who had an episode of deliberate self-harm were dependent on alcohol or used it harmfully, males being significantly more likely than females to have alcohol dependence or harmful alcohol use. Similarly, data from the Oxford Monitoring System for Attempted Suicide demonstrated that alcohol disorders were common in people with deliberate self-harm behaviour: 8.6% of people who had deliberately self-harmed had diagnosed alcohol dependence and 23.4% drank excessively (31). Again, alcohol dependence and excessive drinking were significantly more common in males than in females.

Suicidal behaviour

A meta-analysis revealed an elevated risk for suicidal behaviour in relation to alcohol use disorders (33), with significant associations between alcohol use disorders and suicidal ideation (odds ratio, 1.86; 95% CI, 1.38, 2.35), attempted suicide (odds ratio, 3.13; 95% CI, 2.45, 3.81) and completed suicide (odds ratio, 2.59; 95% CI, 1.95, 3.23). It was concluded that alcohol use disorders are an important predictor of suicide. Norström and Rossow (34), in a systematic review, identified an association between alcohol intoxication or abuse and suicidal behaviour at both individual and population levels. Harmful alcohol use and intoxication were often found in people with suicidal behaviour, the risk for suicide was increased in people with harmful alcohol use, and increasing population drinking tended to be associated with an increase in suicide rates. The magnitude of the relation differed for men and women, with a higher prevalence of harmful alcohol use or intoxication and suicidal behaviour and a stronger association between population drinking and suicide rates for males. In a meta-analysis, the effect of acute use of alcohol on suicide attempts was examined (35). All the studies reported increased odds ratios for acute alcohol use in suicide attempts, particularly at high doses, with a common odds ratio of 6.97 (95% CI, 4.77, 10.17). In review in 2010, acute alcohol use was also reported to constitute a risk factor for suicidal behaviour (36).

4

Treatment approaches for people with mental health conditions and comorbid harmful use of alcohol or dependence

Comorbidity is a major public health concern and clinical challenge. The high rate of comorbidity between mental health conditions and harmful use of alcohol or dependence may affect treatment of each disorder. Integrated treatment for harmful use of alcohol or dependence and mental health conditions may therefore be an effective strategy for treating individuals with the two conditions. Combined treatments are not common clinical practice, and comorbid diseases are either not recognized or not treated (37).

4.1

Depression

Impact of comorbidity on treatment outcomes

Research has shown that depressive symptoms can result in a relapse into alcohol use. For example, Driessen et al. (38) found that comorbid depressive disorders constitute a risk factor for relapse among people with

alcohol dependence who have been abstinent. Moreover, depressed mood was the most frequent determinant of relapse reported retrospectively by men treated for alcohol addiction (39). Greenfield et al. (40) reported that current major depression was associated with a shorter time to first use of alcohol and relapse among people with alcohol dependence.

Treatment approaches

Integrated treatment

There is persistent controversy about adequate treatment of people with substance use disorders and comorbid depression (41). Increasing numbers of combined treatments have been proposed for alcohol use disorders and depression (37). Although the effectiveness of such treatment has been investigated in relatively few trials, those available indicate promising effects. Integrated treatments often include components of cognitive-behavioural therapy (CBT) and motivational interviewing, with or without additional pharmacological treatment (37). Riper and colleagues (37) conducted a meta-analysis of studies of the effectiveness of the combination of CBT and motivational interviewing for the treatment of clinical or subclinical alcohol use disorders and major depression and found a small but clinically significant effect in treatment outcomes as compared with usual treatment. Baker et al. (42) conducted a systematic review of studies on the effectiveness of psychological interventions for people with co-occurring alcohol and depressive or anxiety disorders and found that motivational interviewing and CBT resulted in significant reductions in alcohol consumption and symptoms of depression and/or anxiety. Longer interventions (several weeks) resulted in greater improvement in both mental health and alcohol use than brief interventions (often only one session).

Pharmacological treatment

In a Cochrane review of studies of people with comorbid depression and alcohol dependence who were treated with antidepressants, placebo or other treatments (43), antidepressants decreased certain outcomes but not others. The authors concluded that the evidence for use of antidepressants in the treatment of people with co-occurring depression and alcohol dependence was of low quality. In a meta-analysis, Foulds et al. (44) found that treatment of depression in alcohol-dependent individuals resulted in a large, early improvement in the severity of depression. Another review indicated that antidepressants had a modest beneficial effect in individuals with depression and substance use disorders (including alcohol dependence) (41).

4.2 Anxiety disorders

Impact of comorbidity on treatment outcomes

Several studies have found that anxiety disorders increase the likelihood of a relapse in treated or abstinent people with alcohol use disorders (38, 45–47). Schellekens and colleagues (47) found that alcohol-dependent individuals with anxiety disorders were particularly prone to relapse during the first 3 months of treatment. Another study (38) indicated that depressive and/or anxiety disorders and combinations of the two were the greatest risk factor for relapse to alcohol use. With regard to the influence of alcohol use on anxiety, Bruce et al. (48) found that having an alcohol use disorder decreased the likelihood of recovery from various types of anxiety disorder (panic disorder, social phobia and generalized anxiety disorder) and increased the likelihood

of their recurrence. Furthermore, alcohol use disorders were found to predict poorer treatment outcomes for people with post-traumatic stress disorder (49). Kushner et al. (25) reviewed the evidence and reported that reducing clinical symptoms of anxiety improved the outcome of treatment for alcohol dependence.

Treatment approaches

Integrated treatment

A consistent finding in the treatment of people with comorbid anxiety and substance use disorder is that treatment of one disorder usually does not improve the other (50). Few studies have been conducted on integrated treatment for anxiety and substance use disorders, and most of the available treatments are in relatively early stages of investigation (50). The results of the few studies on the effectiveness of truly integrated treatments for comorbid alcohol and anxiety disorders are inconsistent.

Kushner et al. (51) found promising effects of an integrated treatment programme for comorbid panic disorder, treated by CBT, and alcohol use disorder, treated as usual, with an effective reduction in panic attacks and relapses that were significantly less severe. Morley and colleagues (52) assessed the effectiveness of integrated treatment for alcohol dependence with comorbid anxiety and/or depression in hospital outpatients. The participants received either CBT plus usual treatment for alcohol use or usual counselling care for alcohol problems only. Integrated treatment resulted in a significantly longer time to lapse or relapse¹ and a higher percentage of days of abstinence; however, the treatment had no effect on the number of drinks per drinking day.

Contrasting results were found in a randomized clinical trial in which people with social anxiety disorder and alcohol dependence were randomly assigned to treatment for alcohol dependence with or without CBT (53). The anxiety outcomes were similar in the two groups, but alcohol dependence treatment alone was more effective on drinking outcomes. In a randomized clinical trial with people with alcohol dependence who were abstinent and a comorbid anxiety disorder, participants received either standard alcohol treatment or standard alcohol treatment plus anxiety treatment (CBT plus optional fluvoxamine) (54). Although the additional anxiety treatment reduced anxiety symptoms, no significant difference was found for alcohol relapse. Both trials have, however, been criticized as offering poorly integrated treatment, as the treatments were delivered at separate clinics or by different clinicians (55).

Pharmacological treatment

The findings on the effects of pharmacological treatment for alcohol use (e.g. with paroxetine or buspirone) and anxiety disorder are inconsistent. While some studies found improvements in alcohol disorder outcomes, others reported inconclusive results (50).

4.3 Self-harm and suicidal behaviour

Impact of comorbidity on treatment outcomes

People with alcohol use disorder and self-harm behaviour were about half as likely to commit non-fatal suicide

¹ A "lapse" is a brief return to alcohol use followed by a clear return to the person's recovery goals. A "relapse" is abandonment of the goal of reducing or avoiding alcohol use and a return to previous levels of use.

attempts in the year after treatment for alcohol or substance use disorder than in the year before treatment (56). More recent problematic alcohol use was a baseline predictor of a suicide attempt at follow-up.

Treatment approaches

Integrated treatment

Currently, for people with concomitant suicidal behaviour and alcohol or other substance abuse disorders, the conditions are treated separately, and patients are often cross-referred to separate mental health and substance abuse systems with conceptually different approaches, which may compromise effective treatment (57). Researchers have pointed out the potential benefits of integrated treatment; for example, by treating suicidality and alcohol or substance use disorders simultaneously, therapists can better understand their functional relation and intervene accordingly. Integrated treatment may also result in a simpler treatment plan, providing a more consistent treatment message and practice for clients (57). There is little evidence, however, of the effectiveness of integrated treatment for people with comorbid suicidal behaviour and alcohol abuse disorder, and few studies have indicated beneficial effects of integrated treatment.

In one study, “dialectical behaviour therapy” was compared with treatment as usual among women with substance abuse disorders and borderline personality disorders characterized by suicidal behaviour (58). Therapy was associated with more days of abstinence from alcohol and drugs at the 16-month follow-up (measured by structured interviews and urinalyses) and a higher proportion of women remaining in treatment. There was no difference, however, in the frequency of self-harm in either group. In a study of 101 suicidal women with borderline personality disorder, treatment with dialectical behaviour therapy was associated with higher rates of full remission from alcohol or substance use disorders and more self-reported days of abstinence from drugs or alcohol than in people treated with non-behavioural therapy (59).

In a randomized controlled trial, the efficacy of integrated CBT was compared with treatment as usual for people with comorbid suicidality and substance use disorders (64% with an alcohol use disorder) (57). Integrated CBT treatment was associated with significantly fewer days of heavy drinking (but not other drinking) than treatment as usual. It was also associated with significantly less global impairment, fewer suicide attempts and less use of additional health services (e.g. psychiatric hospitalization, emergency department visits). The reduction in suicidal ideation was equivalent in the two groups.

5 Conclusions

The empirical evidence suggests close links between the selected mental health conditions and harmful use of alcohol or dependence; however, the causal pathways linking the conditions remain uncertain. Evidence is also limited on the availability and effectiveness of integrated treatment approaches for comorbid conditions. Although the current evidence does not allow definitive conclusions, the following preliminary conclusions can be drawn.

- ▶ There are strong links between harmful use of alcohol or dependence and mental health conditions.

- Harmful use of alcohol or dependence may be a risk factor for depression and vice versa.
- Multiple causal pathways link anxiety and harmful use of alcohol or dependence, which vary by individual and anxiety sub-type.
- Harmful use of alcohol or dependence is a risk factor for self-harm and suicidal behaviour.
- › Comorbidity with mental health conditions and harmful use of alcohol or dependence affects the treatment of each condition. Therefore, treatment should include concurrent management of the two.
- › Research on integrated treatment of people with comorbid mental health conditions and harmful use of alcohol or dependence is increasing. The available studies suggest that integrated treatment may reduce symptoms of both disorders when monitored simultaneously.
- › Despite promising results, more work remains to be done on the effectiveness of integrated treatment. Further studies should be conducted to develop new, integrated treatments comprising effective psychosocial and pharmacological interventions for simultaneous treatment of harmful use of alcohol or dependence and comorbid mental health conditions.

6

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