DARC
Drug & Alcohol
Research Centre

Middlesex
University
London

Young people, mental health and substance use

Exploring the links

Jamila Boughelaf and Agata Plasa

MENTOR UK

DARC Associate Member

September 2018

Mentor

Introduction

Several population and epidemiology studies have documented the high prevalence of mental health problems. It has been suggested that mental and substance use disorders are major drivers of increased rates of disability worldwide (Vos et al., 2015). According to the 2014 Adult Psychiatric Morbidity Survey, a nationally representative face-to-face survey using validated mental disorder screens and assessments, approximately 1 in 6 adults might be suffering from a common mental disorder (CMD) in the UK (NHS Digital, 2016). A systematic review of the distribution of common mental disorders indicated that worldwide, around 1 in 4 adults may be suffering from these conditions at some point in their life (Steel et al., 2014). The term CMD mainly encompasses mental illnesses related to anxiety and depression (National Institute for Care Excellence [NICE], 2011). As the name implies, these are the most prevalent mental health conditions worldwide, which was confirmed by the Global Burden of Disease Study (Whiteford et al., 2013). However, in some surveys other conditions, such as substance use disorders, were also included under the umbrella of CMD, which may limit comparisons across studies (Steel et al., 2014).

Moreover, symptoms reported in many national surveys do not necessarily imply that individuals in the studied populations hold clinical diagnoses of mental disorders (Steel et al., 2014). In order to obtain a diagnosis of a mental disorder, symptoms need to be observed over an extended time period and assessments using standardised diagnostic tools should be conducted by a qualified health professional (NICE, 2011). The International Classification of Diseases (ICD) for mental and behavioural disorders or the Diagnostic and Statistical Manual of Mental Disorders (DSM) are prominent examples of such diagnostic tools (Clark et al., 2017; Steel et al., 2014).

The World Health Organisation (WHO) also pointed out that it is possible to experience sub-threshold mental disorders (WHO, 2014) and several authors emphasised that the mere absence of a mental disorder does not necessarily imply positive mental health. Thus, mental health is considered an indicator for overall well-being and life satisfaction (Campion et al., 2012; Falissard,

2016). However, low levels of wellbeing can predict later mental ill-health (Keyes et al., 2010). Conversely, it was suggested that an individual may feel satisfied with life despite the presence of a mental disorder (Headey et al., 1993; Weich et al., 2011).

Hence, the approach to assess mental health in the context of wellbeing and life satisfaction is distinct from the one that is employed to screen for mental disorders. Screenings for mental illnesses largely focus on deficits in psychological, cognitive, and social functioning. Measures of wellbeing are supposed to emphasise positive aspects of life functioning (Slade, 2010). However, some concerns have been raised regarding the distinctiveness of those two concepts, as their scores were found to largely correlate (Böhnke & Croudace, 2016). In both cases, the assessments also contain a substantial element of subjectivity, as they commonly rely on self-reports or in some cases reports of others (i.e. parents; Deighton et al., 2014; Lindert et al, 2015; Pies, 2007). Thus, some studies have used socioeconomic markers, such as material wealth and education, to facilitate a more objective assessment of wellbeing. For example, the UNICEF report on child wellbeing in rich countries (UNICEF, 2013) employed such an approach.

While subjective and objective approaches to measure wellbeing do not relate to fully overlapping constructs (UNICEF, 2013), various socioeconomic factors were found to consistently correlate with individuals' wellbeing and mental health (UNICEF, 2013; WHO, 2014). It is assumed that certain groups may be more likely to suffer from mental ill-health due to increased exposure to unfavourable social, economic, and environmental conditions (WHO, 2014). According to the WHO (2014) certain disadvantages may already exist before birth and accumulate throughout life. Therefore, mental health issues are not only common in adults, but throughout the lifespan.

The aim of this review is to provide an overview of key findings from the literature on mental health in childhood and adolescence and to consider, in particular, links between mental health and substance use. The review is part of a collaborative project between the Drug and Alcohol Research Centre, Middlesex University and MENTOR UK.

Mental Health in Children and Young People

A review of epidemiological studies by Kessler and colleagues (2007) revealed that half of all lifetime mental illnesses emerge in mid-adolescence and three-quarters in early adulthood. Corresponding evidence has been provided by British population studies on the wellbeing of children. According to the Children's Wellbeing publication, 1 in 8 children between the age of 10 and 15 reported to have symptoms of mental ill-health in 2011 to 2012 (Office for National Statistics [ONS], 2015). In an adolescent sample, this prevalence of mental health problems was found to be higher: 1 in 5 respondents aged 16 to 24 indicated symptoms of depression or anxiety in the UK Wellbeing Survey 2013 (ONS, 2015).

Overall, the prevalence of mental health problems in children and young people appears to be on the rise in the UK. A recent review of repeated cross-sectional national health surveys revealed that from 1995 to 2014 self- and parent-reported mental health conditions increased by 50% in Wales, six-fold in England, and doubled in Scotland (Pitchford et al., 2017). Thus, several authors have emphasised that childhood and adolescence are particularly crucial phases for the promotion of mental health, prevention, and treatment of mental health problems (Birchwood and Singh, 2013; Campion et al., 2012).

However, it should be noted that manifestations of childhood and adolescent mental health problems might differ from those present in adulthood (ONS, 2015). For example, a prominent instrument to measure mental health problems in individuals aged 5 to 15, the Strength of Difficulties Questionnaire (SDQ), entails four separate categories of difficulties: peer relations, emotional problems, conduct problems, and hyperactivity (Goodman et al., 2003). The former two can also be grouped as internalising problems, while the latter categories are considered externalising problems (Goodman et al., 2010). However, these categories of mental health problems in children and youth can be linked to adult mental disorders. According to a review by Fryers and Brugha (2013), internalising problems are assumed to most closely resemble anxiety or depression, while externalising problems may result in conduct disorder. However contrarily, it was found that externalising problems in childhood can predict adult depression, which suggests that the proposed categories and developmental patterns may oversimplify the respective relationships (Copeland et al., 2009; Loth et al., 2014; Hamblin, 2016)

While exact developmental trajectories of mental health conditions have not been determined, longitudinal studies highlighted the strong continuity of mental health problems from childhood or adolescence into adulthood (Fryers & Brugha, 2013; Kessler et al., 2005). Depression showed particularly strong continuity, with some studies documenting that up to 75% of depressed children may display further signs of depression in adulthood (Fombonne et al., 2001; Kovacs et al., 2016).

Similarly to adults, children's and young people's mental health can also be assessed from the perspective of subjective wellbeing. This kind of approach was employed by the Good Childhood Report (The Children Society, 2015). While the survey found moderate correlations between mental health conditions and wellbeing, only in 6% of the studied children would mental health problems and low life satisfaction accumulate in a single individual. On this basis, the authors argued for the distinctiveness of those two concepts. Moreover, this report assessed wellbeing by taking into account different areas which may influence children's life satisfaction, such as family and peer relationships, school, and material factors. In this context, social determinants may play a role in the epidemiology and distribution of mental health and wellbeing (we will outline this in detail in the next section).

As previously highlighted, socioeconomic factors may cause certain groups to be particularly susceptible to developing mental health problems. Gender appears to be a particularly widely discussed social determinant. It was suggested that the distinct types of mental health problems and aspects of wellbeing tend to be unevenly distributed across gender (Hamblin, 2016). Girls are assumed to be more strongly affected by internalising problems (Bask, 2015) and report lower satisfaction with themselves (The Children Society, 2015), while boys are more likely to present externalising behaviours (Bongers et al., 2004). However, a review by Hamblin (2016) also proposed that gender differences vary across development. The author observed that in comparison to girls, younger, school-aged boys appear to be more strongly affected by diverse mental health difficulties. This gender gap narrows down in adolescence, as in this developmental stage girls report more emotional problems, while these mental health problems seem to diminish in boys (Dekker et al., 2007).

The reasons for these observed developments and gender differences in mental health are not fully understood. It has been suggested that social, economic, and environmental factors may be

involved (WHO, 2014). For example, it has been suggested that women are at increased risk for gender-based abuse and violence (Oram et al., 2017) and, in line with this observation, women were also found to report stressful life events prior to the onset of a mental disorder more commonly than men (Harkness et al., 2010). These differences may also find their roots in aspects related to biological sex, such as hormonal mechanisms which may cause women to be more susceptible to certain mental health disorders (Kuehner, 2017; Li & Graham, 2017). Moreover, as was noted above, girls usually report lower satisfaction with their appearance compared to boys (The Children Society, 2015), which may also reflect gender-specific cultural norms, such as expectations towards a certain body image. This finding could also offer one possible explanation for why girls are disproportionally affected by eating disorders (Hamblin, 2016).

However, it should be also considered that women might be more inclined to openly address their emotional issues while men might be underreporting mental health problems (Hamblin, 2016). Related findings have been provided through an exploratory study on knowledge and attitudes towards mental health among Scottish teenagers (Williams & Pow, 2007). The researchers found that boys were less likely to express interest in mental health education, while girls showed greater and broader knowledge on a range of mental health conditions. Compared to girls, boys were also more likely to hold negative attitudes towards people suffering from mental disorders, i.e. finding it difficult to talk to somebody with a related condition or believing that recovery from mental illness is unlikely. Similarly, men's mental health problems might be underdiagnosed as men may predominately focus on physical or stress-related symptoms when accessing healthcare services, while failing to address emotional symptoms (Haggett, 2014). Moreover, it has been frequently reported that substance use problems, severe psychosis, and suicide are much more common in men than in women (Wilkins & Kemple, 2011). This leads some authors to suggest that gender differences in the distribution of mental health problems may be potentially tied up in aspects related to hegemonic masculinity/femininity (Haggett, 2014) and gender-specific stigma in this context (Wilkins & Kemple, 2011; Rice et al., 2018).

While gender differences appear to emerge relatively consistently in studies on mental health problems (WHO, 2014), the Good Childhood Report (2015) noted that this demographic variable only explains a small amount of the variance in wellbeing scores. Another social determinant, which may be of relevance for mental health, is socioeconomic status. In this context, the WHO (2014) proposed a life course approach which allows to identify risk factors in certain stages of

development, which may contribute to vulnerability to future mental disorders. On this basis, it was proposed that signs of inequity in social distribution become evident before adulthood. In childhood and adolescence, the socioeconomic status of the family appears to be particularly important.

Poverty is commonly assumed to contribute to the emergence of mental ill-health (Fitzsimons et al., 2017; Wickham et al., 2017). A systematic literature review focussing on depression and anxiety in youth aged 10 to 15 revealed that lower socioeconomic groups show higher rates of these conditions (Lemstra et al., 2008). Longitudinal data from the British Millennium Cohort Study also supported the accumulation of mental health problems in lower income groups (Fitzsimons et al., 2017). Furthermore, transition into poverty was found to be associated with the emergence of symptoms of mental ill-health (Fitzsimons et al., 2017; Wickham et al., 2017). The Good Childhood Report (2015) also emphasised the importance of children's experience of their material circumstances. Children were most likely to report low satisfaction if their economic conditions were poorer than their peers, rather than on the basis of their household income per se. While the social distribution of mental health problems has been particularly well documented in high-income countries (WHO, 2014), a systematic review by Lund and colleagues (2010) also confirmed a largely consistent association between CMDs and several poverty measures in low- and middle-income countries.

The WHO (2014) suggested that the underlying mechanisms regulating this association are most likely bidirectional (WHO, 2014). On the one hand, poverty may increase exposure to risk factors for mental health problems (Fryers et al., 2005). On the other hand, these conditions may lead to reduced chances for socioeconomic success and reinforce poverty (Cheng et al., 2016). Socioeconomic factors may also lead to uneven levels of awareness of mental health and inequalities in accessing treatment for mental disorders (Hodgkinson et al., 2017; Reardon et al., 2017). Thus, it was suggested that intergenerational transfers could help to explain why mental health problems tend to accumulate in low-income groups (Cheng et al., 2016; Johnston et al., 2013).

Risk and protective factors contributing to mental ill- health and substance use

Evidence shows that there are a variety of risk and protective factors that influence children and young people's wellbeing and behaviour, including substance use. The risk and protective factors approach is often used to prevent risky or problematic behaviours, such as substance use, because if risk factors are lowered and protective factors heightened children and young people are less likely to develop drug or related issues. Examples of common risk and protective factors are presented in Tables 1 and 2 respectively.

Table 1

Risk factors potentially influencing the development of mental health and substance use disorders

Individual	Family	School	Community	Life events
Difficult temperament	Poverty	Early school failure	Community disadvantages and disorganization	Unemployment
Aggression	Family breakdown	Peer relationship (e.g. social isolation or relationship with peers who are involved in drug use)	Neighbourhood violence and crime	Trauma (e.g. physical, mental or sexual abuse)
	Parent and family substance use behaviours		War or natural disaster	Isolation
	Neglect in childhood			Family breakdown

Commonwealth of Australia, 1996; Dadds, Mullins, McAllister, & Atkinson, 2003; Durlak, 1998; Durlak & Wells, 1997; Loxley et al., 2004

Note. Reprinted from Goren et al., 2007

Table 2

Protective factors potentially influencing the development of mental health and substance use disorders

Individual	Family	School	Community	Life events
Easy temperament	Low parental conflict	Opportunities for positive social involvement – sense of belonging	Religious involvement	Economic security
Social and emotional competence	Family harmony	Opportunities for some success and rewards for achievements	A well-managed environment	Involvement with significant other adult person
	Family norms		Opportunities for positive social involvement – sense of belonging	

Commonwealth of Australia, 1996; Dadds et al., 2003; Durlak, 1998; Durlak & Wells, 1997; Loxley et al., 2004

Note. Reprinted from Goren et al., 2007

The health and wellbeing of children and young people is influenced and determined by multi-combinations of such risk and protective factors (or themes), that could be simplified into a framework of three key related components: self, relationships and environments (The Good Childhood Report, 2015). Some experiences children and young people live encompass these three components, whilst others are strictly linked to one component.

Self

Children and young people's own attitudes and perceptions affect their behaviour and well-being. A survey undertaken for the Good Childhood Report outlined that children recognise they should take responsibility over their own quality of life and perceptions but also acknowledge the importance of formal and informal learning as protective factors in shaping their wellbeing. The same report also highlighted that children are concerned with both their well-being in the moment (here and now) as well as their wellbeing in the future (The Good Childhood Report, 2015).

Individuals' perceptions of their own quality of life are therefore significant influencers of the way children and young people's really feel, and consequently behave.

Relationships

Positive relationships, whether with family members, peers or school community, normally function as strong protective factors for positive educational outcomes and lower the likelihood of health-risk behaviours in children and young people. However, relationships are fluid, and different combinations of strong links may work in different ways. For instance, if an individual has strong relationships and connectedness with peers but low connectedness with school or family, this could become a risk factor in combination with other risk factors related to the self and/or the environment.

Family

Strong and positive relationships with parents are some of the most important protective factors for the wellbeing of children and young people. For instance, being able to talk to parents about things that matter is a very strong protective factor (ONS, 2015). Family relationships, including the marital status of the parents, and related implications, seem to be significant determinants of a young person's likelihood to suffer from mental health issues or use substances. A longitudinal study aimed at analysing the psychosocial influences of mental health and substance use among children of divorced parents in comparison with children of married parents, found that the former group scored higher on variables such as life stress and number of substance-using friends and family, while also reporting less problem-focused coping (Short, 1998). The study also indicated that the differences in outcomes could be in part accounted for by more life stress, more reported substance-using family members and friends, and less problem-focused coping (coping being a protective factor) (Short, 1998). Evidence also shows that children who experience parental divorce during their adolescence are more likely to report drug involvement compared to those who experienced it earlier in their childhood (Needle et al., 1990). Similarly, it is reported that children of divorce are more susceptible to peer pressure from friends with increased likelihood of engaging in deviant behaviours (Steinberg, 1987).

Although there is not enough evidence showing actual causal links between poor parent-child relationship and mental ill health, there is association between the two, and one can influence the other. Difficult relationships with parents, specifically with the mother, are also a predictor of

potential mental health issues later in life. The Office for National Statistics indicates that children who are quarrelling with mother more than 3 times a week reported higher scores of mental ill-health (ONS, 2015).

A recent meta-analysis reviewing longitudinal links between parental variables and adolescent alcohol use identified a set of risk and protective factors which may help to propose causal relationships in this context (Yap et al., 2017). Parental provision of alcohol was found to be the risk factor which explained the highest amount of variance in initiation of drinking and later levels of alcohol use in adolescence, while parental monitoring was the most salient protective factor. Other risk factors, which were considered to have a sound evidence base, were positive parental attitudes towards drinking and parental drinking. Regarding protective factors parent-child relationship, parental support, as well as involvement were also found meaningful. However, the effect sizes were small, as no individual factor explained more than 7% of variance in the adolescent alcohol use variables (Yap et al., 2017).

Relationships with peers

Unhealthy relationships are generally a risk factor for the wellbeing of children and young people. Within the spectrum of 'unhealthy relationships', bullying is a strong predictor of mental health issues. The Office for National Statistics reports that children who were bullied were four times more likely to report high or very high score of mental ill-health (ONS, 2015). Bullying impacts on the individual's self-perception and decreases self-esteem, elements that often have a negative impact on the emotional wellbeing of an individual, especially true for children and young people who are transitioning to adulthood. Bullying is often linked to perception of young people's own appearance, which is in itself a strong influencer of self-esteem, especially among adolescents. The Office for National Statistics reports that, "poor body image accounted for the higher prevalence of depression and low self-esteem among girls" (ONS, 2015: 9).

Unhealthy relationships, poor body image and bullying can also be exacerbated by the influence of social media and new technologies, increasing the likelihood of young people suffering from low self-esteem and emotional distress. Evidence highlights the role of social media in reducing children and young people's mental health, due to it being source of social comparison, isolation and potentially cyber bullying. A NatCen study found that screen time (time spent playing computer games) was negatively associated with young people's wellbeing (NatCen, 2013), with increased TV

viewing being generally associated with lower self-esteem and self-worth (Parfitt et al., 2009) and increased screen time (inclusive of TV viewing, computer and video games playing) being associated with higher levels of anxiety, emotional distress and depression (ibid).

A study among high school students in Hawaii (multi-ethnic sample) also found that "Cyberbullying victimization increased the likelihood of substance use, with binge drinking and marijuana use both approximately 2.5 times more likely to occur and increased the likelihood of depression by almost 2 times, and suicide attempts by 3.2 times (3.2 times for females and 4.5 times for males)". The study, however, concluded that cyberbullying is not a significant predictor of depression or anxiety (Goebert et al, 2011: 1283-1284).

Happiness with school

A longitudinal study of secondary school students (n=2678, age: 13-14 years old, Victoria, Australia) highlighted that a combination of good school engagement and social connectedness in early secondary school are protective factors to substance use and mental health problems, being associated with better outcomes in later years. The same study pointed out that students with any other combination of social and school connectedness were at higher risk of experiencing anxiety or depressive symptoms. The most statistically relevant combination showed that "students with low school connectedness, but good social connectedness were at higher risk of anxiety/depressive symptoms (odds ratio [OR]: 1.3; 95% confidence interval [CI]: 1.0, 1.76), regular smoking (OR: 2.0; 95% CI: 1.4, 2.9), drinking (OR: 1.7; 95% CI: 1.3, 2.2), and using marijuana (OR: 2.0; 95% CI: 1.6, 2.5) in later years" (Bond et al., 2007: 9). It also confirmed that students with both low school connectedness and interpersonal conflict in early secondary school are more likely to have mental health or substance use related problems in later years.

Environment

It is known that people suffering from mental health often suffer from stigma and negative attitudes from society – factors that significantly increase the risks of taking up additional risky behaviours as an attempt to create an identity and meaning as an individual that society does not allow. "A combination of experiences such as social isolation, boredom, lack of meaningful activity and an awkwardness with interactions can all potentially be ameliorated by substances" (Hamilton, 2014: 123). According to Hamilton, not much is known about the way stigma operates in those who have combined issues, such as mental health and substance use problems. However, it is believed that

these individuals would face multiple stigma linked to a variety of factors, such as "treatment non-concordance, relapse, reduced self-esteem, social exclusion and discrimination both by society and those working within health and social care" (Hamilton, 2014, p. 122). These factors could, in turn, prevent or delay these individuals accessing treatment (Link et al., 1997; Evans-Lacko and Thornicroft, 2010; Rodrigues et al., 2013)

Links between mental ill health and substance use – an overview.

Whilst it is difficult to determine a direct and universal causal relationship between substance use and mental health, there is increasingly more evidence confirming that people who use substances are at an increased risk of developing mental health problems and that, equally, people who have mental health problems are more likely to use substances (Hamilton, 2014). However, formal dual diagnosis of mental disorder and a co-occurring substance use disorder is relatively rare. It is more common for a patient to hold one primary diagnosis, while the other condition is considered secondary. This may have implications for both research and service provision (Todd et al., 2004). On the one hand, studies investigating prevalence using formal diagnostic coding may underestimate the extent of dual diagnosis. On the other hand, a certain primary diagnosis may mean that a patient does not receive adequate treatment for the secondary condition (Todd et al., 2004). It is also worth noting that some literature considers substance use disorders within the umbrella of 'mental health problems' and diagnostic tools like the DSM-5 include substance use disorder as one category of psychiatric disorders.

Chan et al. (2008) reported that approximately 90% of adolescents with substance use disorders also had issues with mental health – the most common including externalising disorders such as attention deficit hyperactivity disorder (ADHD) and conduct disorder. Childhood ADHD is reported to be a major risk factor for the development of substance use disorders due to its direct connection to conduct disorder (van Emmerik-van Oortmerssen et al., 2012), where early symptoms are positively associated with earlier onset and more frequent and intense use of substances in the longer term (Weinberg et al., 1998).

Frem et al. (2017) propose that there may be distinct trajectories leading to these comorbidities, highlighting that women normally report higher anxiety disorders and depression during childhood and adolescence compared to men, having increased likelihood of issues in adult life. Frem et al.

(2017: 52) also suggest that this may be an explanation of why “several studies reported that psychiatric disorders are more likely to predate substance use in women”.

Internalising disorders such as anxiety and depression are also associated with substance use, especially during adolescence, with depression being the second most common comorbid disorder with substance use problems (Fisher et al., 2016) In this context, a 20-year follow-up study of child and adolescents’ depression reported that individuals who suffer from comorbid conduct problems at the initial assessment stage showed increased rates of substance use disorders in adulthood (Fombonne et al., 2001).

Generally, causal relationships between substance use and various types of psychological and mental health disorders have been categorised in three main types: direct causation, indirect causation and common aetiology causation (Goren et al., 2007). Direct causation is where there is a clear link between substance use and mental ill-health, such as self-medication of certain depressive disorders, or psychotic symptoms caused as effects of some drugs (e.g cannabis or amphetamines). Indirect causation is where the effects of one disorder have an impact on other (risk) factors, which, in turn, cause the second disorder. An example is depression caused by financial restraint due to heavy substance use dependence (Goren et al., 2007). Common aetiology causation is when both mental ill-health and substance use disorders are caused by a third, common risk factors, which could be environmental, biological or social (Goren et al., 2007).

Measuring correlations between mental health and substance use

The first attempt of measuring correlations between mental health and substance use was developed by Minkoff (1991), who introduced the quadrant model identifying the potential combinations of mental health and substance use problems (Hamilton, 2014). Mueser et al. (1998) reviewed the evidence in relation to four models with the attempt to identify one single model of dual diagnosis, however being unable to isolate a model and stressing the need for further investigation. As Hamilton (2014: 121) points out, Phillips and Johnson (2010) concluded that, “a unitary and generally applicable explanation of the way this comorbidity develops is unlikely”.

In his review of the most important debates around dual diagnosis, Hamilton (2014) highlights three main theories that are being debated in the existing literature: the supersensitivity model, the self-medication hypothesis and the common factor model.

- Developing the stress vulnerability model proposed by Zubin and Spring (1977), the supersensitivity model argues that the interaction between an individual's biology and their environment increases their vulnerability to developing problems (Mueser et al., 1998). According to Hamilton, this model explains why small or infrequent use of substances can at times cause disproportionate mental health issues. The stress vulnerability model has been also applied to explain mental health and substance use disorders in children and adolescence (i.e. Burton et al., 2014).
- The self-medication hypothesis argues that individuals choose to use substances to ameliorate an unwanted emotion, memory or thought (Khantzian, 1997) as source of short relief.
- Finally, the common factor model argues the existence of a shared cause, such as biological or social factors (Mueser et al., 1998), that raises the vulnerability of the individual to mental health and substance use problems. An example is childhood trauma, which could lead to problematic substance use, which could in turn become a way to block painful emotions related to the trauma. (Gregg et al., 2007).

Both the self-medication and common factor models were employed to explain co-morbid mental health and substance use problems in children and young people and are assumed to possess a moderate evidence-basis (Hawkins, 2009). With regard to the common factor model it was suggested that particularly the relevance of environmental factors may be dependent on the developmental stage of an individual, i.e. parents may be a more important influence for children, whereas peers become more meaningful in older youth. The self-medication hypothesis was also explained in the context of social learning, as older family members or other role models may be demonstrating this kind of coping behaviour in front of adolescents (Hawkins, 2009). The self-medication theory seems to be popular among clinicians, who tend to associate substance use with their patients' need to alleviate unpleasant emotions or side-effects that other prescribed drugs could cause. However, as Hamilton (2014: 121) points out, this seems to be clashing with individuals' perceptions or justifications of their own use, which often include social reasons such as "chill out and have a good time with others" (Gregg et al, 2009) or for pleasure (Goswami et al., 2004).

One of the most studied substances, in relation to its connection to mental health issues, is cannabis. The role of cannabis in psychosis and schizophrenia represents the challenges and complexity in determining a certain causal relation. In a review of evidence, Hamilton stresses that whilst the preoccupation that cannabis could be problematic for mental health already arose in 1772, it is from the 1960s that researchers started investigating this issue in more depth (mainly due to the imminent increase in use) (Hamilton, 2017). In the 1980s Andréasson (1987) found that the risk of developing schizophrenia increased with the greater use of cannabis. Although, this study could not clarify whether cannabis was the main determinant for increasing the chances of developing schizophrenia, or whether cannabis use was caused by emerging schizophrenia in the individuals. A recent study focusing on adolescent cannabis use and its links to later psychosis provided some evidence supporting the notion that cannabis use may contribute to the development of schizophrenia (Mustonen et al., 2018). Results derived from this prospective study showed that cannabis use is associated with an increased risk for psychotic illness even after controlling for prodromal symptoms, parental schizophrenia, and other substance use. Adolescents using cannabis at the age of 15-16 years who also reported prodromal psychotic symptoms were at double the risk for a later diagnosis of schizophrenia. While this study cannot clearly establish causal links between cannabis use and schizophrenia, it indicates that cannabis use may heighten the risk for psychosis under certain conditions (Mustonen et al., 2018). In fact, several authors highlighted that schizophrenia could indeed remain dormant in an individual, until a trigger, such as the use of a psychoactive substance, then produces the symptoms of psychosis or schizophrenia (Hamilton, 2017). Investigating this further, Hall pointed out that schizophrenia and psychosis were not only associated with cannabis, but with alcohol use as well (Hall, 1998). Hall, applying the stress vulnerability model, like Andréasson before him, made an extremely positive contribution to the research, arguing, “that there is a complex interplay between genetics, environment and stress vulnerability” (Hamilton, 2017: 4).

In accordance with the above literature, various Australian and American studies with psychiatric populations have reported that mental health disorders are generally more prevalent among people with alcohol abuse or dependence problems, compared to the general population (Goren et al., 2007). A birth cohort study carried out in New Zealand, found associations between alcohol abuse, depression, anxiety and suicidal behaviour (Fergusson et al., 1994). Moreover, a seven-wave cohort study undertaken with young people (n= 1601 14-15 years old) across 44 schools in the state of Victoria, Australia, concluded that, “frequent cannabis use in teenage girls predicts later depression

and anxiety, with daily users carrying the highest risks" (Patton et al., 2002: 1195), specifically highlighting that "daily use in female teenagers predicted fourfold higher odds of later depression and anxiety (odds ratio 4.2, 1.6 to 11), weekly use a twofold elevation (2.3, 1.3 to 4.2)" (ibid: 1195). The study also considered self-medication with cannabis finding no prospective relation between depression or anxiety and later cannabis use. The same study reported that adolescent depression and anxiety were not predictive of cannabis use (neither weekly nor daily). Evidence also suggests links between certain types of psychostimulants (such as ecstasy) and acute, short-term mental disorders, such as panic, depression and psychosis (Goren et al., 2007).

Whilst studies like this affirm strong associations, the causal relationship between substance use and psychosocial harm and related mental ill health remains difficult to prove. A systematic review of general population longitudinal studies reported fairly consistent associations between cannabis use and lower education and increased reported use of other illicit substances, and less consistent associations between reported cannabis use and psychological health problems and problematic behavior (Macleod et al., 2004). This certainly does not mean that the link does not exist, rather that additional longitudinal or interventional evidence is required. Several studies in the same review also showed similar associations between alcohol and tobacco and observed psychosocial outcomes – once again failing to indicate a causal mechanism. This review also considered reversed causation, again with difficulty in clarifying whether pre-existing psychological problems, or a predisposition to these would be exacerbated by cannabis use, or whether these could lead to a greater inclination to problematic patterns of drug use (Macleod et al., 2004).

Recruitment bias and discounting confounding factors are also reported to be "serious interpretational challenges" and issues in evidencing the existence of a causal link between substance use and mental health issues, since "cannabis use could be a marker rather than a cause of a life trajectory more likely to involve adverse outcomes" (Macleod et al., 2004).

Conclusion

Common Mental Disorders (CMD), that is mental illnesses related to anxiety and depression, are the most prevalent worldwide. There is ample evidence of the prevalence of CMD in children, adolescents and young adults and longitudinal studies have found strong continuity of mental health problems, particularly depression, from childhood or adolescence into adulthood. This review has

highlighted the importance of identifying and responding to the emergence of mental health issues in childhood and adolescence. Furthermore, the mere absence of a mental disorder does not necessarily imply positive mental health and it is necessary to distinguish an approach to assessing mental health in the context of wellbeing and life satisfaction (emphasising positive aspects of functioning) from an approach that screens for mental disorders (a deficit model). Research has documented ways in which numerous factors - socio-economic, gender, age and culture - impact on mental health although the mechanisms by which such factors act as risk or protective factors are complex. Work on risk and protective factors tends to focus on individual, family, school, community and life events; but it is acknowledged that multi-combinations of factors determine the health and wellbeing of young people.

The association between mental health issues and substance use is well established although it is often difficult to determine the causal relationship. The 'supersensitivity' model provides an explanation, based on the interaction between biological and environmental factors, as to why small, infrequent amounts of a substance can lead to mental health problems; the self-medication hypothesis explains substance use as a coping response to alleviate distressing mental health symptoms; the common factor model suggests that a common factor or set of factors increases the individual's vulnerability to both mental health problems and substance use. There appears to be a moderately good evidence base for both the self-medication and common factor models in explaining co-morbid mental health and substance use problems in children and young people.

The review argues that, most commonly, individuals receive a primary diagnosis rather than a diagnosis that recognises the co-occurance of mental disorder and substance use disorder. This has implications for research and service provision. In the second part of this project, we will look at existing interventions for young people experiencing mental health and substance use problems and consider the evidence for 'what works'.

References

Andréasson, S., Engström, A., Allebeck, P., & Rydberg, U. (1987). Cannabis and schizophrenia longitudinal study of swedish conscripts. *The Lancet*, *330*(8574), 1483-1486.

Bask, M. (2015). Externalising and internalising problem behaviour among Swedish adolescent boys and girls. *International Journal of Social Welfare*, *24*(2), 182-192.

Birchwood, M., & Singh, S. (2013). Mental health services for young people: Matching the service to the need. *British Journal of Psychiatry*, 202(S54), S1-S2. doi:10.1192/bjp.bp.112.119149

Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health*, *40*(4), 357-e9.

Bongers, I. L., Koot, H. M., Van Der Ende, J., & Verhulst, F. C. (2004). Developmental trajectories of externalizing behaviors in childhood and adolescence. *Child Development*, *75*(5), 1523-1537.

Böhnke, J. R., & Croudace, T. J. (2016). Calibrating well-being, quality of life and common mental disorder items: psychometric epidemiology in public mental health research. *The British Journal of Psychiatry*, *209*(2), 162-168.

Burton, M., Pavord, E., & Williams, B. (2014). *An introduction to child and adolescent mental health*. Los Angeles: Sage.

Campion, J., Bhui, K., & Bhugra, D. (2012). European Psychiatric Association (EPA) guidance on prevention of mental disorders. *European Psychiatry*, *27*(2), 68-80.

Chan, Y. F., Dennis, M. L., & Funk, R. R. (2008). Prevalence and comorbidity of major internalizing and externalizing problems among adolescents and adults presenting to substance abuse treatment. *Journal of Substance Abuse Treatment*, *34*(1), 14-24.

Cheng, T. L., Johnson, S. B., & Goodman, E. (2016). Breaking the intergenerational cycle of disadvantage: the three generation approach. *Pediatrics*, e20152467.

Clark, L. A., Cuthbert, B., Lewis-Fernández, R., Narrow, W. E., & Reed, G. M. (2017). Three approaches to understanding and classifying mental disorder: ICD-11, DSM-5, and the National Institute of Mental Health's Research Domain Criteria (RDoC). *Psychological Science in the Public Interest*, 18(2), 72-145.

Commonwealth of Australia (1996). *National mental health report*, Canberra: Australian Government Publishing Service.

Copeland, W. E., Shanahan, L., Costello, E. J., & Angold, A. (2009). Childhood and adolescent psychiatric disorders as predictors of young adult disorders. *Archives of General Psychiatry*, *66*(7), 764-772.

Dadds, M. R., Mullins, M. J., McAllister, R. A., & Atkinson, E. (2003). Attributions, affect, and behavior in abuse-risk mothers: A laboratory study. *Child Abuse & Neglect*, 27(1), 21-45.

Deighton, J., Croudace, T., Fonagy, P., Brown, J., Patalay, P., & Wolpert, M. (2014). Measuring mental health and wellbeing outcomes for children and adolescents to inform practice and policy: a review of child self-report measures. *Child and Adolescent Psychiatry and Mental Health*, *8*(1), 14.

Dekker, M. C., Ferdinand, R. F., Van Lang, N. D., Bongers, I. L., Van Der Ende, J., & Verhulst, F. C. (2007). Developmental trajectories of depressive symptoms from early childhood to late adolescence: gender differences and adult outcome. *Journal of Child Psychology and Psychiatry*, *48*(7), 657-666.

Durlak, J. A. (1998). Common risk and protective factors in successful prevention programs. *American Journal of Orthopsychiatry*, 68(4), 512-520.

Durlak, J. A., & Wells, A. M. (1997). Primary prevention mental health programs for children and adolescents: A meta-analytic review. *American Journal of Community Psychology*, 25(2), 115-152.

Evans-Lacko, S., & Thornicroft, G. (2010). Stigma among people with dual diagnosis and implications for health services. *Advances in Dual Diagnosis*, *3*(1), 4-7.

Falissard, B. (2016). Positive Mental Health—What Is It, How Is It Recognized, and Can It Be Achieved?. In Hodes, M., & Gau, S. S. F. (Eds.), *Positive Mental Health, Fighting Stigma and Promoting Resiliency for Children and Adolescents* (pp. 3-13).

Fergusson, D. M., Lynskey, M. T., & Horwood, L. J. (1994). Alcohol consumption and associated problems in a birth cohort of 15 year olds. *New Zealand Medical Journal*, *107*(977), 167-170.

Fisher, S., Sheehan, C., & Malone, C., M. (2016) Integrated Mental Health and Substance Use Interventions in Secondary Schools, *National Association of School Psychologists*, 45 (2), 24-26.

Fitzsimons, E., Goodman, A., Kelly, E., & Smith, J. P. (2017). Poverty dynamics and parental mental health: Determinants of childhood mental health in the UK. *Social Science & Medicine*, *175*, 43-51.

Fombonne, E., Wostear, G., Cooper, V., Harrington, R., & Rutter, M. (2001). The Maudsley long-term follow-up of child and adolescent depression. *The British Journal of Psychiatry*, *179*(3), 210-217.

Frem, Y., Torrens, M., Domingo-Salvany, A., Gilchrist, G., (2017). "Gender differences in lifetime psychiatric and substance use disorders among people who use substances in Barcelona, Spain", *Advances in Dual Diagnosis*, Vol. 10 Issue: 2, pp.45-56, https://doi.org/10.1108/ADD-01-2017-0002

Fryers, T., & Brugha, T. (2013). Childhood determinants of adult psychiatric disorder. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, *9*, 1.

Fryers, T., Melzer, D., Jenkins, R., & Brugha, T. (2005). The distribution of the common mental disorders: social inequalities in Europe. *Clinical Practice and Epidemiology in Mental Health*, *1*(1), 14.

Goebert, D., Else, I., Matsu, C., Chung-Do, J., & Chang, J. Y. (2011). The impact of cyberbullying on substance use and mental health in a multiethnic sample. *Maternal and Child Health Journal*, *15*(8), 1282-1286.

Goodman, R., Ford, T., Simmons, H., Gatward, R., & Meltzer, H. (2003). Using the Strengths and Difficulties Questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *International Review of Psychiatry*, *15*(1-2), 166-172.

Goodman, A., Lamping, D. L., & Ploubidis, G. B. (2010). When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the Strengths and Difficulties Questionnaire (SDQ): data from British parents, teachers and children. *Journal of Abnormal Child Psychology*, 38(8), 1179-1191.

Goren, N., Mallick, J., & Olsson, C. R. (2007). Prevention and early intervention of coexisting mental health and substance use issues. *Prevention Research Quarterly*, 3, 1-20.

Goswami, S., Mattoo, S. K., Basu, D., & Singh, G. (2004). Substance-Abusing Schizophrenics: Do They Self-Medicate?. *The American Journal on Addictions*, *13*(2), 139-150.

Gregg, L., Barrowclough, C., & Haddock, G. (2007). Reasons for increased substance use in psychosis. *Clinical Psychology Review*, 27, 494-510.

Gregg, L., Haddock, G., & Barrowclough, C. (2009). Self-reported reasons for substance use in schizophrenia: a Q methodological investigation. *Mental Health and Substance Use: Dual Diagnosis*, *2*(1), 24-39.

Haggett, A. (2014). Masculinity and mental health-The long view. *Psychologist*, 27(6), 426-429.

Hall, W. D. (1998). Cannabis use and psychosis. *Drug and Alcohol Review*, *17*(4), 433-444.

Hamblin, E. (2016). Gender and children and young people's emotional and mental health: manifestations and responses A rapid review of the evidence'. *National Children's Bureau*, 20-2.

Hamilton, I. (2014). The 10 most important debates surrounding dual diagnosis. *Advances in Dual Diagnosis*, *7*(3), 118-128.

Hamilton, I. (2017). Cannabis, psychosis and schizophrenia: unravelling a complex interaction. *Addiction*, *112*(9), 1653-1657.

Harkness, K. L., Alavi, N., Monroe, S. M., Slavich, G. M., Gotlib, I. H., & Bagby, R. M. (2010). Gender differences in life events prior to onset of major depressive disorder: The moderating effect of age. *Journal of Abnormal Psychology*, 119(4), 791.

Hawkins, E. H. (2009). A tale of two systems: Co-occurring mental health and substance abuse disorders treatment for adolescents. *Annual Review of Psychology*, 60, 197-227.

Headey, B., Kelley, J., & Wearing, A. (1993). Dimensions of mental health: life satisfaction, positive affect, anxiety and depression. *Social Indicators Research*, *29*(1), 63-82.

Johnston, D. W., Schurer, S., & Shields, M. A. (2013). Exploring the intergenerational persistence of mental health: Evidence from three generations. *Journal of Health Economics*, *32*(6), 1077-1089.

Khantzian, E.J. (1997). The self-medication hypothesis of substance use disorders: a reconsideration and recent applications, *Harvard Review of Psychiatry*, 4, 231-44.

Kessler, R. C., Angermeyer, M., Anthony, J. C., De Graaf, R. O. N., Demyttenaere, K., Gasquet, I., ... & Kawakami, N. (2007). Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry*, *6*(3), 168.

Keyes, C. L., Dhingra, S. S., & Simoes, E. J. (2010). Change in level of positive mental health as a predictor of future risk of mental illness. *American Journal of Public Health*, *100*(12), 2366-2371.

Kovacs, M., Obrosky, S., & George, C. (2016). The course of major depressive disorder from childhood to young adulthood: recovery and recurrence in a longitudinal observational study. *Journal of Affective Disorders*, *203*, 374-381.

Kuehner, C. (2017). Why is depression more common among women than among men?. *The Lancet Psychiatry*, 4(2), 146-158.

Lemstra, M., Neudorf, C., D'arcy, C., Kunst, A., Warren, L. M., & Bennett, N. R. (2008). A systematic review of depressed mood and anxiety by SES in youth aged 10-15 years. *Canadian Journal of Public Health/Revue Canadienne de Sante'e Publique*, 125-129.

Li, S. H., & Graham, B. M. (2017). Why are women so vulnerable to anxiety, trauma-related and stress-related disorders? The potential role of sex hormones. *The Lancet Psychiatry*, 4(1), 73-82.

Lindert, J., Bain, P. A., Kubzansky, L. D., & Stein, C. (2015). Well-being measurement and the WHO health policy Health 2010: systematic review of measurement scales. *The European Journal of Public Health*, *25*(4), 731-740.

Link, B. G., Struening, E. L., Rahav, M., Phelan, J. C., & Nuttbrock, L. (1997). On stigma and its consequences: evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse. *Journal of Health and Social behavior*, 177-190.

Loth, A. K., Drabick, D. A., Leibenluft, E., & Hulvershorn, L. A. (2014). Do childhood externalizing disorders predict adult depression? A meta-analysis. *Journal of Abnormal Child Psychology*, *42*(7), 1103-1113.

Loxley, W., Toumbourou, J., Stockwell, T., Haines, B., Scott, K., Godfrey, C., ... & Marshall, J. (2004*). The prevention of substance use, risk and harm in Australia: a review of the evidence.* Melbourne: The National Drug Research Institute and the Centre for Adolescent Health.

Lund, C., Breen, A., Flisher, A. J., Kakuma, R., Corrigall, J., Joska, J. A., ... & Patel, V. (2010). Poverty and common mental disorders in low and middle income countries: a systematic review. *Social Science & Medicine*, *71*(3), 517-528.

Macleod, J., Oakes, R., Copello, A., Crome, I., Egger, M., Hickman, M., ... & Smith, G. D. (2004). Psychological and social sequelae of cannabis and other illicit drug use by young people: a systematic review of longitudinal, general population studies. *The Lancet*, *363*(9421), 1579-1588.

Minkoff, K. (1991). Program components of a comprehensive integrated care system for serious mentally ill patients with substance disorders. In Minkoff, K. & Drake, R.E. (Eds), *Dual Diagnosis of Major Mental Illness and Substance Disorder (New Directions for Mental Health Services, No 50)*, San Francisco: Jossey-Bass.

Mueser, K. T., Drake, R. E., & Wallach, M. A. (1998). Dual diagnosis: a review of etiological theories. *Addictive Behaviors*, 23(6), 717-734.

Mustonen, A., Niemelä, S., Nordström, T., Murray, G. K., Mäki, P., Jääskeläinen, E., & Miettunen, J. (2018). Adolescent cannabis use, baseline prodromal symptoms and the risk of psychosis. *The British Journal of Psychiatry*, 212(4), 227-233.

NatCen Social Research (2013). *Predictors of Wellbeing.* Retrieved from www.natcen.ac.uk/study/predictors-of-wellbeing

National Institute for Care Excellence (2011). *Common mental health problems: identification and pathways to care* (Clinical guideline CG 123). Retrieved from https://www.nice.org.uk/guidance/cg123

NHS Digital (2016). *Adult Psychiatric Morbidity Survey: Survey of Mental Health and Wellbeing, England, 2014*. Retrieved from https://digital.nhs.uk/data-and-information/publications/statistical/adult-psychiatric-morbidity-survey/adult-psychiatric-morbidity-survey-survey-of-mental-health-and-wellbeing-england-2014

Needle, R. H., Su, S. S., & Doherty, W. J. (1990). Divorce, remarriage, and adolescent substance use: A prospective longitudinal study. *Journal of Marriage and the Family*, 157-169.

Office for National Statistics (2015). *Measuring National Well-being: Insights into children's mental health and well-being*. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/2015-10-20

Oram, S., Khalifeh, H., & Howard, L. M. (2017). Violence against women and mental health. *The Lancet Psychiatry*, 4(2), 159-170.

Parfitt, G., Pavey, T., & Rowlands, A. V. (2009). Children's physical activity and psychological health: the relevance of intensity. *Acta Paediatrica*, *98*(6), 1037-1043.

Patton, G. C., Coffey, C., Carlin, J. B., Degenhardt, L., Lynskey, M., & Hall, W. (2002). Cannabis use and mental health in young people: cohort study. *BMJ*, *325*(7374), 1195-1198.

Phillips, P. & Johnson, S. (2010). Explanatory models for dual diagnosis. In Phillips, P., McKeown, O., & Sandford, T. (Eds), *Dual Diagnosis Practice in Context*, Oxford: Wiley-Blackwell.

Pies, R. (2007). How "objective" are psychiatric diagnoses?:(guess again). *Psychiatry (Edgmont)*, *4*(10), 18.

Pitchforth, J., Fahy, K., Ford, T., Wolpert, M., Viner, R. M., & Hargreaves, D. S. (2017). G118 Mental health and well-being trends among children and young people in the UK, 1995–2014; analysis of repeated cross-sectional national health surveys. *Archives of Disease in Childhood*, 102, A48-A49

Rice, S. M., Purcell, R., & McGorry, P. D. (2018). Adolescent and young adult male mental health: Transforming system failures into proactive models of engagement. *Journal of Adolescent Health*, 62(3), S9-S17.

Rodrigues, S., Serper, M., Novak, S., Corrigan, P., Hobart, M., Ziedonis, M., & Smelson, D. (2013). Self-stigma, self-esteem, and co-occurring disorders. *Journal of Dual Diagnosis*, *9*(2), 129-133.

Short, J. L. (1998). Predictors of substance use and mental health of children of divorce: A prospective analysis. *Journal of Divorce & Remarriage*, *29*(1-2), 147-166.

Slade, M. (2010). Mental illness and well-being: the central importance of positive psychology and recovery approaches. *BMC Health Services Research*, 10(1), 26.

Steel, Z., Marnane, C., Iranpour, C., Chey, T., Jackson, J. W., Patel, V., & Silove, D. (2014). The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013. *International Journal of Epidemiology*, 43(2), 476-493.

Steinberg, L. (1987). Single parents, stepparents, and the susceptibility of adolescents to antisocial peer pressure. *Child Development*, 269-275.

The Children Society (2015). *The Good Childhood Report*. Retrieved from https://www.childrenssociety.org.uk/sites/default/files/TheGoodChildhoodReport2015.pdf

The Lancet (2014). Mental health and wellbeing in children and adolescents, *The Lancet*, 383, 1183.

Todd, J., Green, G., Harrison, M., Ikuesan, B. A., Self, C., Baldacchino, A., & Sherwood, S. (2004). Defining dual diagnosis of mental illness and substance misuse: some methodological issues. *Journal of Psychiatric and Mental Health Nursing*, 11(1), 48-54.

UNICEF (2013). Child wellbeing in rich countries. Retrieved from https://www.unicef-irc.org/publications/pdf/rc11_eng.pdf

van Emmerik-van Oortmerssen, K., van de Glind, G., van den Brink, W., Smit, F., Crunelle, C. L., Swets, M., & Schoevers, R. A. (2012). Prevalence of attention-deficit hyperactivity disorder in substance use disorder patients: a meta-analysis and meta-regression analysis. *Drug & Alcohol Dependence*, *122*(1), 11-19.

Vos, T., Barber, R. M., Bell, B., Bertozzi-Villa, A., Biryukov, S., Bolliger, I., ... & Duan, L. (2015). Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, *386*(9995), 743-800.

Weich, S., Brugha, T., King, M., McManus, S., Bebbington, P., Jenkins, R., ... & Stewart-Brown, S. (2011). Mental well-being and mental illness: findings from the Adult Psychiatric Morbidity Survey for England 2007. *The British Journal of Psychiatry*, *199*(1), 23-28.

Weinberg, N. Z., Rahdert, E., Colliver, J. D., & Glantz, M. D. (1998). Adolescent substance abuse: A review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry*, *37*(3), 252-261.

Whiteford, H. A., Degenhardt, L., Rehm, J., Baxter, A. J., Ferrari, A. J., Erskine, H. E., ... & Burstein, R. (2013). Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. *The Lancet*, *382*(9904), 1575-1586.

Wilkins, D. & Kemple, M. (2011). *Delivering male: Effective practice in male mental health*. London: Men's Health Forum.

Wickham, S., Whitehead, M., Taylor-Robinson, D., & Barr, B. (2017). The effect of a transition into poverty on child and maternal mental health: a longitudinal analysis of the UK Millennium Cohort Study. *The Lancet Public Health*, *2*(3), e141-e148.

Williams, B., & Pow, J. (2007). Gender differences and mental health: An exploratory study of knowledge and attitudes to mental health among Scottish teenagers. *Child and Adolescent Mental Health*, 12(1), 8-12.

World Health Organisation (2014). *Social Determinant of Mental Health*. Retrieved from http://apps.who.int/iris/bitstream/handle/10665/112828/9789241506809_eng.pdf;jsessionid=F8B6F69E1E8DD95900E573FC7A5A4E99?sequence=1

Yap, M. B., Cheong, T. W., Zaravinos-Tsakos, F., Lubman, D. I., & Jorm, A. F. (2017). Modifiable parenting factors associated with adolescent alcohol misuse: a systematic review and meta-analysis of longitudinal studies. *Addiction*, 112(7), 1142-1162.

Zubin, J. & Spring, B. (1977). Vulnerability: a new view of schizophrenia. *Journal of Abnormal Psychology*, 86, 103-26.