

Final report

**Adapting best practice guidelines for
the prevention, screening
and treatment of substance misuse
in adolescents to the Belgian context
(ADAPTE-youth)**

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Abstract

Alcohol and drug misuse continues to be an important problem amongst adolescents worldwide. In order for Belgian policy makers to efficiently deal with such problems, the extent of alcohol and drug misuse among young people, including environmental factors impacting on this, should be clearly documented. It further requires an understanding on what constitutes 'good practice' in prevention, screening and treatment of adolescents. Aims of this project were threefold; (1) to generate a comprehensive overview of data on the prevalence of drug use among young people and the protective and risk factors associated with drug use, including a subgroup analysis on children living with misusing parents, (2) to provide a descriptive overview of Belgian organizations and initiatives working with adolescents in the area of substance misuse, and (3) to develop context-specific, best practice guidelines on the prevention, screening, assessment and treatment of alcohol and drug misuse in adolescents using the ADAPTE methodology. In what follows, we briefly highlight some of our core findings.

An analysis of the available data on adolescent substance use and misuse in Belgium indicate that most of them have experience with alcohol and some also with cannabis, although the latter is more prevalent in older adolescents. From a European view, the substance use behavior of Belgian adolescents is relatively typical. Normative influences from the context or environment, i.e. having friends misusing substances were found to be a robust risk factor for drug misuse. Overall, the findings support the need to invest in programs that may prevent the early onset and continuation of substance use and misuse by adolescents in Belgium. Qualitative studies conducted in parallel with this research project suggest the need for specific medical care for those adolescents already in treatment for a substance related disorder.

Our prevalence estimates on parental substance misuse indicate that 12% of Belgian children live with a parent that misuses alcohol whereas less than 1% of these children live with parents that use illicit drugs. Parental alcohol misuse tends to be adversely related to children's health and health behavior, although strong significant correlations fail to appear. Some health outcomes at household level (i.e. being subject to passive smoking and postponing health care at household level) are significantly related with parental alcohol misuse, which may have a negative impact on children's health. The literature review indicated that parental substance use is associated with various health and psychosocial risks for children. In order to provide appropriate prevention and support for children of substance misusing parents, parental substance use should become a topic of discussion

and scientific research. Furthermore, a supportive and continuing approach towards these families is preferred above a directive and controlling approach.

We further developed a descriptive map of stakeholders involved in prevention and treatment of adolescents misusing alcohol and drugs in Belgium and questioned them about their services and their attitude towards guidelines. Early intervention, harm reduction and re-socialisation for drug using adolescents are scarce in Belgium. The majority of the stakeholders in our sample had a positive attitude towards the use of guidelines, although they acknowledge that recommendations targeting adolescents are scarce.

Three evidence-based practice guidelines for adolescent substance misuse were developed; one on the treatment of alcohol misuse, one on the treatment of drug misuse and one on the prevention of alcohol and drug misuse. The ADAPTE methodology was used to adapt existing, international guidelines to a local, Belgian context. To prepare for this process, we conducted a comprehensive search for relevant evidence-based guidelines. We identified 32 guidelines addressing substance misuse in adolescents, including nine of high quality. Of these, four guidelines provided recommendations specific for adolescents while the remaining guidelines focused on a broader population including adolescents. The quality of the guidelines was hampered by a lack of evidence specifically for adolescents. Also, it was often unclear which evidence underlies the recommendations.

Experts from various disciplines and domains were recruited to assist us during the adaptation process. We also recruited family members of persons with an alcohol or drug problem. The experts evaluated 140 recommendations on treatment and 24 on prevention. Those that were judged to be relevant and applicable for the Belgian context were selected for our guideline. The guidelines were drafted and reviewed by the panel. Subsequently, we carried out an external review of the draft guidelines to assess the applicability of the recommendations among methodological experts, clinical experts, adolescents and parents of children who misuse drugs. The results were used to fine-tune the guidelines.

Our ADAPTE-youth project was a challenging task, due to the broadness of the field including various domains, disciplines and topical areas. We experienced the adaptation process as promising but time-consuming. Some of the practical issues to be overcome include the tension between (a) the need to be efficient versus the demand to be rigorous, (b) the results from scientific studies versus the needs of professionals who work with these youngsters on a daily basis. The available international guidelines did not answer all of the questions formulated by the panel. This is a limitation of guideline adaptation. Also, clear instructions on how to valorize the input of the experts during the panel meetings and the

stakeholders during the external review phase in the guidelines need to be developed as these are not provided by the ADAPTE working group.

Abstract

L'abus d'alcool et de drogues demeure un problème important parmi les adolescents partout dans le monde. Pour que les responsables politiques belges puissent traiter efficacement ce problème, il convient de clairement documenter son ampleur ainsi que les facteurs environnementaux impliqués. Il faut également savoir en quoi consistent les « bonnes pratiques » en matière de prévention, de dépistage et de traitement chez les adolescents. Les objectifs du projet sont triples : (1) générer une vue complète des données concernant la prévalence de la consommation de drogues parmi les jeunes et les facteurs protecteurs et facteurs de risque associés, y compris une analyse de sous-groupe chez les enfants vivant avec des parents qui font une consommation abusive de substances, (2) fournir un aperçu descriptif des organisations et initiatives belges travaillant avec des adolescents dans le domaine de l'abus de substances, et (3) développer, au moyen de la méthodologie ADAPTE, des guides de bonne pratique, spécifiques au contexte, sur la prévention, le dépistage, l'évaluation et le traitement de l'abus d'alcool et de drogues parmi les adolescents.

Une analyse des données disponibles concernant la consommation et l'abus de substances parmi les adolescents belges a indiqué que la plupart d'entre eux ont l'expérience de l'alcool et certains, celle du cannabis, dont la prévalence est plus importante chez les adolescents plus âgés. Par rapport à la situation européenne, le comportement des adolescents belges en matière de consommation de substances est relativement typique. Les influences normatives provenant du contexte ou de l'environnement, c'est-à-dire la présence d'amis qui abusent de substances, se sont avérées des facteurs de risque importants d'abus de drogues. Dans l'ensemble, les résultats soulignent la nécessité d'investir, en Belgique, dans des programmes qui pourraient empêcher les adolescents de commencer ou continuer à consommer des substances et à en abuser. Les études qualitatives menées en parallèle à ce projet de recherche suggèrent qu'il est nécessaire d'assurer une prise en charge médicale spécifique des adolescents déjà traités pour un trouble associé à la consommation de substances.

Nos estimations concernant la prévalence de l'abus de substances par les parents indiquent que, parmi les enfants belges, 12 % vivent avec un parent qui abuse de l'alcool tandis que moins de 1 % vivent avec un parent qui consomme des drogues illicites. La santé des enfants et les comportements de santé tendent à être en rapport inverse avec l'abus d'alcool par les parents, bien qu'on n'observe pas de corrélation fortement significative. Un lien significatif a été observé entre l'abus d'alcool par les parents et certains résultats des ménages en matière de santé (à savoir le tabagisme passif et l'habitude du ménage à

retarder le recours aux soins de santé). Cela pourrait avoir une influence négative sur la santé des enfants. La revue de la littérature scientifique a indiqué que la consommation de substances par les parents est associée à divers risques médicaux et psychosociaux pour les enfants en croissance. Si l'on veut améliorer la prise en charge de ces enfants, la consommation de substances par les parents doit être prise comme sujet de discussion. En outre, il vaut probablement beaucoup mieux adopter une approche supportive et continue à l'égard de ces familles plutôt qu'une approche de contrôle de l'abus de substances dans les familles.

Nous avons aussi développé un plan cartographique des intervenants impliqués dans la prévention et le traitement pour les adolescents qui font une consommation abusive ou sont dépendants de l'alcool ou de drogues en Belgique et eux questionner sur leurs services et sur l'attitude à l'égard des guides de bonne pratique. En Belgique, on trouve peu d'offre pour l'intervention précoce, la réduction des dommages et la réintégration sociale des adolescents qui consomment de la drogue. La plupart des organisations belges ont généralement une attitude positive vis-à-vis de l'utilisation des guides de bonne pratique, mais ils reconnaissent que les recommandations visant les adolescents sont rares.

Trois guides de bonne pratique basés sur les faits probants concernant l'abus de substances par les adolescents ont été développés : un pour le traitement de l'abus d'alcool, un pour le traitement de l'abus de drogues et un pour la prévention de l'abus d'alcool et de drogues. Nos guides de bonne pratique ont été élaborés au moyen de la méthodologie ADAPTE. Cette méthodologie vise à développer des guides de bonne pratique de manière efficace en adaptant des guides de bonne pratique de grande qualité existants à un nouveau contexte local. Pour préparer ce processus, nous avons mené une recherche complète visant à identifier les guides de bonne pratique pertinents. Nous avons répertorié 32 guides de bonne pratique traitant de l'abus de substances parmi les adolescents ; neuf étaient de grande qualité. Parmi ces derniers, quatre comportaient des recommandations spécifiques pour les adolescents, tandis que les autres visaient une population plus large incluant les adolescents. La qualité des guides de bonne pratique était affectée par un manque de faits probants, en particulier pour les adolescents, et par le manque de clarté concernant le lien entre les faits probants et les recommandations.

Des experts de diverses disciplines et de divers domaines ont été recrutés pour apporter leur assistance durant le processus d'adaptation. Nous avons aussi recruté des parents d'adolescents ayant un problème d'alcool ou de drogues. Les experts ont évalué 140 recommandations sur le traitement et 24 sur la prévention. Les recommandations considérées comme pertinentes et applicables dans le contexte belge ont été sélectionnées

pour notre guide de bonne pratique. Une version provisoire des guides de bonne pratique a été rédigée et examinée par le panel. Puis, pour évaluer la possibilité d'appliquer les recommandations, nous avons soumis les guides de bonne pratique provisoires pour évaluation externe à des experts en matière méthodologique, des experts en matière clinique, des adolescents et des parents d'enfants faisant une consommation abusive de drogues. Les résultats ont été utilisés pour l'élaboration de la version finale des guides de bonne pratique.

Le projet ADAPTE-youth a été une entreprise difficile, probablement en raison de l'ampleur du sujet, qui comporte divers domaines et englobe plusieurs disciplines et diverses thématiques. Notre expérience montre que le processus d'adaptation est prometteur mais qu'il demande beaucoup de temps. Les problèmes pratiques à surmonter proviennent notamment de la tension entre 1) la nécessité d'être efficace et rigoureux, 2) les résultats des études scientifiques et 3) les besoins des professionnels travaillant quotidiennement avec ces jeunes. Les guides de bonne pratique internationaux disponibles n'ont pas répondu à toutes les questions formulées par le panel, ce qui conduit à penser que l'adaptation des guides de bonne pratique a ses limites. Par ailleurs, le groupe de travail ADAPTE n'a pas donné d'instructions claires sur la manière de valoriser l'apport des experts pendant les réunions du panel et celui des intervenants pendant la phase d'examen externe des guides de bonne pratique.

Abstract

Alcohol- en ander drugmisbruik is een belangrijk probleem onder jongeren wereldwijd. Voordat Belgische beleidsmakers efficiënt kunnen omgaan met deze problematiek dient de omvang van het alcohol- en ander drugmisbruik onder jongeren, inclusief omgevingsfactoren die hierop van invloed zijn, duidelijk te worden gedocumenteerd. Voorts vereist het begrip van wat 'best practice' is in de preventie, screening en behandeling van jongeren. De doelen van dit project waren drievoudig: (1) Het maken van een overzicht van data over de prevalentie van alcohol- en drugmisbruik onder jongeren en de beschermende en risicofactoren die samenhangen met druggebruik, inclusief een subgroep analyse over kinderen die samenwonen met ouders die middelen misbruiken, (2) Het maken van een beschrijvend overzicht over de Belgische organisaties en initiatieven die zich bezig houden met jongeren en alcohol- en/of ander drugmisbruik, en (3) Het ontwikkelen van context-specifieke, best-practice richtlijnen over de preventie, screening, assessment en behandeling van alcohol- en ander drugmisbruik bij adolescenten met behulp van de ADAPTE methodiek. In wat volgt geven we een overzicht van de belangrijkste resultaten.

Uit de analyse van de beschikbare gegevens over drugmisbruik door Belgische adolescenten blijkt dat de meeste jongeren ervaring met alcohol hebben. Sommigen hebben ook ervaring met cannabis, en dit betreft veelal de oudere adolescenten. Vanuit een Europees perspectief is het middelengebruik van de Belgische jongeren relatief typisch voor de hedendaagse jeugd. De meest robuuste risicofactor voor druggebruik bleken normatieve omgevingsinvloeden, dat wil zeggen vrienden hebben die middelen misbruiken. Over het algemeen ondersteunen de bevindingen de noodzaak in België te investeren in programma's die gericht zijn op het uitstellen van druggebruik bij jongeren die nog niet gebruiken en het verminderen van druggebruik bij jongeren die al wel gebruiken. Kwalitatieve studies uitgevoerd in parallel met dit onderzoeksproject suggereren dat specifieke medische zorg voor jongeren die al in behandeling zijn voor een middelengebonden aandoening noodzakelijk is.

Onze prevalentie cijfers van ouders die middelen misbruiken geven aan dat 12% van de Belgische kinderen samenwoont met een ouder die alcohol misbruikt, terwijl minder dan 1% van deze kinderen samenwoont met een ouder die drugs misbruikt. Alcoholmisbruik door ouders lijkt negatief samen te hangen met de gezondheid en gezondheidsgedrag van kinderen, hoewel de associaties niet significant waren. Sommige uitkomsten op het niveau van het huishouden (bijvoorbeeld blootstelling aan passief roken en uitstellen van zorg) waren significant gerelateerd aan alcoholmisbruik door ouders. Deze variabelen kunnen op

hun beurt een negatieve impact hebben op de gezondheid van kinderen. Uit de literatuurreview bleek dat middelenmisbruik door ouders geassocieerd is met diverse gezondheids- of psychosociale risico's voor kinderen. Om de zorg voor deze kinderen te verbeteren zou middelenmisbruik door ouders onderwerp van discussie moeten worden. Een positieve, ondersteunende benadering naar de families toe is waarschijnlijk te verkiezen boven een meer controlerende benadering van het middelenmisbruik in families.

Vervolgens hebben we een inventarisatie van het beschikbare aanbod inzake de behandeling en preventie van middelengebruik bij jongeren uitgevoerd en hen bevraagd over het gebruik van en hun attitude tegenover richtlijnen. Vroeg-interventie, harm reduction en re-socialisatie voor drugmisbruik bij jongeren is schaars in België. De meeste respondenten uit onze sample hebben een positieve houding tegenover het gebruik van richtlijnen, hoewel ze aangeven dat de aanbevelingen specifiek voor jongeren schaars zijn.

Drie evidence-based praktijk richtlijnen voor middelenmisbruik bij jongeren werden ontwikkeld, één over de behandeling van alcoholmisbruik, één over de behandeling van drugmisbruik en één over de preventie van alcohol- en drugmisbruik. Er werd gebruik gemaakt van de ADAPTE methodiek. Deze is bedoeld om de efficiëntie van richtlijnontwikkeling te verhogen door bestaande richtlijnen van goede kwaliteit aan te passen naar een andere -in dit geval de Belgische- lokale context. Als voorbereiding op het adaptatieproces voerden we een systematische review uit om relevante richtlijnen van goede kwaliteit te identificeren. We vonden 32 richtlijnen over middelenmisbruik bij adolescenten, waarvan 9 van hoge kwaliteit. Vier richtlijnen bevatten aanbevelingen specifiek voor jongeren, terwijl de andere richtlijnen zich op een bredere populatie, inclusief jongeren, richtte. De kwaliteit van de richtlijnen was suboptimaal door een gebrek aan evidentie specifiek voor jongeren en omdat het verband tussen evidentie en aanbevelingen onduidelijk was.

We rekruteerden experts van diverse disciplines en domeinen om ons te helpen met het adaptatieproces. We rekruteerden ook familieleden van personen die middelen misbruiken. Deze experts beoordeelden 140 aanbevelingen over behandeling en 24 over preventie. Die aanbevelingen die relevant en toepasbaar zijn voor de Belgische context werden weerhouden voor onze richtlijn. De richtlijnen werden samengesteld door het projectteam en vervolgens nog eens becommentarieerd door het panel van experts. Daarna voerden we een externe review uit van de voorlopige richtlijnen om de toepasbaarheid van de aanbevelingen te evalueren onder methodologische experts, klinische of preventie experts, jongeren en ouders van jongeren die drugs misbruiken. De resultaten werden gebruikt om de richtlijnen beter af te stemmen op de Belgische context.

Het ADAPTE-youth project was een uitdagend project, wat waarschijnlijk gerelateerd was aan de breedte van het veld dat werd bestreken, inclusief diverse domeinen, disciplines en onderwerpen. Het adaptatieproces werd als veelbelovend maar ook als tijdsintensief ervaren. Enkele praktische problemen die aangepakt moeten worden zijn het spanningsveld tussen efficiëntie en wetenschappelijke kwaliteit en het spanningsveld tussen de resultaten van de wetenschappelijke studies en de behoeften van praktijkwerkers die dagelijks met deze jongeren werken. De geselecteerde richtlijnen gaven geen antwoord op alle vragen van het panel, omdat de informatie in de bronrichtlijnen niet beschikbaar was. Dit is een beperking van een adaptatieproces. Ook zou er meer duidelijkheid moeten komen over hoe de feedback van het panel en de belanghebbenden tijdens de externe review in de richtlijn opgenomen zouden kunnen worden.

1. Introduction

This report is the result of a close collaboration between researchers sharing the concern of how to deal efficiently with problems of substance misuse in adolescents. To further develop our understanding on what constitutes 'good practice' in preventing, screening and treating our young generation of citizens, we need to document the extent of drug and alcohol misuse among young people, as well as factors leading up this misuse. Alcohol and drug misuse continues to be an important problem amongst adolescents worldwide. Previous research revealed that at the age of 16 years already up to 90% of all European youngsters have consumed alcohol. In the academic year 2010-2011, 8.5% of our high school youngsters reported having used cannabis that year, a phenomenon that seems to increase with age.

Part of the scientific data we collected in our own Belgian context as part of this research project suggests that the governmental support aiming to respond to the general societal challenge of substance misuse was efficient to a certain extent. We noticed a slight decrease in the prevalence of alcohol use and the number of alcohol related hospital admissions among adolescents, a trend that can be confirmed by other studies conducted by e.g. the non-profit organization for alcohol and other drug problems. Several of our youngsters appear to live with a parent that misuses alcohol, putting them at unknown health risks. We also noted that Belgium still has one of the highest rates of primary cannabis users (all ages) entering the treatment system, with almost half of the adolescents having used cannabis at least once in their lives. Belgian adolescents also reported a higher use of amphetamines compared to their European fellows, a proportion of them entering our health care system with a number of potential co-morbidities and contextual factors that need to be dealt with by our health care providers. This calls for the need to invest in and roll-out targeted prevention and treatment interventions that have proven to be effective in reducing alcohol and drug misuse. The role of prevention in decreasing the costs related to hospital and specialized care admission has only marginally been researched in the past. Various studies show that adolescents are extra vulnerable for substance misuse and to harmful effects of this misuse. Due to their developmental stage adolescents are more likely to experiment with substances and this misuse is likely to cause damage to adolescent brains. Furthermore, substance misuse among adolescents increases risk of substance misuse as adult. Therefore a timely intervention is needed.

In an effort to describe the existing specialized care for what we consider a vulnerable population we identified all organizations targeting adolescents and queried a sample of

them on the organization of their services and on what they had on offer for youngsters. While a small number of organizations offer specialized care to adolescents, practitioners involved in these institutes believe that treatment options for drug using adolescents are not sufficiently developed in Belgium, particularly in the area of early intervention, harm reduction and re-socialization. We also inventoried their perceptions on working with guidelines that would carry the potential to assist them in decision making processes on prevention, screening and treating adolescents. Overall, practitioners were supportive, however critical in pointing out that many of the interventions offered to youngsters lack a methodologically sound evidence base. Implementing a coherent set of guiding principles to facilitate the care delivered to adolescents misusing alcohol and drugs guideline adaptation process is further hampered by the fragmentation of responsibilities for this particular target group in Belgium. Institutes in a variety of settings -including the school, social welfare and health care sector- provide support to substance misusing adolescents. However, there are regional differences in the type of support and how it is provided. Youth care is a decentralized authority in Belgium, while the organization of care belongs to the federal authorities. However, this local feature of our health care system may also be perceived as an element that increases the need to identify existing good practices and the challenges and difficulties when establishing prevention and treatment for this population.

Qualitative studies conducted alongside this project have identified a number of challenges related to working with youngsters, including the often vulnerable relation between care provider and adolescents. This is influenced by the often negative experiences of youngsters with institutions that are 'forced' upon them, the lack of knowledge in dealing with this particular age group or the amount of flexibility requested in working with them. On the other hand, youngsters typically lack objective self-reflection and subsequently do not perceive themselves as displaying problematic behavior. Consequently, they lack the motivation to seek help. Lots of pragmatic concerns have a negative impact on the care delivered, such as a lack of resources, suboptimal contacts with colleagues working in the judicial system and a lack of support to handle crisis situations. Fragmentation of responsibilities appears to be a crucial factor in what is perceived as obstacles to best practice for adolescents.

These findings suggest that a lot of the concerns for practitioners working in the field are context-specific, typical for our local context and therefore may require a context-specific answer derived from high quality evidence. In Belgium, guidelines on the prevention, screening and treatment of alcohol and drug misuse in adolescents are absent; a gap we intended to fill via this research project. Existing guidelines developed in other countries were identified and subjected to an adaptation process to make them suitable for use in our local context. We postulated that developing guidelines using the ADAPTE methodology

may be a sensible and cost-saving alternative to de novo guideline development. In addition, this method provides an opportunity to involve relevant stakeholders to ensure maximum relevance to their particular settings. Given the complex nature of substance misuse we felt it was appropriate to include stakeholders from a variety of different contexts; health care, social welfare and school settings. The choice to opt for an adaptation procedure was not without risk. The use of this methodology has not yet been properly evaluated, particularly not in West-European countries and most certainly not in an area of interest that required a broad, multidisciplinary panel of stakeholders to assist in the adaptation process. Therefore, a process evaluation of the adaptation process has been conducted as part of the research assignment. It can be used as a source of information by groups of guideline adapters that wish to embark on a similar journey.

Aims of this project were threefold. First, we aimed to generate a comprehensive overview of data on the prevalence of youngsters and the protective and risk factors associated with drug use, particularly for children living with misusing parents. Second, we aimed to provide a descriptive overview of Belgian organizations and initiatives working with adolescents in the area of substance misuse. Third, we wanted to develop (a set of) context-specific, best practice guidelines on the prevention, screening, assessment and treatment of alcohol and drug misuse in adolescents, using the ADAPTE methodology. This means that new guidelines are based on existing, international guidelines. Stakeholders representing the field are then invited to help translate the recommendations to a Belgian context. We further invited these stakeholders to critique our approach in order to learn from what we perceive as an important attempt to deal with the complexity of working inter- and multidisciplinary.

We offer the reader seven chapters that will provide a range of different answers to on-going challenges in the field of substance abuse in adolescents. Chapter 2 provides the numbers we need to better understand the current situation in Belgium in terms of prevalence, protective and risk factors of the substance misuse problem in adolescents (2a), the prevalence and associated health risks for children living with substance misusing parents (2b) and background to contextualize these findings (2c). Chapter 3 is the result from descriptively mapping the organizations and institutions involved in providing preventive, screening or treatment care for adolescents misusing substances and provides an overview of whether or not specialized care is offered to adolescents and if so, how. In order to develop a better understanding of the challenges related to working with substance misusing adolescents two related master thesis projects have been launched during the ADAPTE-youth research project. The first emphasis ambulant care, while the second included residential care in the sample. Both are available on request from the first author. Chapter 4 provides an overview of the existing guidelines dealing with substance misuse in youngsters

that were subjected to our adaptation process. In Chapter 5 we discuss the piloting phase of the adapted guideline, where we invited researchers, methodologists, practitioners, youngsters and parents of substance misusing youngsters to critically comment on the draft guideline in terms of applicability, feasibility, added value and meaningfulness of the recommendations. The process evaluation of the adaptation procedure is then added as Chapter 6, providing recommendations for future adaptation procedures based on our success factors and pitfalls. Chapter 7 presents a discussion and conclusion of the project.

This report would not be complete without the three guidelines that have been developed to support practitioners addressing 1. The screening, assessment and treatment of adolescents who misuse alcohol, 2. The screening, assessment and treatment of adolescents who misuse drugs and, 3. The prevention of alcohol and drug misuse in adolescents. These guidelines have been subject to a thorough validation process carried out by the Belgian Centre of Evidence-Based Medicine in order to determine whether the guidelines were rigorously developed. We invite the reader to disseminate them where and when appropriate, to implement them in practice, and provide us with constructive feedback on how we can improve them in order to increase their relevance.

Last but not least we would like to thank all respondents that contributed to the ADAPTE-youth project. We would also like to thank all panel members, external experts, clinical experts, adolescents and parents that provided feedback on the draft guidelines. Their valuable input has improved the final guidelines.

On behalf of the ADAPTE-youth project group,

Prof. Dr. Karin Hannes

2a. Drug- and alcohol misuse in adolescents: prevalence and protective and risk factors associated with drug use

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Introduction

Psychoactive substances, both legal and illicit, are easily accessible nowadays. Not only for adults, but also for young people. The decision making process that leads to the use of these substances is a very complex interplay between social context of the adolescent and his or her characteristics (Donovan, 2004; Hawkins et al., 1992; Jacob & Johnson, 1999; Petraitis et al., 1995; Wills & Yaeger, 2003). Also, the awareness that their use became excessive, or that it impacts their psychosocial functioning, often arises late in young people (Sanders-Woudstra, Verhulst, De Witte, 1996).

The causal relation between frequent substance use and health related problems is well documented (Degenhardt & Hall, 2012). Besides the individual health impact, a child that is dependent or misusing substances also often affects the health of one or more family members. Indeed, parents and siblings have been found suffering from injuries, stress-related problems and interpersonal violence (Center for Substance Abuse Treatment, 2004). On a more macroeconomic level, the misuse of psychoactive substances by young people thus results in a substantial health related cost (acute care hospitalizations for health problems caused by psychoactive substances, injuries, infectious diseases ...) (Rehm 2013).

Equally, young people are at risk of social problems (decrease in social role, loss of friendships, stigma ...) when their functionality decreases due to the use of substances (blackouts, hours of drunkenness or high) (Center for Substance Abuse Treatment, 2004). Furthermore, their dependency often influences the equilibrium in family systems and the social life of the parents and siblings. On a society level, substance misuse has been found associated with increased criminal behavior (vandalism, theft...) (Pernanen et al., 2000; Young, Dembo & Henderson, 2007).

In addition to health and social problems, dependent youngsters and their families are also obviously more at risk of financial problems (increasing expenses related to the substance

consumption, expenses resulting from the health and social consequences) (Rehm, 2013). Furthermore, absenteeism or suboptimal performance at school hampers the educational careers and consequently the professional career of the young adult (Cook and Moore, 1993; Williams et al., 2003; Yamada et al., 1996). Also, on a more macro economical level, substantial economic costs are associated with substance dependency (e.g. costs in the legal sector: police, court, prisons, reintegration) (Rehm 2013).

Recent European research highlights the fact an average of 87% of the adolescents (-19 years old) have drunk alcohol at least once in their lives, and that the prevalence rates are about the same for boys and girls (Hibell et al., 2012). Boys and girls, however, differ in their use of illicit drugs (as for life time prevalence: 21% vs 15 %). The majority of the adolescents who tried illicit drugs at least once, mostly used cannabis (14%). Ecstasy and amphetamines are less frequently reported (3 % each) whereas the use of cocaine, crack, LSD and heroin was found to be more marginal (1–2 %).

These European averages are however based on highly divergent country figures. In this chapter we therefore aim to describe the extent and pattern of consumption of alcohol and illicit substances among Belgian adolescents as well as their characteristics and behaviours. In addition, the extent and pattern of the provided treatment for substance related disorders within this population will be studied.

Methods

Alcohol and illicit substance use by adolescents

In order to estimate the prevalence of drug- and alcohol use and abuse in Belgian adolescents, data has been extracted from a combination of sources, mainly school surveys. We hereby focus on boys and girls younger than 19 years.

Belgian Health Interview Survey (BHIS)

The BHIS is the Belgian branch of the European Health Interview Survey. This cross-sectional study, coordinated by the Institute of Public Health, aims to measure the prevalence of several health indicators (health status, life style, prevention, medical consumption, health and society and health status and needs of elderly) in the general population. The survey consists of a household-, face to face interview and a self-completion questionnaire. Four waves were already conducted (1997, 2001, 2004 and 2008) and each wave consists of a sample of more than 10,000 respondents. These respondents are

stratified by region, province and community, and selected on the basis of the National Register using the household as sample unit. The self-completion questionnaire contains a module on substance use surveying the lifetime, last year and last month use of alcohol and cannabis; the age of first time cannabis use, the last year use of cocaine, amphetamines, ecstasy, LSD, heroin, methadone and buprenorphine; and the frequency of last month cannabis use. In addition, the BHIS also includes the CAGE questionnaire (Ewing, 1984) as an indicator of problematic alcohol use. Since the BHIS does not exclusively surveys adolescents, the sample size of this population is rather limited (444 in 2008). More information on the methodology of the BHIS can be found in Bayingana et al. (2006).

Health Behaviour in School-aged Children survey (HBSC)

Since 2000, several large-scale surveys were conducted in school students of the Flemish and French Communities. One of these surveys is the HBSC which has been conducted every four years in Belgium since 1985 (1993 in Flanders). This cross-national survey of school students was established within an international research collaboration. Boys and girls aged 11-, 13- and 15-year-old are surveyed (using self-completion questionnaires) about their health and well-being, their social environment and their health behaviors. In Belgium, this cross-sectional study is coordinated by the department of Public Health of the University of Ghent (Maes and Vereecken 2011) and the School of Public Health of the Université libre de Bruxelles (Favresse and De Smet 2008; Godin et al. 2011). In 2010, approximately 15,000 Belgian adolescents were invited to participate. More information on the methodology of the HBSC can be found in Currie et al. (2012).

European School Survey Project on Alcohol and other Drugs (ESPAD/VLASPAD)

Another international project, the European School Survey Project on Alcohol and other Drugs (ESPAD) has also been conducted in Belgium, but since 2007 only in a sample of Flemish Community Schools (Vlaams schoolonderzoeksproject naar alcohol en andere drugs, VLASPAD). This cross-sectional study was coordinated by the Department of Clinical and Lifespan Psychology of the Vrije Universiteit Brussel (Lambrecht and Andries 2011). In contrast with the HBSC, the ESPAD study focusses entirely on substance use, availability, risk taking behaviour, and psychosocial wellbeing. In 2010, approximately 6,900 adolescents of 155 secondary schools of the Flemish Community, covering all grades, were invited to complete a self-completion questionnaire of more than 370 questions. More information on the methodology of the VLASPAD can be found in Hibell et al. (2012).

VAD-Leerlingenbevraging (VAD-LLB)

The VAD-LLB (Kinable 2011) is an annual school survey (since 1999) by the Flemish Vereniging voor Alcohol- en andere Drugproblemen vzw. Like the VLASPAD survey, the VAD-LLB is a cross-sectional study that focusses entirely on substance use, availability, risk taking behaviour, and psychosocial wellbeing. Noteworthy is the fact that the VAD-LLB is part of a broader evaluation of and service to the drugs policy of the surveyed schools. Moreover, the VAD-LLB is only conducted on the request by management of the schools themselves. In 2010, approximately 41,400 adolescents of the Flemish Community, divided over 76 secondary schools and all grades, completed a self-completion questionnaire. More information on the methodology of the VAD-LLB can be found in Kinable (2011).

Although the HBSC, ESPAD and VAD-LLB all focus on school students and use self-completion questionnaires, large differences exist in their methodology. To bridge these differences, a working group with researchers of the three surveys was established (2007) to harmonize a core module on the prevalence of substance use in future waves of the respective surveys. In 2011, a joint report “Vergelijken van Vlaamse school surveys over middelengebruik” was published. The researchers concluded that the three surveys measure the life, last year and last month prevalence of cannabis use in a valid, reliable and comparable way (Lambrecht et al. 2011).

Middelengebruik bij middelbare scholieren Brugge (De Sleutel-LLB)

Data on substance use in adolescents was also available through the cross-sectional study “Middelengebruik bij middelbare scholieren Brugge” of the Department Scientific Research of De Sleutel (Lombaert 2010), a local survey about substance use, risk taking behaviour, and psychosocial wellbeing. In 2010, approximately 1,700 adolescents, divided over 29 secondary schools in Bruges and covering all grades, were invited to complete a self-completion questionnaire. More information on the methodology of the De Sleutel-LLB can be found in Lombaert (2010).

Treatment for substance related disorders

Data on treatment of substance related disorders has been collected through several administrative and epidemiological databases.

Belgian Treatment Demand Indicator Register (BTDIR)

The BTDIR is an epidemiological registration of all new treatment demands for illicit substance or alcohol related disorders in Belgian treatment centres. The registration protocol is based on the Protocol (version 2) of the European Monitoring Centre for Drugs and Drug

Addiction (EMCDDA) (Simon et al. 2000). This protocol became operational on national level on January 1st 2011 for centres offering treatment for persons with a substance-related disorder. The registration concerns all treatment episodes followed by a client in a treatment centre for his problem with illicit drugs as well as alcohol. Around twenty variables are collected about socio-demographic data, treatment history and addiction profile of clients. The identification of clients is made through the use of their national identification number. This allows to avoid double counting and to achieve longitudinal follow-up of the clients. Around 60 centres are participating to this TDI registration (specialized residential and ambulatory centres, general and psychiatric hospitals, centres mental health ...). For this overview, only data for 2011 was available. Given the start-up phase of the project, no information about the methodological quality of this epidemiological registration is currently available. More information on the methodology of the BTDIR can be found in Antoine and van Bussel (2011).

Minimum Psychiatric Data (MPD)

The MPD is an administrative registration system by the Belgian Federal Public Service, Health, Food Chain Safety, and Environment (DG1, Data management), collecting data of every psychiatric inpatient admission. This registration was made compulsory for all psychiatric hospitals or psychiatric unit in a general hospital in 1996, and for psychiatric nursing homes in 1998. Diagnostic data are collected using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV: American Psychiatric Association, 1994), shortly after patient's admission. It is explicitly requested to complete all DSM-IV axes, allowing the possibility to mention up to three disorders per axis. In addition, it is explicitly requested to indicate the main diagnosis causing the admission. The total number of admissions registered in the system evolved from 87,326 in 2000 to 96,494 in 2008. Variables used for this review were the type of substance related disorder, age and sex. More information on the methodology of the MPD can be found in Van De Sande et al. (2006).

Pharmanet

Since April 2009, prescriptions for methadone and buprenorphine are registered in the Pharmanet-system of the National Health Insurance Institution (NIHDI). Before 2009, this National Registration of Substitution Treatment was hosted by the Belgian Institute for Pharmacoepidemiology (IFEB /IPhEB). The Pharmanet database collects information from public pharmacies, hospitals pharmacies and specialized centres. Substitution treatments provided in prisons are not included in this database. Variables used for this review were

type of medication (methadone or buprenorphine), age and sex. More information on the methodology of the Pharmanet can be found in Van De Sande et al. (2006).

INTEGO

Since 1994, an integrated computerised network called INTEGO, hosted by the Academisch Centrum voor Huisartsgeneeskunde (ACHG) of the K.U.Leuven, collects information about diagnoses made by a group of general practitioners (92 in 2009) (Bartholomeeusen et al. 2002). This network covers around 2% of the Flemish population and is found to be representative for the Flemish population. The diagnoses (according to the International Classification of Primary Care, ICPC) made by these practitioners as well as patient characteristics such as age and gender are reported in the database. Among these diagnosis, chronic alcohol misuse (code P15) and illicit substance misuse (code P19) are considered here to assess the proportion of clients going to their general practitioner with a substance misuse problem. As for illicit drug misuse, no differentiation by substance is available in the INTEGO registration. Further, data provided by the network are expressed as incidence for 1000 patient year, standardized for the Flemish population of 2008. More information on the methodology of the INTEGO registration can be found in Bartholomeeusen et al. (2002).

Analysis of the data

For this review, only data of the BTDIR and the BHIS were available on record level. Data from the HBSC, VLASPAD, VAD-LLB, MPD, MCD, and Pharmanet, were available in standardized frequency tables provided by the researchers, whereas data for the De Sleutel-LLB and INTEGO were extracted entirely from published material. If relevant, confidence intervals (CI95%) were calculated to facilitate the evaluation of differences in prevalences. (CI not reported in text). In addition, available publications were used to find complementary information on the socioeconomic background and behaviour of the adolescents.

Results

Substance use reported by Belgian adolescents

Alcohol

In Wallonia (HBSC 2010) the reported lifetime **prevalence** for alcohol consumption among the adolescents for the age groups 12-14, 15-16 and 17-18 was, respectively, 74.0, 88.9 and 93.2%. In Flanders, similar prevalences were found for the age groups 15-16 (88.8%) and

17-18 (93%), whereas the prevalence for the age group 12-14 was significantly lower (56.3%) (Kinable 2011).

In 2008, about three quarter (73.3%) of the Belgian population aged 15 to 18 years old (BHIS 2008) reported the consumption of alcohol (mostly beer) in the previous 12 months (BHIS 2008) (Gisle 2010a;2010b). The reported last month prevalence varied from 56.8% (Hublet et al. 2011) to 40.4% in the case of low alcoholic beverages or 28.9% in the case of strong alcoholic beverages (Cardoen et al. 2011). Compared with previous waves (2001 and 2004) of the BHIS, no significant increase or decrease was observed in the lifetime and last year (2001: 73.5%; 2004: 77.6%) prevalence of alcohol use of adolescents. Based on the VAD-LLB and the VLASPAD, however, a significant decrease was found for all prevalence rates (lifetime, last year and month), as well as for the average amount of alcohol, compared with the first waves of these school surveys (Kinable 2011; Hibell et al., 2012).

Both the BHIS2008 (Gisle 2010a;b) and the school surveys (Kinable 2011; Lambrecht and Andries 2012; Lombaert 2010) report similar lifetime, last year and last month prevalences for Belgian boys and girls. Boys, however, drink more frequently (24.3% vs. 16.3%) and were found to start drinking more often at an age of 12 year or younger (39.5% vs. 26.4%) on an earlier age (Kinable 2011).

In addition to the basic prevalence rates, **problematic alcohol consumption** was also surveyed in several studies. In the BHIS2008, the CAGE questionnaire revealed a problematic alcohol consumption pattern in 7.5% of the Belgian boys and 7.7% of the girls aged 15 to 18 (Gisle 2010a;2010b). As for binge drinking, 6.8% of the Belgian adolescents reported binge drinking at least weekly. Among boys, this is 10.0%, among girls 3.6%. In the VLASPAD study, 27.2% of the girls and 39.4% of the boys reported the use of at least 6 units of alcohol per event (binge drinking) at least once during the last 30 days (Lambrecht and Andries 2012). Neither the mentioned gender differences nor the differences over time were found to be significant.

Almost half (48%) of the teenage respondents in the study of Lombaert (2011) stated that they have been drunk for at least one time in their lives. About one quarter of the adolescents reported to been drunk the month before the survey was conducted. In the oldest age group (17-18y), this proportion increased to almost half (47%) of the respondents. The first episode of drunkenness was mainly at the age of 14, with 10% of the adolescents reported the first time at the age of 13 or earlier (Lombaert 2011).

Kinable (2011) and Lombaert (2010) also studied the **reasons why** adolescents drink alcohol. The most frequently reported reasons were “because it tastes good” (De Sleutel-LLB: 87,9%), “sociability with friends” (VAD-LLB: 78.9%), “because I felt like it” (VAD-LLB: 65.3%), “because it is part of going out” (De Sleutel-LLB: 55.4%), “because they offered me” (VAD-LLB: 39.0%), “to relax” (De Sleutel-LLB: 41,9%; VAD-LLB: 32.3%), and “out of curiosity” (De Sleutel-LLB: 32,4%; VAD-LLB: 24.7%). In the oldest age group (17-18y) 23% of the respondents aimed to “get drunk” when they used alcohol (Kinable 2011).

Cannabis

In the BHIS2008, a lifetime **prevalence of cannabis use** of 9.9% was found for the Belgian adolescents between 15 and 18 years old (Gisle 2010a;2010b). Compared with the surveys of 2001 (14.70%) and 2004 (13.1%), the reported lifetime use of cannabis in Belgium did not decrease in a significant way (Buziarsist et al. 2002a;2002b;Bayingana et al. 2006a;2006b). Based on the school surveys, the reported lifetime prevalence (2010) of cannabis use in adolescents varied between 2.7% (Lombaert 2010) and 5.2% (Lambrecht and Andries 2011a) for the youngest (13y), and between 47.6% (Lombaert 2010) and 52.1% (Kinable 2011) for the oldest group of adolescents (17-18y).

The last year prevalence of cannabis use found in the BHIS2008 was 8.5% and remained stable compared to the reported use in 2004 (9.9%) (Gisle 2010a;2010b). In the larger school samples, between 1.7% (Kinable 2011) and 3.1% (Godin et al. 2011) of the youngest adolescents used cannabis at least once in the 12 months before they were surveyed. Between 29.7% (Kinable 2011) and 38.7% (Lombaert 2010) of the oldest adolescents used cannabis in that same period. Contrary to the BHIS and the VAD-LLB (Kinable 2011), the VLASPAD found a slight but significant decrease for the lifetime prevalence of cannabis use compared to its first wave (Hibell et al., 2012).

Finally, about 1.0% of the youngest adolescents reported the use of cannabis in the previous month whereas a last month prevalence of about 20.00% was found in the oldest age group (Lombaert 2010;Godin et al. 2011;Kinable 2011;Lambrecht and Andries 2011a). Like for the last year prevalence, the last month prevalence of cannabis use also remained stable since it was first surveyed by the BHIS in 2001 (2001: 7.5%; 2004: 4.6% and 2008: 6.4%) and the VLASPAD in 2003 (17% vs. 11% in 2011).

Although the reported prevalence rates vary, all surveys report a similar increase over the age groups ending at a point where almost half of the adolescents used cannabis at least once in their lives (Figure 1 and Figure 2).

Figure 1. Lifetime, last year and last month prevalence of cannabis use in adolescents of the Flemish Community (VAD-LLB 2010). (Kinable 2011)

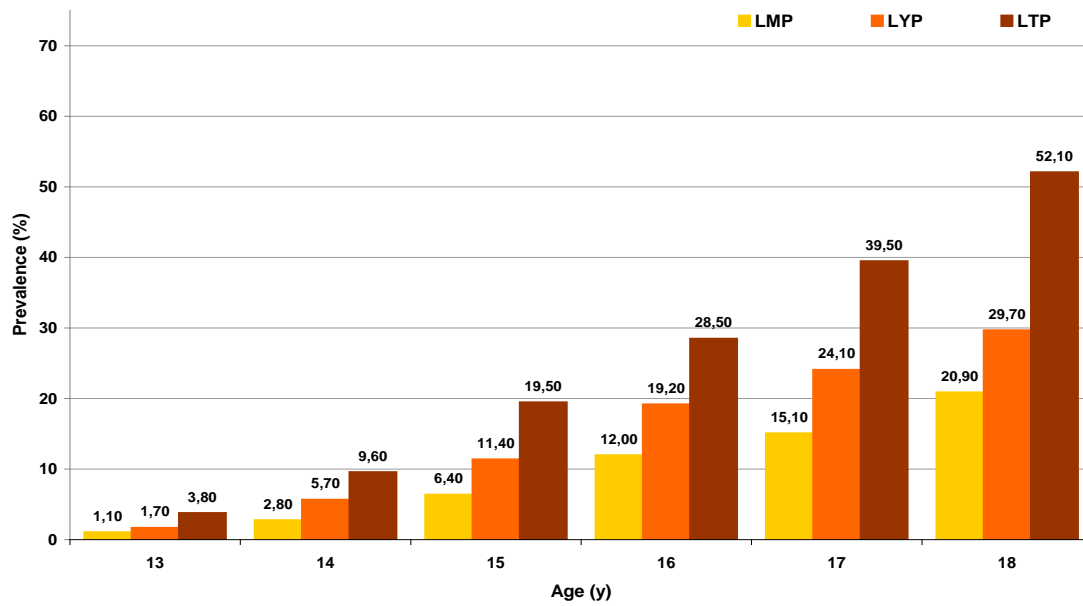
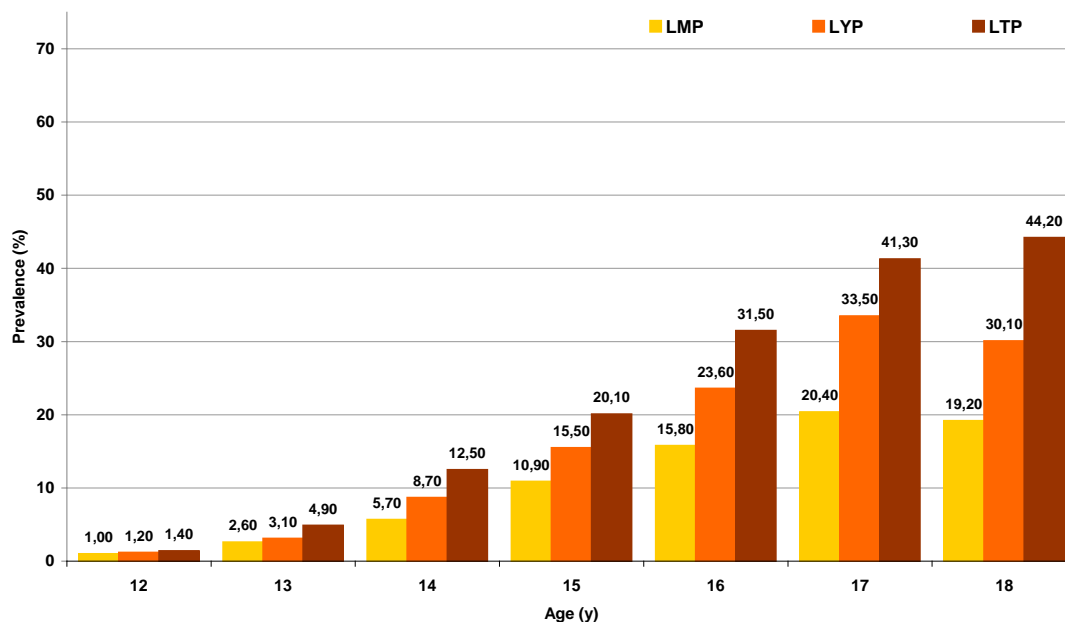


Figure 2. Lifetime, last year and last month prevalence of cannabis use in adolescents of the French Community, 2010. (Godin et al. 2011)



Several studies (Cardoen et al. 2011; Godin et al. 2011; Kinable 2011; Lombaert 2010) found a higher proportion of boys using cannabis than girls. Boys were also found to be more frequent cannabis users (Cardoen et al. 2011; Kinable 2011). In the BHIS2008, more boys (14.7%) reported ever cannabis use than girls (4.9%) did (Gisle 2010a; 2010b). The same **gender difference** was found for the reported last 12 months (boys: 12.5%; girls: 4.4%) and last month (boys: 9.5%; girls: 3.3%) cannabis use. In boys, no increase of the lifetime (2001: 16.6%; 2004: 17.1%; 2008: 14.7) and last month (2001: 9.1%; 2004: 5.9%; 2008: 9.5%) prevalence was found. Similarly, no significant decrease was found for lifetime prevalence (2001: 12.6%; 2004: 8.9%; 2008: 4.9), nor for last month prevalence in Belgian girls (2001: 5.8%; 2004: 3.3%; 2008: 3.3%).

The **age of first cannabis use** in the population of Belgian adolescents, according to Lombaert (2010), lies between 14 and 16 years. In contrast with the results found in the general population (Gisle 2010a), Kinable (2011) found that in 2009, the reported age of first use was higher in girls than in boys. Lombaert (2010) does not mention such a gender difference.

In the VAD-LLB, HBSC and VLASPAD surveys, the teenage respondents were asked about **regular cannabis use**, being defined as having used cannabis at least 20 times during last

month. In their analysis of the results, Bollaerts and Sasse (2012) found that “the prevalence of regular cannabis use is in line with the observations for cannabis use in general, with the prevalence of regular cannabis use increasing as age increases and with higher prevalence rates for boys compared to girls”. Bollaerts and Sasse also described a seemingly decrease of regular cannabis use among school students over time. On the other hand, the authors referred to the HBSC data for Flanders, for which previously lower prevalence rates were observed compared to the other data sources (Bollaerts and Sasse, 2012).

Table 1. Prevalence of regular cannabis use among Belgian adolescents, 2008-2010. (Bollaerts and Sasse, 2012)

	year	Boys			Girls		
		13-14y	15-16y	17-18y	13-14y	15-16y	17-18y
HBSC (Flanders)	2010	0.6% (N = 1241)	1.9% (N = 1285)	6.2% (N = 1216)	0.2% (N = 1221)	0.8% (N = 1312)	1.4% (N = 1216)
HBSC (French community)	2010	0.8% (N = 1069)	3.7% (N = 1159)	6.5% (N = 806)	0.2% (N = 1113)	1% (N = 1232)	1.8% (N = 980)
VLASPAD (Flanders)	2010	0.1% (N=1115)	2.3% (N = 1168)	7.4% (N = 761)	0% (N=1083)	0.6% (N = 1110)	1.3% (N = 689)

A crude indication of the extent of adolescents that use cannabis in a continuous way (i.e. the **continuation rate**) can be obtained by comparing the current use of cannabis (last month prevalence) in a population with the total that have ever used cannabis in their lifetime (lifetime prevalence). The continuation rate in 2008 was higher (64.7%) than in 2001 (51.0%). This suggests that in 2008, more adolescents (15-18 years) used cannabis in a continuous way compared to the year 2001. Lombaert (2010) calculated the continuation rate of cannabis use in school students of Bruges (Flemish Community). For the total population, this continuation rate was 48%, meaning that one out of two adolescents that ever used cannabis, also used cannabis recently. The continuation rates of the 15 and 16 year olds (52%) were higher compared to those of the 17 and 18 year old adolescents (47%). Own calculations of the continuation rate based on the data of the VAD-LLB 2010 (Kinable 2011) and the HBSC in the French Community (Godin et al. 2011) confirm the trend reported by Lombaert. Especially the continuation rates for the French Community school students (15y: 54.2%; 16y: 50.2%; 17y: 49.4%; and 18y: 43.4%) were high compared to the rates for the Flemish Community school students (15y: 32.8%; 16y: 42.1%; 17y: 38.2%; and 18y: 40.1%).

Lombaert (2010) also surveyed the **place of cannabis use**. Most adolescents reported the outdoors use (e.g. street) (89.30%) of cannabis while about two third (67.30%) used at someone else's home. Festivals (59.3%) and parties (57.3%) were also frequently reported locations of cannabis use.

The studies of Kinable (2011) and Lombaert (2010) also provide information about the **reasons why** adolescents use cannabis. The most frequently reported reasons were sociability, relaxation, curiosity, "to get stoned", "because it was offered to me", "to forget problems" and "to feel good". Interestingly, Kinable (2011) also reported reasons why adolescents don't use cannabis: they "don't need it", "cannabis is dangerous", "it's unhealthy", they have "a strong personality", or they are "not interested in the effects" of cannabis. Also, cannabis was found to be "too expensive". Furthermore, adolescents that did not use cannabis found themselves sportive and feared dependency or the reaction of their parents (Kinable 2011)

Illicit psychoactive substances other than cannabis

The highest lifetime prevalence's in the oldest age group of adolescents (17-18y) were reported for **amphetamines** and **XTC**, and varied between 3.10 % (Godin et al. 2011) and 6.5% (Lombaert 2010), and between 1.90 % (Godin et al. 2011) and 12.2% (Lambrecht and Andries 2011a), respectively. Interestingly, the last year prevalence of amphetamine use (4.0%) is only slightly lower than its lifetime prevalence (5.2%). Furthermore, the recent use (past 30 days) of amphetamine was still 2.7% of the oldest (18y) French Community adolescents (Godin et al. 2011). In the local sample (Bruges, Flemish Community) of Lombaert (2010), the recent use of amphetamine dropped to a marginal proportion (0.1%) in the oldest age group (17-18y). Less than two percent of the 15-18 years old participating in the BHIS2008 reported the use of amphetamines or XTC in the previous 12 months (Gisle 2010a;2010b). Boys (3.2%) reported more often the past year use of amphetamines or XTC compared to girls (0.5%) although this difference was not significant.

The reported lifetime prevalence of **cocaine** use in Belgium for the oldest age group of adolescents (17-18y) varied between 2.6% (Godin et al. 2011) and 5.30% (Lombaert 2010). In the school surveys with a regional coverage (Godin et al. 2011;Kinable 2011) the past year use of cocaine by this age group was 3.3% and 3.5% respectively whereas the local study of Lombaert (2010) found a last year prevalence of 1.7%. As for the oldest adolescents in the French Community schools, a recent cocaine use of 3.10% was registered (Godin et al. 2011), whereas only 0.2% of the oldest adolescents in Bruges reported a recent use of cocaine (Lombaert 2010). The last year prevalence of cocaine use

reported in the 2008 BHIS was lower than one percent (0.7%) (Gisle 2010a;2010b). The cocaine user tended to be a boy (1.3% vs. girl: 0%) (Gisle 2010a;2010b). The past year use of opiates like heroin and its substitutes is rarely (0.0%) reported in the BHIS 2008 for adolescents aged 15 to 18 years old (Gisle 2010a;2010b).

Compared with the regional school surveys (Godin et al. 2011;Kinable 2011) the lifetime use of **solvents**, **hallucinogens** and **LSD** in the older age group of adolescents of Bruges was rather high, respectively 8.1%, 7.7% and 5.9% (2010). The lower last year (respectively 1.8%; 2.5% and 3.1%) and last month (respectively 0.6%, 0.7%, and 0.6%) prevalence rates could indicate the rather experimental use of these substances.

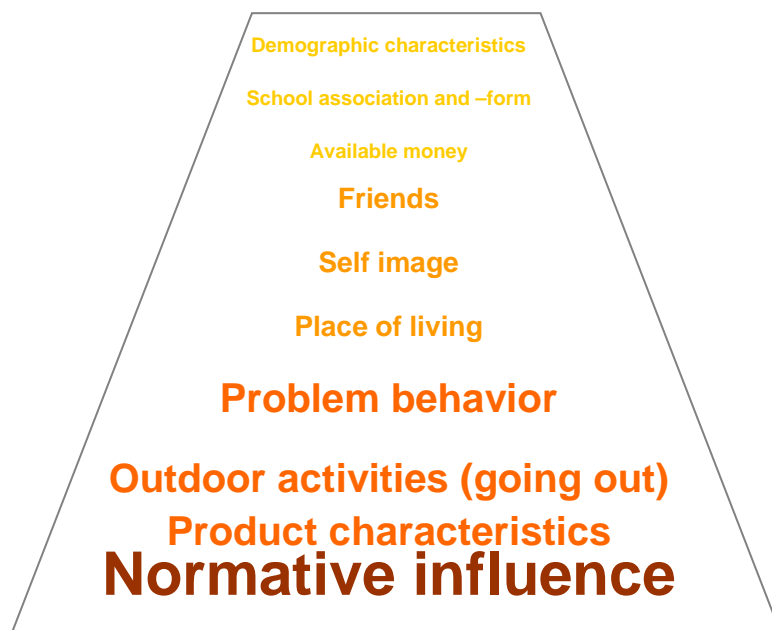
Both the regional and local school surveys held in the Flemish Community (Kinable 2011, Lombaert 2010) found a lifetime prevalence of **opiate** (heroin) use of about 1% in the oldest age group of adolescents. None of them reported the recent use (past 30 days) of opiates. In the French Community school survey, 1.6% of the 18 year old adolescents reported the recent use of heroin (Godin et al. 2011).

Given the small numbers, no further dimensions related to the use of non-cannabinoid illicit substances are reported here. As for **trends**, based on the previous waves of the VAD-LLB, Kinable (2011) concluded that, for each of the psychoactive substances other than cannabis, no increase or decrease was found in the lifetime, last year or last month use by adolescents younger than 19 years old.

Risk and protective factors related to substance use

Lombaert (2010) identified several **risk and protective factors** related to the substance use of adolescents and ranked them according to the extent of their contribution to the explanatory model (Figure 3). Overall, the **normative influences** from the context or environment of the teenage respondents were found to be the most robust factors in determining the use (or not use) of psychoactive substances. In first instance, Lombaert referred to the disapproval by parents and friends of the substance use: “the more parents and friends disapprove the use of a certain substance, the less risk there is for the use of that substance”. In addition, Lombaert also highlighted the behavioral normative influences, namely the use of psychoactive substances by friends and (to a lesser extent) parents. The more substance using friends a teenager has, the higher the risk and the frequency of the use of that substance by the teenager.

Figure 3. Risk and protective factors of psychoactive substance use according to their importance (Lombaert 2010).



Belgian adolescents in treatment for a substance related disorder

Adolescents admitted to a Belgian treatment facility

In 2011, 1,148 adolescents aged less than 19 were newly registered in the **Belgian Treatment Demand Indicator Registry (BTDIR)**. A large majority of them (90.2%) was registered in outpatient centers, while 8.3% were registered in-patient centers and 1.5% in low-threshold agencies.

Overall, substantially more boys (81.1%) compared to girls (18.9%) were admitted for the treatment of a substance related disorder. More than a third (35.5%) of the minors was previously treated for a substance related disorder before their intake in 2011. The most common sources of referral were legal services (court, probation or police: 35.3%), family or friends (24.2%), self-referred (13.9%) and social services (11.9%). Only 1.0% of the adolescents was referred by a general practitioner. Girls, compared to boys, more often started treatment based on their own decision. Boys were more often referred by court, probation officer or police.

About three quarter (73.7%) of the adolescents in treatment for an illicit substance related disorder lived with his parents. Consequently, most indicated that they lived in a stable

accommodation (79.4%), whereas 8,4% lived in an institution (e.g. prison, youth care, ...). A quarter (24.5%) of the minors don't attend school at the moment of intake.

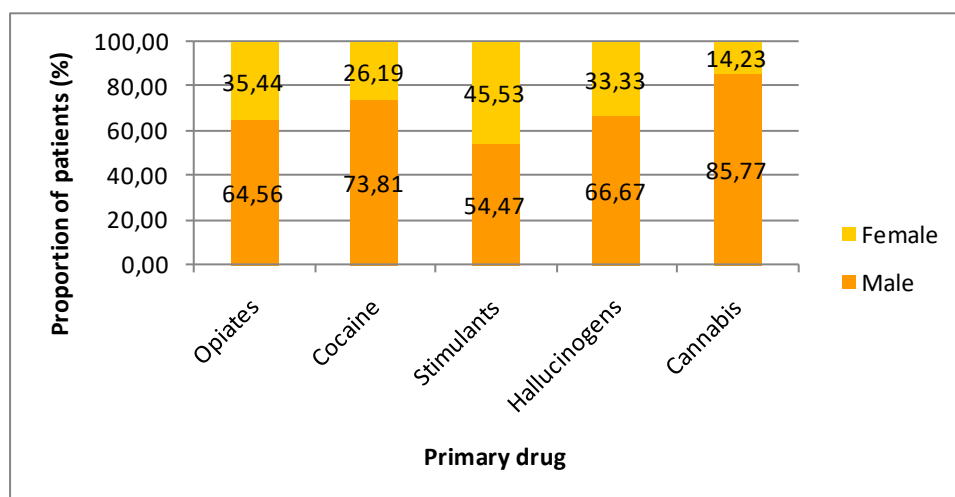
Most adolescents were admitted with cannabis or stimulants related disorders (See Table 2). Substances less frequently involved were opiates, cocaine, hypnotics and sedatives, and unknown or other substances. A more detailed view by primary substance revealed a high proportion (45.5%) of girls among the adolescent service users with a stimulants related disorder (Figure 4).

Table 2. Number and percentage of treatment demand of Belgian adolescents (< 19 year) by primary substance and gender (2011).

Main substance	Male		Female		Total	
	N	%	N	%	N	%
1. Opiates (total)	51	5,84	28	12,61	79	7,21
2. Cocaine (total)	31	2,93	11	3,25	42	3,83
3. Stimulants (total)	67	6,33	56	16,57	123	11,22
4. Hypnotics and Sedatives (total)	7	0,66	4	1,18	11	1,00
5. Hallucinogens (total)	2	0,19	1	0,30	3	0,27
6. Volatile Inhalants	3	0,28	1	0,30	4	0,36
7. Cannabis (total)	711	67,20	118	34,91	829	75,64
9. Other Substances (total)	2	0,19	3	0,89	5	0,46

Source: BTDIR, 2011.

Figure 4. Gender distribution among Belgian adolescents (<19 year) in treatment, by primary substance (2011).



Source: BTDIR, 2011.

Before the age of 15, teenage patients admitted in 2011 used mostly inhalants (66.7%) or cannabis (45%) as first substance. Stimulants, opiates and hypnotics were used to a lesser extent before the age of 15 years old, respectively 35.2%, 33.9% and 31.8%.

Of the adolescents admitted with a disorder primarily related to the use of cannabis, about one third (34.1%) used cannabis on a daily basis. Injecting behavior was marginal in the total population of admitted minors (ever: 2.0; recent: 1.2).

Adolescents consulting primary care

The incidence of adolescents and adolescents diagnosed by a general practitioner with a problem of illicit substance misuse, was 0.1‰ patient years (2008-2010) for Flemish children aged 5 to 14 years old, and 1.3‰ for 15 to 24 year olds. As for alcohol related psychological problems, the incidence found for the age group of 15-24 year olds was 0.4‰ patient years.

Adolescents admitted in psychiatric hospital services

In 2010, 11.4% of the adolescents (<19 y) admitted in a Belgian psychiatric hospital service, were admitted with an alcohol or illicit substance related disorder as their main diagnosis. Compared to the first year of the MPD registration in 1998, this proportion of substance related admissions decreased with 3.4%. Most of these adolescents with a substance related disorder in 2010 were diagnosed with polysubstance dependence, an alcohol related disorder or a cannabis related disorder (Table 3). Amphetamine, Hallucinogen and Inhalants related disorders were reported to a much lesser extent. Compared with 1998, slight increases were found in the teenage population for cocaine and cannabis related disorders as main diagnosis. Marginal or substantial decreases were found for all other substance related disorders.

Adolescent patients receiving substitution treatment

About one percent (1.1%, n=196) of the Belgian inhabitants who were treated in 2010 for an opioid related disorder with prescribed substitution medication were younger than 19 years old (Pharmanet, 2010). Overall, the group of Belgian patients who receive opioid substitution treatment, are treated with methadone (n= 15395; 87,4%). Of these patients treated with methadone, less than one percent (n = 142, 0.9%) is younger than 19 years old. In the group of patients treated with buprenorphine, the proportion of adolescents is 2.4% (n = 54) compared to methadone (n = 142, 0.9%). Most of the adolescents receiving OST in 2010 were boys (n = 121; 61.7% vs. girls: n = 75; 38.3%).

Table 3. Relative proportion (%) of admissions of adolescents (<19y) with an alcohol or an illicit substance related disorder as main diagnosis in Belgian psychiatric hospital services (1998-2010)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	%	%	%	%	%	%	%	%	%	%	%	%	%
Alcohol dependence	2.00	1.93	1.73	1.53	1.68	1.73	2.18	1.87	1.98	1.91	1.78	1.83	1.68
abuse	1.62	1.26	1.07	1.02	0.81	0.97	0.81	0.98	1.03	1.02	0.85	0.81	1.01
Opioid dependence	2.29	2.89	2.75	3.17	2.99	2.73	2.23	2.29	2.74	2.57	2.80	2.18	1.61
abuse	0.28	0.23	0.26	0.33	0.30	0.26	0.18	0.20	0.19	0.16	0.14	0.09	0.06
Cocaine dependence	0.27	0.39	0.36	0.47	0.44	0.74	0.50	0.52	0.64	0.57	0.75	0.54	0.35
abuse	0.14	0.21	0.12	0.14	0.26	0.29	0.26	0.27	0.33	0.25	0.21	0.19	0.24
Cannabis dependence	0.68	0.64	0.90	0.89	1.07	1.32	1.47	1.57	1.19	1.20	1.40	1.55	1.47
abuse	0.74	0.63	0.85	0.96	0.73	0.98	0.95	1.14	0.98	1.06	0.76	0.86	0.82
Amphetamine dependence	1.01	0.87	0.35	0.39	0.50	0.61	0.44	0.57	0.43	0.58	0.58	0.32	0.46
abuse	0.73	0.70	0.34	0.48	0.53	0.45	0.40	0.36	0.33	0.48	0.38	0.27	0.3
Hallucinogen dependence	0.09	0.14	0.02	0.13	0.05	0.02	0.01	0.01	0.03	0.01	0.03	0.02	0.03
abuse	0.14	0.06	0.04	0.05	0.02	0.02	0.03	0.02	0.01	0.01	0.02	0.01	0.02
Inhalants dependence	0.08	0.06	0.01	0.06	0.01	.	0.02	0.04	0.02	0.01	0.02	0.01	
Polysubstance dependence	4.31	4.96	4.15	4.20	3.91	4.51	3.53	3.81	3.42	3.35	3.13	2.98	3.05
Other (or unknown) substance dependence	0.13	0.17	0.20	0.16	0.18	0.17	0.08	0.07	0.10	0.18	0.12	0.06	0.16
abuse	0.33	0.52	0.71	0.49	0.50	0.41	0.27	0.33	0.45	0.43	0.18	0.11	0.11
Total substance related admissions (N)	1536	1732	1563	1771	1744	1960	1774	1899	1864	1870	1686	1529	1463
Total admissions in MDP (N)	10348	11064	11269	12231	12468	12873	13299	13508	13434	13558	12838	12929	12867
Relative proportion substance related admissions (<19 year) in MDP (%)	14.8	15.7	13.9	14.5	14.0	15.2	13.3	14.1	13.9	13.8	13.1	11.8	11.4

Source: MPD (FPSHFDSE DG1, 2012)

Discussion

In this chapter, we reviewed the available data for substance use by Belgian adolescents (<19 years old) as well as the provided treatment for substance related disorders within this population. Overall, alcohol was found to be the most used psychoactive substance, with about three quarters of the boys and girls that have been drinking alcohol (mostly beer) at least once in their lives. Noteworthy is the finding that about one-fifth of the adolescents under 19 are considered as a regular drinker. Furthermore, the Belgian school studies do not fully support the popular theorem that alcohol use is more typical to the male life style. Indeed, Belgian boys and girls reported similar lifetime, last year and last month prevalence rates of alcohol use. Notwithstanding this, Belgian boys tend to drink larger quantities in a week, which consequently lead more often to over-consumption. Also, regular alcohol use, binge drinking and dependency are found more often in boys.

In the Belgian general population (15-64 years old), alcohol use and regular alcohol use are found to be associated with a higher educational level, whereas bingedrinking is found to be more prevalent in the lower educational strata (Gisle 2010). However, the Belgian school surveys are not in line with these findings as some find alcohol use and the regular alcohol use more prevalent in the population of boys and girls that follow a technical educational program (Kinable, 2010), whereas others find no support for educational level as a risk or protective factor (Lombaert, 2010).

While a decrease in alcohol use was found compared to the first wave of Belgian school surveys, Kinable (2011) highlighted an alarming trend as to the function of alcohol use in adolescents. Indeed, about one quarter of the oldest group of the surveyed adolescents "drink to get drunk". Motives like "to forget my worries", "to feel good" and "to counter boredom" (Kinable 2011; Lombaert 2010) could indeed refer to a problematic situation leading to problematic drinking and to related medical and social problems. On the other hand, the most reported motives ("sociability with friends", "because they were offered", "to relax", and "out of curiosity") probably refer to an experimental phase (Kinable 2011).

In line with the results of alcohol use is the finding that alcohol related disorders are the most prevalent substance related disorder among adolescents admitted to a Belgian psychiatric hospital. It is also interesting to note that, like the prevalence of alcohol use, a slight decrease is observed in the alcohol related hospital admissions among adolescents.

According to the general population surveys and the school surveys, the use of illicit psychoactive substances other than cannabis is rather limited in the population of Belgian adolescents (15-18 years old). Overall, the specific surveys in school populations show substantially higher prevalence rates of drugs use than the BHIS. Although the reported prevalence's vary, all surveys report a similar increase over the age groups ending at a point where almost half of the boys and girls (18 year) used cannabis at least once in their lives.

Cannabis use (lifetime, last year and month prevalence) and frequent cannabis use are generally higher among Belgian boys compared to girls. Similar as for alcohol, a high proportion of the Belgian adolescents used cannabis to get stoned and to feel better, whereas others used more as an experiment (Kinable 2011, Lombaert 2010).

In line with the finding that cannabis is the most used illicit substance among Belgian adolescents, is the finding that cannabis related disorders are the most prevalent illicit substance related disorder among adolescents admitted to a Belgian psychiatric hospital. Like the prevalence of cannabis use, the cannabis related hospital admissions among Belgian adolescents seems to be stabilized since several years. It is nevertheless worth mentioning that of all European countries Belgium has one of the highest rates of primary cannabis users (all age groups) entering the treatment system (EMCDDA, 2012). Possible explanations for this high prevalence are a more rapid referral towards health care, the high potency and the high availability of cannabis in Belgium (EMCDDA, 2012).

About one percent of the Belgian adolescents under the age of 19 used opioids at least once in their lives. Opioids, one of the most harmful psychoactive substances (Nutt et al. 2007), were found to be the primary substance involved for about 1.5% percent of the psychiatric hospital admissions of Belgian adolescents. A similar proportion of Belgian adolescents, mostly boys, was treated with methadone or buprenorphine.

Since both the VLASPAD and the HBSC surveys are part of an international research project, the results for the Belgian adolescents can be compared with results found in other European countries. The overall impression is that results from the Belgian studies are generally in line with the EU averages. One of the significant results however is that, for the VLASPAD study, a 12% higher last month prevalence of alcohol use was found for the Belgian adolescents (Hibell et al., 2012). As for cannabis use, national prevalence estimates of cannabis use vary widely between countries in all measures of prevalence (EMCDDA, 2012). Nevertheless, Belgian adolescents reported a 7% higher lifetime use of cannabis compared with the mean found for the EU adolescents (Hibell et al., 2012).

The experience of Belgian adolescents with the use of non-cannabinoid substances was rather limited. This is in line with the results reported for other EU countries. Nevertheless, adolescents in Belgium, like in Bulgaria, France, Latvia, Monaco and the United Kingdom, reported in 2011 a higher lifetime use of any illicit drug other than cannabis, with prevalence rates around 10%, compared to other EU adolescents (6%) of the same age group (Hibell et al. 2012). For example, more Belgian adolescents reported the use of amphetamines at least once in their lives compared to other adolescents of other EU countries, except for Bulgaria, Hungary and Liechtenstein (Hibell et al. 2012). In this context, it is worth to note that Belgium is found to be one of the major amphetamine producing countries (UNODC, 2012). This could result in a higher availability of the substance compared to other countries.

Several important **limitations** of this review need to be considered. First, the validity of studies on sensitive behaviours like substance use is often questioned as there is no direct objective tool for validation (Anderson 2003). Indeed, when adolescents are asked about their substance use, they often tend to underestimate their use. On the other hand, adolescents could also tend to overestimate their substance use “if they feel that drinking is associated with adult behaviour or is expected by their friends” (Anderson 2003).

Most data for this review were extracted from studies using self-completion surveys. In their review of substance use studies, the European drugs agency EMCDDA found that self-report methods for substance use were as reliable and valid as for most other forms of behaviour. Moreover, results from self-completion surveys on substance use tend to be more valid than from interviews (Harrison 1997).

Household surveys like the BHIS target a wide segment of the population, usually those between 16 and 75 years old. Also, the topics covered in the BHIS are not only alcohol and drug use, but also health behaviour in general. As the youngest respondents comprise only a small part of the target population, the resulting samples usually contain too few young people for analysis to be meaningful (Anderson 2003). Moreover, the home setting with the proximity of the parents is not ideal for an interview about behaviour like substance use.

Most of the data on substance use was collected through school surveys. Some of these surveys, like the VAD-LLB, are within the context of the evaluation of a school policy on the prevention of substance use. Although, some caution is needed when interpreting the results of surveys for such purposes (Anderson 2003), the results of the VAD-LLB were found to be in line with those of the VLASPAD and the HBSC surveys (Lambrecht 2011)

Another important factor that could influence the response in school surveys is the frequency with which school surveys are conducted. The willingness to cooperate can decrease, according to Andersson (2003), if school students are exposed to too many questionnaires, which could lead to a higher degree of missing or invalid data. Indeed, many large school surveys (VLASPAD, VAD-LLB, HBSC ...) are conducted in the same timeframe in Belgium. In Flanders, however, practical arrangements are made between the coordinators of these school surveys to prevent overexposure (Lambrecht et al. 2011).

In this review, most of the data on treatment is based on several administrative patient registries like the MPD, MCD, and Pharmanet. Although most of these registrations have an acceptable validity, it is often not possible to distinguish between suspected and confirmed diagnoses. The diagnosis Polysubstance dependence in the MPD registration, for example, is sometimes used as a residual diagnosis if no primary substance can be identified, whereas the diagnosis should be used when a person is dependent of more than one substance. Also, overreporting of serious cases is possible if the refunding system is linked to a diagnosis and procedures (Habers et al., 2008). Furthermore, socioeconomic background information is often limited in these administrative registries (e.g. MCD, Pharmanet).

Finally, this review does not provide information on the use of new psychoactive substances often called “designer drugs” or “legal highs”. Yet, a recent European study found that 4% of the Belgian adolescents have used such a substance at least once in their lives (The Gallup Organisation 2011). Compare to the lifetime prevalence rates found for the classic non-cannabinoid substances, this concerns a substantial proportion of the Belgian teenage population. Given the novelty of the phenomenon and the absence of sound measures, we did not include this heterogeneous group of substances in our review.

Conclusions

The overall finding of this review is the fact that most Belgian adolescents have experience with alcohol and to a lesser extent with cannabis. From an European view, the substance use behaviour of Belgian adolescents is relatively typical for adolescents nowadays. Given the impact on health and social outcome, these findings support the need for increased efforts to prevent the early onset and continuation of substance use by adolescents in Belgium. On the other hand, since already a substantial number of Belgian adolescents are in treatment for a substance related disorder, the need for specific medical care is justified. From an ethical point of view and with the current socioeconomic context (austerity impacts

the availability of sources), the choice for proven best practices in prevention and treatment is necessary.

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2.2 Drug- and alcohol misuse in parents: prevalence and associated health risks for children. Results from the Belgian Health Interview Survey

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Introduction

Harms related to the consumption of alcohol and illicit drugs are not restricted to the users themselves, but affect their families as well. The evidence that children who are exposed to parental substance misuse are at increased risk of emotional, psychological, behavioral, socio-economical and developmental problems is paramount (Vanderplasschen et al., 2010). However, the scale of this problem and its impact within a given population has been studied to a lesser degree.

Population-based estimates of the number of children living with substance misusing parents are rare. In the United Kingdom (UK), secondary analyses of the most recent household surveys (2009) revealed that 30% of the children under 16 years of age live with at least one binge drinking parent, whereas 6% live with a dependent drinker (Manning et al., 2009). A total of 8% of the children in the UK live with an adult who had used illicit drugs within the past year (Manning et al., 2009). In Belgium, it was estimated that 10% of all children under 18 live with problem drinking parents, based on the 1998 EuroCare document (Eurocare, 1998). This estimation, however, was based on an extrapolation of data from Denmark and Finland. Figures from the Belgian Mental Health Survey (survey year 2001) suggest that 3.1% of all children (< 18 years) live with at least one alcohol misusing (DSM-IV criteria) parent (Luyten et al., 2011).

Estimating the overall proportion of children subject to parental substance misuse appears to be a difficult task, as substance misuse is often characterized by denial and shame. In particular, this appears to be the case when children are involved, resulting in underestimated prevalence rates. Assessing the number of "exposed" children is not sufficient to determine the health impact, as the risk of harm should be accounted for as well. The risk of harm to the children resulting from parental substance misuse depends on many factors, including amongst others the severity and pattern of substance misuse, the age and personality of the children and protective and risk factors in the environment, such as social

network support and socio-economic deprivation (Suchman & Luthar, 2000).

The current analyses aim to update and broaden earlier prevalence estimates on parental substance misuse in Belgium, as well as to assess the associated risk of harm to the children. This objective was achieved through secondary analyses of the Belgian *Health Interview Survey*, a nationally representative cross-sectional survey by which information on a series of health-related topics is collected (Van Oyen et al., 1997).

Methods

Study Sample

The study sample was derived from the 2001, 2004 and 2008 Belgian *Health Interview Survey* (HIS), a repeated cross-sectional survey by which health information is collected (Belgian Health Interview Survey, 2013). To obtain a representative sample of the general Belgian population (not including institutionalized subjects, e.g. persons in psychiatric hospitals or prisons), the HIS uses stratified multistage sampling with households being selected at the first stage and individuals at the second stage. More precisely, in households with a maximum of four members, everyone is selected. In households including five members or more, a maximum of four members are selected. In particular, the reference person and his/her partner (mostly the parents) are always selected, while the other members (mostly children and grandparents) are selected randomly. Stratification is performed at the level of regions, provinces and age. Detailed information on the survey design and the calculation of associated sampling weights can be found elsewhere (Van Oyen et al., 1997).

Health information is collected through face-to-face interviews which include questions regarding, among others, physical health and use of preventive and curative health services, and self-administered questionnaires about, among others, self-perceived mental health, smoking behaviour and use of alcohol and illegal drugs. The self-administered questionnaires are only completed by individuals aged 15 years or older. In 2001, 2004 and 2008, the household participation rate was 61%, 61% and 55%, respectively, reaching a total number of 5530, 6513 and 5809 households. Within these households, children (≤ 18 years) and their parents were identified resulting in a total of 7699 identified parents ($N_{p\ 2001}=2865$, $N_{p\ 2004}=2501$, $N_{p\ 2008}=2333$) and 7848 identified children ($N_{c\ 2001}=2905$, $N_{c\ 2004}=2576$, $N_{c\ 2008}=2367$). A total of 1.1% of all minors were discarded from the analyses, as they could not be associated univocally with a parent. These were minors living in a large family including

several adults or who were living on their own (with other minors) or cases where information regarding the relationship between members of the household was missing. Health information was available for 98.6% of the identified parents and 83.5% of the identified children, because not all members of the household were selected to participate in the survey by design.

Measures

Parental substance use

Substance use among adults/parents concerned the assessment of “problematic alcohol consumption”, cannabis use and the use of illicit drugs. *Problematic alcohol consumption* was assessed among non-abstainers (last 12 months) using the CAGE (Ewing, 1984; Mayfield et al., 1974), a widely used screening instrument for lifetime alcohol problems that is often included in national health interview surveys. The CAGE consists of four questions: “Have you ever felt you should **cut down** on your drinking?” (C), “Have people **annoyed** you by criticizing your drinking” (A), “Have you ever felt bad or **guilty** about your drinking?” (G), **Eye opener**: “Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover?” (E). Two positive responses on the CAGE are considered a positive test and an indication for further assessment. The 2+ CAGE test scores have good psychometric properties with a sensitivity of 93% and a specificity of 76% (Mayfield et al., 1974). CAGE scores were available in the household surveys of 2001, 2004 and 2008. In this study, *regular cannabis use* was defined as cannabis consumption during at least 10 days in the past 30 days (EMCDDA, 2002). This indicator was only available in the surveys of 2004 and 2008. *Other illicit drug use* (excluding cannabis) was identified as last year use of cocaine, amphetamines, heroin, ecstasy, or other psychoactive substances. The latter variable was only available in the 2008 survey.

Child health and health-related indicators

Health and health-related behaviour indicators for children were obtained through face-to-face interviews and self-administered questionnaires. The indicators derived from the self-administered questionnaires, hence only available for the children aged 15-18 years old, were: (a) perceived mental health, (b) alcohol overconsumption (≥ 15 drinks a week) and (c) daily smoking. Perceived mental health was assessed using the GHQ-12 (Goldberg et al., 1997), a 12-item questionnaire aimed at assessing recent psychological well-being and the probability of psychiatric disorders. A clinical cut-off point (at least 4 items answered affirmatively) was used, as an indicator of psychological impairment (rather severe pathology requiring professional help). A limited number of health indicators could be measured for children of all ages, being: (d) suffering from a longstanding illness, chronic condition or

disability, (e) suffering from overweight, (f) eating at least two portions fruit daily, (g) being subject to passive smoking at home and (h) needing to postpone health care at household level.

Confounding variables

The socio-economic status of the household was considered to be an important confounding variable. This variable was defined as the highest educational attainment of the parents following the International Standard Classification of Education (ISCED-1997) and was categorized as follows: 'lower education', 'lower secondary education', 'higher secondary education' and 'higher education' (Unesco, 2006).

Statistical Analyses

All analyses were conducted accounting for the stratified, multi-stage sampling design of the HIS (Van Oyen et al., 1997). Exploratory analyses were carried out by calculating (a-b) the prevalence (and 95% confidence intervals (95% CIs)) of substance misuse in adults (18-64 years) and in parents of children ≤ 18 years and (c) the prevalence (and 95% CIs) of children ≤ 18 years living with at least one substance misusing parent. All prevalence rates were calculated by substance, i.e. alcohol, cannabis and other illicit drugs.

Given the low number of parents in the study sample who frequently use cannabis or other illicit drugs, the association between parental substance use and child health indicators was only investigated regarding parental alcohol use. In particular, the association between living with at least one alcohol misusing parent (independent variable) and a variety of health indicators among their children (dependent variables) was assessed by building (weighted) logistic regression models for each of the selected health outcomes separately, while taking into account gender, age of the child and the household's socio-economic status as confounding variables. A full regression model that contained all main effects was constructed for each health indicator. The main effects considered were living with at least one substance misusing parent, the child's gender, (the linear effect of) age of the child and (the linear effect of) household socio-economic status. Then, backwards selection was used to simplify the model, using t-tests (significance level of $\alpha = 0.05$) to decide upon model simplification. Living with at least one substance misusing parent, the main independent variable, was not considered for exclusion. The model results are presented using odds ratios and corresponding 95% CIs. All analyses were performed using Stata/SE 10.1 (Stata Statistical Software, 2007).

Results

Exploratory analyses

Table 4 shows the prevalence of substance misuse among adults (18-64 years) and among parent(s) living with children (≤ 18 years) in the same household, as well as the prevalence of children (≤ 18 years) living with at least one substance misusing parent. Alcohol is the substance most frequently misused in the general population (9%, 95%CI: [8.4 - 9.6%]). The prevalence of alcohol misuse is much higher than the prevalence of frequent (≥ 10 days/month) cannabis use (1.2%, 95%CI: [0.9 - 1.4%]) or the past year use of other illicit substances (1.6%, 95%CI: [1.1 - 2.1%]). Parents who live with minor children misuse substances less frequently as compared with adults in the general population, although these differences are not statistically significant ($p < 0.05$). The prevalence of alcohol misuse among parents was 7.7%, while 0.7% of these parents used cannabis regularly and 0.6% had used other illicit drugs in the past year. The prevalence of children living with a substance misusing parent reflects the prevalence of substance misuse among parents, with 12% of the children living with at least one alcohol misusing parent. A low proportion of the children (0.8% and 0.5%, respectively) live with at least one parent who uses cannabis or another illicit substance.

Table 4. Prevalence of substance misuse among adults (18-64 years), among parents of children ≤ 18 yrs and the prevalence of children (≤ 18 years) living in a household with at least one substance misusing parent

	Adults		Parents		Children	
	Percentage	95%CI	Percentage	95%CI	Percentage	95%CI
Alcohol misuse (CAGE)	9.0% (N=15137)	[8.4%;9.6%]	7.7% (N=5284)	[6.8%;8.6%]	12.0% (N=5947)	[9.9%;14.0%]
Cannabis* (≥ 10 days/month)	1.2% (N=11645)	[0.9%;1.4%]	0.7% (N=4018)	[0.3%;1.1%]	0.8% (N=4443)	[0.3%;1.2%]
Other drugs** (past year use)	1.6% (N=5255)	[1.1%;2.1%]	0.6% (N=1850)	[0.1%;1.2%]	0.5% (N=2069)	[0.1%;1.0%]

* only available for 2004-2008; ** only available for 2008

Regression analyses

The results of the logistic regression models are summarized in Table 5. Odds ratios and 95% CIs are displayed for the main independent variable, i.e. living with at least one parent who misuses alcohol, and any significant confounding variables. The results are in line with our hypothesis that having a parent who misuses alcohol is associated with worse health outcomes among the children. However, these differences were not statistically significant, except for the association with postponing the use of health care services and being subject to passive smoking at home. The odds for postponing health care interventions were 1.58 times higher in households with at least one alcohol misusing parent [95%CI: 1.01 - 2.49], while the odds for exposure to passive smoking at home were 1.95 times higher in these households [95%CI: 1.31 - 2.89]. Also, daily smoking and alcohol overconsumption (≥ 15 units/week) in children 15 to 18 years old was clearly more common (although not significantly) among children who were subject to parental alcohol misuse in comparison with adolescents whose parents do not misuse alcohol.

Table 5. Association between living with at least one alcohol misusing parent and a set of health outcomes (at individual or household level) in children.

Health indicator	Independent variables	N	OR	95%CI
Mental health status	<i>Alcohol misusing - parent</i> [†]	953	1.11	[0.61;2.01]
	<i>Male</i> [‡]			
	<i>Age</i> [§]			
	<i>Household SES</i> [§]			
Suffering from a chronic illness	<i>Alcohol misusing - parent</i> [†]	3087	1.07	[0.71;1.61]
	<i>Male</i> [‡]			
	<i>Age</i> [§]		1.04	[1.02;1.07]**
	<i>Household SES</i> [§]			
Overweight	<i>Alcohol misusing - parent</i> [†]	3874	1.09	[0.61;1.93]
	<i>Male</i> [‡]		1.55	[1.02;2.36]**
	<i>Age</i> [§]		0.87	[0.83;0.90]**
	<i>Household SES</i> [§]		0.64	[0.50;0.82]*
Eating two portions of fruit daily	<i>Alcohol misusing - parent</i> [†]	4935	0.91	[0.68;1.21]
	<i>Male</i> [‡]			
	<i>Age</i> [§]		0.94	[0.93;0.96]**
	<i>Household SES</i> [§]		1.38	[1.23;1.56]**
Alcohol over-consumption (>15 units weekly)	<i>Alcohol misusing - parent</i> [†]	924	1.47	[0.64;3.38]
	<i>Male</i> [‡]		5.54	[2.57;11.9]**
	<i>Age</i> [§]		1.75	[1.30;2.36]**
	<i>Household SES</i> [§]			
Daily smoking	<i>Alcohol misusing - parent</i> [†]	922	1.66	[0.90;3.06]
	<i>Male</i> [‡]			
	<i>Age</i> [§]		1.47	[1.17;1.87]**
	<i>Household SES</i> [§]		0.75	[0.57;0.98]*
Postponing health care utilization+	<i>Alcohol misusing - parent</i> [†]	4917	1.58	[1.01;2.49]*
	<i>Household SES</i> [§]		0.58	[0.49;0.68]**
Passive smoking+	<i>Alcohol misusing - parent</i> [†]	3019	1.95	[1.31;2.89]**
	<i>Household SES</i> [§]		0.41	[0.34;0.49]**

* Significant at $p = 0.05$, ** significant at $p = 0.01$

+ Outcome at household level

† Yes versus No

‡ Women versus Men

§ Category $i+1$ versus Category i

Discussion and conclusion

The present study using data from the Belgian HIS 2001-2004-2008 indicates that 12% [95% CI:9.9–14.0] of the children (18 years and under) live with a parent who is/was a problem drinker as measured with the CAGE, whereas less than 1% of these children live with a cannabis using parent or a parent that uses other illicit drugs. The analyses revealed that the subpopulation of parents (18 to 64 years old) who live with their children are less prone to psychoactive substance misuse compared to the same age group within the general population. This finding can be explained by either an effect of self-selection, with substance misusers being more likely to have broken up with their partner or to be less inclined to found a family and take up domestic and caring responsibilities, or by a protective effect of parenting on substance misuse. Alternatively, this finding can be explained by an increased social desirability bias regarding reporting substance misuse in case children are involved.

The associated risk of harm to the children could only be assessed for parental alcohol misuse as a result of the very low prevalence rates of parental cannabis and other illicit drug use within the general population. Although the results show a tendency towards adverse effects of parental alcohol misuse on children's health and health behaviour, no strong (significant) relationships could be observed. However, two health outcome indicators at household level (i.e. being subject to passive smoking and postponing health care at household level) were significantly related to parental alcohol misuse and may impact negatively on children's health as well.

Several (complementary) explanations can be put forward to explain the absence of strong associations between parental alcohol misuse and children's health. First, substance misusing parents who pose the highest risk of harm to their children are less likely to be included in the study as they may have refused study participation (Demarest et al., 2012), as they are more likely to be institutionalized or homeless and hence non-eligible (Van Oyen et al., 1997), and as they may no longer live with their children (Meier et al., 2004). Second, the validity of self-reported data on sensitive and highly stigmatized behaviour such as substance use has been questioned. In particular, self-reporting has been shown to be less valid when it concerns highly stigmatized drugs such as heroin and cocaine, which may also partially explain the very low prevalence rates of illicit drug use by parents (Demarest et al., 2012; Harrison, 1997). A third limitation concerns linking parental alcohol misuse as measured using the CAGE, which is an instrument to identify lifetime alcohol problems, with children's current health and health behaviour. This implies that in this study parents have been 'classified' as 'alcohol misusing parents', even if their alcohol misuse took place before

they became parents. All explanations given imply a dilution of the association between parental substance misuse and children's health.

Accurate prevalence estimates are essential to govern policy-making and to support the implementation of interventions and preventive measures. The study clearly indicates that obtaining population-based estimates of the number of children living with parental substance misusers poses several challenges. In particular, the study points at the necessity to provide estimated risks of potential harm alongside the typical prevalence estimates. Prevalence estimates regarding alcohol dependence or misuse strongly depend on the case definitions used, and are not informative in itself regarding the expected public health impact. Further research using adequate case definitions and targeted study designs are recommended to estimate the prevalence of parental substance misuse as well as the associated health effects on children in Belgium.

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2.3 Parental substance use and associated risks for children's development: a review of the literature and available data from Belgium

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Introduction

Parental substance misuse is associated with multiple risks for unborn and developing children. Alcohol and drug use during pregnancy as well as growing up in an addicted family are challenges to consistent and emotionally involved parenting and prosperous child development. Due to the assumed harmful effects of substance use during pregnancy and childhood, the combination of parenthood and substance misuse is socially condemned and considered as irresponsible behavior. Yet, some drug addicted parents seem to manage quite well in bringing up their children and some children do not experience major developmental problems (Cosden e.a., 1997). The psychological, behavioral and developmental problems (e.g. withdrawn or aggressive behavior, attention and concentration difficulties, attachment problems) that are often reported among these children (Barnard & McKeganey, 2004), are more likely to be the result of an 'addicted lifestyle' than of parental substance use per se. For, developmental problems will depend to a large extent on social support, children's personality and character and the presence of other protective factors.

Health and psychosocial risks associated with parental substance misuse

Growing up in a substance misusing family

Parenthood among substance misusers can be considered problematic, since dependent persons are preoccupied with scoring and using drugs (Vanderplasschen e.a., 2002). Consequently, the care for and upbringing of their children is at risk to shift to the background as parental availability and involvement are affected by their parents' intoxication, their varying and unpredictable mood swings and chaotic lifestyle. This may result in unsafe playing situations, an unhealthy or unadjusted diet, access to dangerous products (e.g. medication, methadone, injection material), poor hygiene and limited medical follow-up of young children (Barnard & McKeganey, 2004).

In the Netherlands, the situation of children of drug addicted parents has been studied extensively in the 1990s. One study showed that emotional neglect is reported in approximately one in three families, while physical or sexual abuse occurs in about 10% of these families (Gunning, 1998). Consequently, a substantial number of children of drug addicted parents are – temporarily or for a longer period of time – separated from their parents and placed in foster families, homes or institutions. Recent research among substance misusing women has demonstrated that the best predictors for mother to be separated from their children are: symptoms of depression, current or past involvement in prostitution, a history of homelessness, living together with a substance misusing partner and previous imprisonment (Gillchrist et al., 2009). Previous research has shown that children who grew up apart from their families of origin displayed more problem behavior and developed less well compared with children who were brought up by their own parents (Groeneweg & Lechner-van de Noort, 1988; Tyler et al., 1997). These observations have stimulated the support of substance misusing families at home, under the condition that the children's integrity is not jeopardized. The reunification of mother and child after a period of separation can be problematic, given the stigmatization of substance misusing parents and the difficulties they may experience with setting boundaries for their children (e.g. overindulgence or rigid parenting). Also unemployment and psychological problems can affect adequate parenting (Vanderplasschen, Autrique & De Wilde, 2010). Long-term (residential) treatment, family and employment support and continuity of care contribute to effective family reunification.

Drug addicted mothers are often on their own for raising their children. They often have a limited social network, the father is absent and they have instable or even violent partner relationships. Due to relational problems and traumatic experiences during their own childhood, many substance misusing women suffer from psychological and emotional problems (Vanderplasschen e.a., 2002). They may further lack adequate parenting skills and knowledge about children's development. Research has shown that compared with non-substance using controls, drug addicted mothers are more rigid, less responsive and also less emotionally involved in the contacts with their babies, which may interfere with building up secure attachment relations (Barnard & McKeganey, 2004). In addition, substance misusing mothers appeared to punish their children more frequently, had less discussions with their children, gave more often negative comments on their children's behavior and showed less prosocial parental skills (Vanderplasschen et al., 2010). Due to mood swings, they often give contradictory messages to their children: for example, "I love you", shortly followed by "Get out here. I never want to see you again".

Substance misusing families are organized to cope with and abate the addiction of the parent(s). Co-dependence and parentification have often been reported among non-substance misusing family members (Bancroft & Wilson, 2007). Co-dependence implies that most energy and attention goes to the addicted parent and that the family members organize their life to the rhythm and demands of the addicted parent(s). Parentification refers to the frequently observed situation that one or more (young) children take up (age-inadequate) parental tasks in the family, such as cleaning, caring for younger siblings or shopping. The great loyalty of these children to their addicted parent(s) is striking and they often cooperate actively in preserving the family secret from the outside world (e.g., by not inviting playmates, staying at home).

In addition to the above-mentioned psychosocial problems, substance misusing families often hold an unfavorable socio-economic position, which is characterized by unemployment, financial problems, poverty and the risk of arrest or imprisonment, as they are often involved in illegal activities (Barnard & McKeganey, 2004). Fear of negative social reactions and potential harmful effects of substance use on children's development and the ever-present threat of outplacement of the children feed substance misusing parents' feelings of guilt and shame. Substance misusing mothers do not enter drug treatment or child and welfare services as they fear to be blamed for their substance use (Vanderplasschen et al., 2010). Feelings of guilt and shame may be further reinforced by their children's reactions/behavior (e.g. babies that do not want to be cuddled/boys' hyperactive behavior), which are often interpreted as signals of rejection although these reactions may have other causes.

Still, many substance abusing families do feel responsible for their children and make use of various strategies (e.g. no drug use in the presence of their children, appeal to grandparents/neighbors for taking care of the children when using heavily) to protect their children for the risks of their lifestyle. Addiction should be regarded as a chronic, relapsing disorder, including periods of controlled use or even abstinence but also periods of excessive use (Barnard & McKeganey, 2004). Support for these children needs to anticipate these potential risks. Adequate parental functioning has been demonstrated to be associated with the presence of a supportive social network (e.g. grandparents, friendly neighbors), controlled/stabilized substance use, maintaining family rituals (e.g. dining together in the evening, go on holidays together), the presence of a reliable and recurring father figure and having a stable relationship, proper housing and employment (Vanderplasschen et al., 2002).

Reported developmental problems among children of substance misusers

During pregnancy, the neonatal period and the first year of life children of substance misusing parents are at increased risk of various developmental problems. Prenatal exposure to particular drugs, such as amphetamines, cocaine, heroin, alcohol and tobacco, has harmful effects on the developing nervous system. Substance use can cause premature birth, growth retardation (low birth weight, small height and small head circumference) or even pre- or perinatal mortality. Opiate use during pregnancy causes Neonatal Abstinence Syndrome (NAS) in 60 to 90 percent of the cases, a state in which the neonate suffers from specific withdrawal symptoms such as accelerated breathing, diarrhea, spasms, fever, tremor and a disturbed sleeping pattern (Hunt et al., 2008). Children who were exposed to cocaine or amphetamines during pregnancy often demonstrate high arousal and an agitated state during the first months of life: they are more restless when sleeping, are more irritable, refuse to be cuddled, are not easily fed and are less alert and responsive. Developmental retardation among children of substance misusing parents is predicted by prematurity, longer hospitalization after birth and no participation in drug treatment by their mothers during pregnancy or the neonatal period (Cosden et al., 1997).

After the first year of life, a more diverse pattern of symptoms can be observed among children of drug misusing mothers: retarded social, cognitive and emotional development, behavioral problems, growth retardation, motor and neurological disorders, attention and concentration problems, impulsiveness, hyperactivity and a delayed linguistic development (Hunt et al., 2008; Barnard & McKeganey, 2004; Cosden et al., 1997). These children appear to be less obedient and less responsive and show more maladjusted behavior. Internalizing problem behavior (e.g. withdrawal, depression, anxiety) has often been reported (among girls in particular), while externalizing problems (e.g. aggression, inadequate impulse control, anti-social behavior) are more common among boys (Gunning, 1998). Absence of internalizing or externalizing problem behavior during childhood has been found to be an important predictor of functional recovery in adulthood (Skinner et al., 2009).

Children of substance misusing parents often miss safety and structure, which are important prerequisites for secure attachment. Disillusions, false promises and changing living conditions are frequently part of their lives, which may affect these children's socio-emotional development (Bancroft & Wilson, 2007). This is expressed in tantrums, mood swings, disorganized play, denial and dissociation of feelings, psychosomatic disorders, learned helplessness, social isolation, feelings of shame and guilt, negative self-evaluations and problems with intimacy. Learning disabilities, attention and concentration disorders and behavior problems are often seen in school-age children of drug addicted parents. A

significant proportion of these children repeat a class or face difficulties in social interactions with peers due to their inappropriate behavior (Barnard & McKeganey, 2004). Misbehavior, bullying, truancy, delinquency and substance use are more prevalent among children (8 to 17 year old) of drug addicted than among peers from non-substance misusing families. Ultimately, these children are at increased risk to copy their parents' destructive behavior and to become a new generation of addicts. Recent studies have shown that substance misuse and dependence are twice as high among (young adult) children of drug misusing parents in comparison with the overall prevalence of substance related problems in this age group (Haggerty et al., 2008).

Resilience and protective factors

Despite the above-mentioned problems and risks, Cosden and colleagues (1997) found no signs of significant abnormal motor or cognitive functioning in two in three children (68%) who were exposed to illicit drugs during pregnancy. In comparison with clinical samples or control groups, children of drug addicted parents have relatively few developmental problems (Barnard & McKeganey, 2004). This has been attributed to the astounding resilience that many of these children display, which has been associated with children's personality, self-evaluation, characteristics as alertness, responsiveness, responsibility and autonomy, and environmental factors such as the presence of family rituals, positive role models, an extensive group of friends and support from their social network. Even children who have initially experienced major problems have shown to be resilient (Cosden et al., 1997).

Not all children of drug addicted parents have been prenatally exposed to drugs. It is assumed that the environment in which children grow up has a major developmental effect compared with the exposure to drugs during pregnancy (Howell et al., 1999). Lack of safety and structure and the absence of positive role models can thoroughly disrupt children's psychological and socio-emotional development. Also, risk factors in the wider environment, such as a lack of social support, stigmatization or living in a disadvantaged neighborhood, may influence these children's development negatively.

In conclusion, drug addiction is often but not inevitably associated with poor parenting: dependence should be regarded as a challenge to adequate parenting, but it does not necessarily hinder 'good enough' parenting (Marcenko et al., 2000). Children's development is not determined by objective, measurable behavior or the presence of specific risk factors, but rather by how children experience this behavior and how they cope with it in a creative way.

Data on the prevalence of parental substance use and associated risks in Belgium

Information on the prevalence of parental substance use in Belgium is limited and fragmented. The first estimation of the number of children of drug addicted parents dates back to the 1990s, when the incidence of the number of newborns of drug addicted mothers in hospitals in the capital city of Brussels was estimated to be around 200 (Pirette, 1996). Based on an extrapolation of these data to the rest of Belgium, the incidence of 'drug addicted babies' was roughly estimated to be around 1000 per year. However, up to now no national data are available on the prevalence of substance use during pregnancy nor on the incidence of neonatal abstinence syndrome/symptoms (NAS) or other substance misuse-related symptoms among newborns. In the United States, it has been estimated that 5% of all future mothers consume illicit drugs (including marijuana) during pregnancy (Howell et al., 1999).

Based on an early study on parenthood and drug addiction in the Netherlands (Groeneweg & Lechner-van de Noort, 1988), it appeared that 25 to 40% of all drug addicted men and women had children. Similarly, the prevalence of parenthood among drug misusers in diverse treatment settings in Belgium was estimated to be between 25 and 33%, with the highest prevalence in methadone maintenance centers (Vanderplasschen et al., 2002). The prevalence of parenthood is higher among female than among male drug users and trend studies have shown that the number of substance misusing parents has increased during the last two decades. Estimations of parental substance misuse from the United Kingdom show that 2 to 3% of all children under the age of 16 live together with a drug addicted mother or father (Barnard & McKeganey, 2004).

The afore-mentioned estimations may be biased to a certain extent, since a considerable and unspecified 'dark' number of children of substance misusing parents remains hidden for the registering authorities and services. Stigmatization related to drug addiction and parenthood may keep drug users from contacting services or from revealing substance use (Vanderplasschen et al., 2010). Drug addiction may also remain unobserved by child welfare agencies, while drug misuse services may pay limited attention to parenthood. Additional bias may result from the fact that these families are often in contact with various child, welfare and health care services, causing double countings as well as underscoring of this phenomenon. Finally, the comparability of estimations may be hindered by differing definitions of substance misuse across studies and countries.

Based on the few available resources in Belgium, we have analyzed a number of databases (MPG, TDI, VVBV) regarding the prevalence of parental substance use and associated

health and psychosocial problems. Few databases include the question whether one has children (except studies that have used the EuropASI from which parenthood can be derived indirectly). Some assess drug users' living situation and whether one lives alone, alone with child(ren) or together with partner and child. The latter variable does not provide information on natural children that do not longer live together/have contact with their parents, but only on the number of drug misusers who live together with (their partner's) children when entering treatment. This variable is incorporated in the Treatment Demand Indicator (TDI), a common registration tool for all treatment services for drug users in Belgium and across Europe, and in the DARTS-registration (Drug Aid Registration System) of the VVBV (Vlaamse Vereniging van Behandelingscentra Verslaafdenzorg), the umbrella organization of all specialized drug treatment services in Flanders.

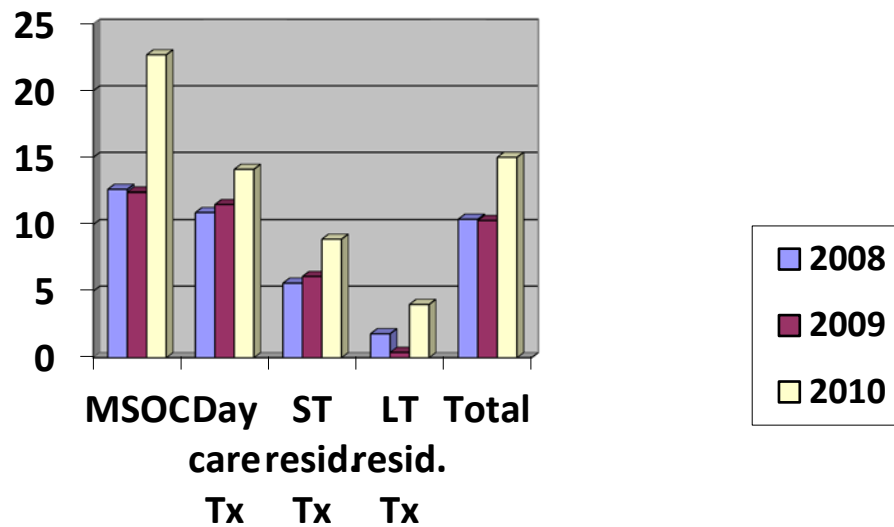
Number of persons with children in specialized drug treatment in Flanders

The most recent report of the VVBV (2011) shows that the number of clients who live together with children upon entering treatment in medical-social care centers (MSOC), day care centers, crisis intervention centers (CIC) and therapeutic communities in Flanders was between 10 and 15% in the period 2008-2010 (cf. table 6). Most of these persons live together with their partner and children, while less than one in five lives alone with his/her child(ren). The number of persons with children varies considerably between in- and outpatient treatment settings: around 15% of all new clients in outpatient drug treatment live together with their child(ren), compared with around 7% in short-term residential treatment and less than 4% in long-term residential facilities (cf. Figure 5). The number of persons living with children upon entering treatment was considerably higher in 2010 across all treatment modalities. However, before this can be considered to be a trend this pattern needs to be confirmed in the 2011 data.

Table 6. Living situation of clients entering drug treatment in Flanders in the period 2008-2010 (VVBV, 2011)

Living situation	2008	%	2009	%	2010	%
With partner and child(ren)	322	8,8%	361	8,8%	550	12,9%
Alone with child(ren)	57	1,6%	63	1,5%	90	2,1%
Alone with partner	477	13,0%	512	12,4%	486	11,4%
With parents/family	1365	37,3%	1585	38,5%	1472	34,7%
With friends	108	3,0%	431	10,5%	171	4,0%
Alone	886	24,2%	1120	27,2%	997	23,5%
Other	441	12,1%	47	1,1%	482	11,3%
Total	3656	100,0%	4119	100,0%	4248	100,0%

Figure 5. Proportion of clients living together with children in various treatment settings (medical-social care centers, day care centers, short-term (ST) and long-term (LT) residential treatment (Tx)) in the period 2008-2010



The relatively low number of substance misusers who live together with children when entering treatment (10-15%) as compared with the estimation that 25 to 33% of all drug addicts have children, indicates that many drug addicts have lost custody or are no longer caring for their children when starting treatment. This is not surprising as many drug addicts have been misusing drugs for years and since they enter treatment at a crisis moment or when they are doing badly.

Although the variable 'number of children' is not included in the DARTS-registration, most participating agencies register whether clients who enter treatment have children or not. A telephone survey among these drug treatment services revealed that approximately 30% of all registered clients in 2010 had one or more children (Van Deun, pers. comm, 9-5-2012). In outpatient substitution treatment, nearly half of the clients have children. Also, the proportion of women with children was found to be 10% higher than among men (VLIS, 2011). Extrapolation of these findings to the total population in specialized drug treatment services in Flanders (n=8000) reveals that at least 2400 Flemish children have one or two (natural) parents who are treated for drug problems. Most of these children (about 2 in 3) are no longer cared for by their natural parents. Given the underscoring of the number of drug addicted parents and the fact that drug treatment services only cover part of all problem drug users, the real number of children of drug addicted parents is probably a multiple of 2400.

Characteristics of substance misusing parents from three different treatment settings

The EuropASI has been used in various studies among treatment populations by the Department of Orthopedagogics of the Ghent University. This well-known, validated instrument allows to select persons with and without (natural) children from diverse samples of substance misusers. Below, we present a secondary analysis of data from three recent PhD-studies: one among residents in drug-free therapeutic communities (Goethals et al., 2013), one among alcohol and drug users entering substance abuse treatment in psychiatric hospitals (Colpaert et al., 2012) and one among opiate dependent individuals five years after starting methadone treatment (De Maeyer et al., 2011).

Parenthood among opiate dependent persons in methadone treatment

A study of 159 opiate dependent individuals showed that half of this sample (50.9%) had children (De Maeyer et al., 2011). Slightly more than half of them (27%) were living together with their children five to ten years after they had started substitution treatment. The majority of these persons (47%) had one child, 28% had two children, 16% had 3 children and 9% had more than three children.

The average age of persons with children was higher – although not significantly – than the average age among participants without children (37.5 vs 35.7 years). Significantly more women had children (65 vs. 46.2%) ($\chi^2(df=1)=4.226$, $p=0.040$). Persons with and without children did not differ on any of the indicators of addiction severity or quality of life, except that persons who have children had significantly more often a stable relationship ($p<0.05$) and were more often married or divorced ($p<0.001$). Moreover, the subsample with children was more likely to have debts ($p<0.05$) or to have consulted a doctor for physical health problems recently ($p<0.05$). Finally, the severity of judicial problems was slightly (but significantly) more severe among subjects with children.

Parenthood among drug misusers entering therapeutic community treatment

Of all 178 participants entering therapeutic community (TC) treatment in five TCs in Flanders, 25.8% had children (Goethals et al., 2013). Only 13% of the residents with children lived together with their (partner and) children upon entering treatment, while 34,7% lived together with their (partner and) children during the three years before TC treatment. Most of the residents with children (76%) stated they have (had) a strong, personal relationship with their children.

A comparison of the characteristics of TC residents with and without children showed no significant gender differences, although 23.8% of all male and 37% of all female residents had children. Residents with children are significantly older when entering TC treatment (30.8

vs. 26.4 years) and are more often divorced ($p < 0.001$). Moreover, they have been employed continuously for longer periods of time ($p < 0.001$) and were less often involved in illegal activities in the period before entering the TC ($p < 0.05$). Residents with children had been misusing alcohol ($p < 0.05$), amphetamines ($p < 0.05$) and multiple substances ($p < 0.05$) for significantly longer periods, but no differences in addiction severity were observed. Apparently, the motivation for treatment differed between residents with and without children, as persons with children scored significantly lower on the subscale 'circumstances' (indicating that more external factors affected their decision to enter treatment) ($p < 0.05$) and scored higher on the subscale 'suitability' (indicating that they saw TC treatment as a more suitable intervention than the group without children) ($p < 0.01$). The latter observation may point at higher and stronger external motivation among TC residents with children. However, it is not clear if this also resulted in longer length of stay in treatment among the latter residents.

Parenthood among alcohol and drug users entering substance abuse treatment in psychiatric hospitals

The proportion of clients with children is significantly higher among alcohol than among drug misusers (Colpaert et al., 2012). Overall, 58.5% of all persons entering substance abuse treatment in psychiatric hospitals ($n=258$) had children: 69.9% of all alcohol misusers, 27.3% of all drug misusers and 26.5% of persons who misused alcohol as well as drugs ($p < 0.001$). Less than one in three clients (30.6%) lived together with their (partner and) children in the three years preceding treatment entry and this proportion was much higher among alcohol misusers than among drug or dual misusers ($p = 0.01$).

Substance misusers entering treatment who lived together with their children during the three years preceding the treatment episode were more likely to be older (43.6 vs. 40.6 years)*, women (44.3 vs. 24.4%)*, employed (38 vs. 22.9%)* and to have a longer length of amphetamine abuse (6.9 vs. 3.7 years)*. Furthermore, these persons were less likely to have followed treatment for drug problems previously (32.4 vs. 16.5%)**, to have attempted suicide during the past 3 years (60.9 vs. 78.5%**) and to have higher ASI severity scores regarding employment*, drug** and judicial problems***. Persons who lived together with children were more likely to have been abstinent after a previous treatment episode as compared with persons not living together with their children (88.9 vs. 77.5%, $p = 0.058$). Finally, the overall perception of quality of life was better among persons cohabitating with children, but this difference was only significant on the subdomain 'environment' of the WHOQOL-bref**.

* $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$

Conclusion

The literature review as well as the secondary analysis of available data indicate that parental substance use is associated with various health and psychosocial risks for developing children. The link between parental substance use and problems among children is mediated by a variety of individual, family and environmental factors that may further challenge or protect these children. Family support, maintaining rituals, controlled substance use, and children's personality and way of coping with the situation have been identified as protective factors among children of substance misusing parents. Conversely, developmental problems have been associated with prenatal substance use, inheritable vulnerability, psychological problems of the mother, instable relationships, poor housing or homelessness and having two substance misusing parents (Vanderplasschen et al., 2010).

Many drug addicted parents lose custody of their children at some point (but may be reunified later) and do not longer care for their children. The secondary analyses of available treatment samples showed that only half to one third (in TCs even less than 15%) of these parents are still living with their children upon treatment entry. This may be due to poor parenting skills and lack of stability in these families, but research has shown that children of substance misusing parents do not necessarily do better when they grow up in foster families (Groeneweg & Lechner-van der Noort, 1987). Therefore, separation of children and their parents in substance misusing families should be a thoughtful decision, taking into account the potential developmental risks but also the potential damage caused by this decision. Stigmatization often holds substance using parents back from revealing the extent of their drug use or unfolding parenting issues or difficulties. A supportive, continuing approach, including clear guidelines when parents cannot longer take care of their children and strategies to prevent or minimize substance misuse in the growing generation and to enhance a stable and prosperous development, is probably a better alternative than the prevailing unspecified and rather controlling approach of substance misuse in families.

Make parental substance use a subject of discussion is one important step in caring for these children in a more appropriate way and for reducing the dark number of these so-called "forgotten children". The assessment of this phenomenon in treatment samples shows that a large part of persons that follow alcohol treatment in psychiatric hospitals and outpatient methadone treatment have children (De Maeyer, 2011; Colpaert, 2012; Goethals, 2013). This proportion is greater among alcohol than among illicit drug users and more alcohol users still live together with their children. Therefore, efforts are necessary to involve (adult) children during treatment, but also to offer these (often) co-dependent persons appropriate help and support. The observation that substance misusers with children are usually older

than childless persons may be an indicator that these persons wait longer to contact treatment services or that being a mother/father may play a role in managing one's substance use problems. These persons do not appear to be in such marginalized positions (e.g. longer periods of employment, less social and judicial problems), especially when they are still living with their children before they enter treatment. Interestingly, data among TC residents showed a strong external motivation among persons with children, indicating that their motivation to change is closely related to their role as a parent/partner (Goethals, 2013). Addressing this dual position during treatment is a prerequisite to help these individuals and families as the power for change and recovery is not only situated in the individual, but in their surroundings and social network.

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3. Descriptive map of stakeholders involved in prevention and treatment of youth addiction and the use of guidelines in prevention and treatment services.

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Introduction

In Belgium, drug treatment and harm reduction services have reported recently an increasing number of young people who experience problems as a consequence of their drug use. A prevalence of 13% of all patients (N=792) in treatment were younger than 20 years old in 2011 (Antoine 2011). Given the fact that substance abuse among minors rarely occurs without other psychiatric, developmental, and/or social problems (Rowe 2010), the operationalization of specific and validated prevention and treatment initiatives for substance abuse among minors is important. The dissemination of scientific evidence about routine practice in substance abuse treatment may facilitate this development (Autrique et al. 2008).

In recent years, evidence-based guidelines were developed by Belgian organisations to be implemented in the treatment of substance related disorders and the prevention or harm reduction of substance use (Chevalier et al. 2011; Matthys et al. 2010; Michels et al. 2011; VAD 2008). Nevertheless, research showed that there is a substantial gap between practice and scientific research in the prevention, diagnosis and treatment of drug users in Belgium (Autrique 2008). On the one hand, most of the programs and interventions used in substance abuse treatment lack scientific evidence on their effectiveness. On the other hand, only a few interventions that are proven to be effective, are applied. As a consequence, most of the programmes and initiatives are developed regardless of scientific evidence and on the basis of individual practice (Miller 2006).

The organization of the services specifically designed for children (<18y) is complex in Belgium since many different types of services, different governments and governmental levels are involved. To develop more knowledge about the availability and the organisation of substance abuse treatment for children and youngsters (<18 years old), this chapter aims to answer two research questions. The first research question aims to describe *which services are involved in the prevention and treatment of drug using children and youngsters (<18y) in Belgium*. The second research question aims to describe if *guidelines and/or protocols are integrated in the prevention and treatment of drug using children and youngsters (<18y)*. These objectives are mainly based on previous research about evidence-based practice in

substance abuse treatment in Belgium conducted by Autrique and colleagues (Autrique et al. 2007). In order to meet these objectives, both a thorough review of databases (pre survey mapping) and a web based survey were conducted.

Methods

Sample

In this study, the study sample consisted of *Belgian drug prevention, diagnosis and treatment services working with minors*. Therefore, a database of drug services (pre-survey mapping) was composed through the consultation of different registries, such as the Belgian social map of the federal government, the Belgian Treatment Demand Indicator Registry, the iDA (information on Drugs and Alcohol) websites of the Flemish and French community, the Network of Clinical Care path (NKZ), The federal addiction fund (FBV), the Exchange on Drug Demand Reduction Action (EDDRA) database of the European Monitoring Centre for Drugs and Drug Addiction 2010, the International Clinical Trials Registry Platform (ICTRP), and the Pompidou Group Registry on Drug Research. In addition, several relevant research reports were screened for additional specialised services (Autrique et al. 2009; Lievens 2008). For each service specific information was included in the database. This database consists consequently the main characteristics of the different services; such as contact information, addiction problem, target group, prevention or treatment methods and sector. The final database was then reviewed by experts from the regional focal points of the EMCDDA REITOX network (VAD; Eurotox; OPGG).

Several inclusion criteria were used to define the sample of services, such as alcohol, illicit drugs, prevention, diagnosis, treatment and minors. Forensic (psychiatric) services and services only working with adults were not taken into account (Coyne 1997). Noteworthy is that the identification of diagnostic services was extremely difficult in this phase of the study. For this reason, it was hypothesized that the diagnosis of drug users is part of the interventions provided by the treatment facilities. As a consequence, a distinction was made only between prevention and treatment services.

In total 71 prevention and 70 treatment services were identified (N= 141). Among these 141 services, 41 prevention and 46 treatment services were identified as working with minors and/or their parents (N= 87). It should be noted that different departments (located in several communities) belonging to the same group were considered as one service. This assumption is made because most of these departments (e.g. the outpatient treatment facilities of De

Sleutel in Antwerp, Ghent, Bruges, ...) have a common treatment approach and are using the same therapeutic methods.

While drug specific registries were used to identify the study sample of prevention and treatment services, it was not always clear whether the services were offering specific prevention or treatment for drug use. As a consequence, additional information was needed to contact only those services who provide drug prevention or treatment. To this end, the websites of the 87 services identified as working with minors and/or their parents, were consulted. In case the information on the website was not sufficient, the researchers tried to contact the specific service by phone. This resulted in the identification of 56 services which are currently working with drug using minors and/or their parents. Fifteen of them were related to prevention, 41 to treatment. The sample of the prevention services included general prevention services of different communities (Eeklo, Houthalen-Helchteren, Ternat) and specialized drug prevention services (whether or not integrated in specialized inpatient centres). The sample of the treatment services included specialized outpatient centres, specialized inpatient centres, low-threshold centres, psychiatric wards of general hospitals, psychiatric hospitals and one specialized hospital for cannabis abuse.

The instrument: a web-based self-administered questionnaire

A self-report questionnaire was used to investigate the organisation and the use of guidelines of services working with minors who are using (il)licit drugs. Given the fact that the sampling frame of this study was clearly defined, the method of self-reporting is appropriate (Hox and De Leeuw 2002). It was also decided not to analyse policy documents because these documents do not provide an insight in the daily practice of a specific service (Lievens 2008).

Web-based questionnaires have several advantages. Firstly, the respondents are able to complete the survey at the most appropriate moment and often provide the opportunity to complete the questionnaire in several phases. Secondly, the respondents are able to search for some additional information during the survey. In this study, the survey includes questions about the total number of full-time equivalents working at the service and the specifications of the guidelines used by the practitioners; information that is often not immediately available. Thirdly, the results cannot be distorted by the interviewer because there is no face-to-face contact (absence of interviewer-effects) (Billiet and Carton 2008). Fourthly, online surveys may create a situation in which the respondents feel relatively free and where the respondents are less concerned about how they appear to others. This results in less socially desirable answers (Frippiat and Marquis 2010). Besides these empirical reasons there are also a few pragmatic reasons for using a web-based questionnaire. In comparison with more

traditional paper-pencil and phone surveys, online surveys are less time consuming and less expensive (Heiervang and Goodman 2011; Lefever et al. 2007; Nagelhout et al. 2010; van Gelder et al. 2010). To benefit from mentioned features, it was verified whether the substance abuse services were having an email account and ready access to the internet (Kaplowitz, Hadlock, & Levine 2004; Sauermann & Roach 2013). This prior condition was fulfilled for all potential participants.

Data collection and analysis

Since drug prevention and treatment have different scopes and use different methods, two distinct surveys were developed. The questions of these surveys were based on previous research and surveys in this field (Autrique, Vanderplasschen, & Sabbe 2008; Autrique 2008; Autrique, Vanderplasschen, Broekaert, & Sabbe 2009; EMCDDA 2012; Foxcroft and Tsertsvadze 2011; Porath-Waller et al. 2010; Roona et al. 2003; Tobler et al. 2000; Tunis et al. 1994; VAD 2011; Willenbring et al. 2004; Young and Ward 2001). Then, the questions were reviewed by several external experts. Their comments were taken into account in order to improve the surveys (Billiet & Carton 2008). The final survey was translated in Dutch and French.

The questions were grouped in order to get information about facts (organization of the service, target groups, etc.), perceptions (knowledge and accessibility of guidelines and protocols in the services) and opinions (scientific research in their work practice). Both the prevention and the treatment survey started to query the facts, afterwards the perceptions and finally the opinions. Each group of questions was introduced with a small preamble (Billiet & Carton 2008). Given the focus, the terms guideline and protocol were clarified in the preamble of the first section on guidelines and protocols. Guidelines were defined as recommendations developed to help practitioners in choosing the appropriate care in specific situations, whereas protocols were described as documents having the objective to support practitioners in performing their caring tasks (ref). Multiple choice questions were alternated with closed and open-ended questions in a logic way. First the general questions and the easy ones, afterwards the more detailed, difficult and sensitive questions (Billiet & Carton 2008).

After the questions were developed, the surveys were programmed with LimeSurvey, an open source survey software tool. A paging web survey design (pacing) was used displaying the questions on successive screens instead of one long scrollable page (Peytchev et al. 2006). This mode provides more control on the responses because the respondents can be forced to answer certain questions before moving on to the next set of questions.

Furthermore, the respondents don't have to navigate through the different questions themselves (Billiet & Carton 2008; Nagelhout, Willemsen, Thompson, Fong, van den Putte, & de Vries 2010). Hidden routing instructions may reduce non-response due to navigation errors (Frippiat & Marquis 2010; Nagelhout, Willemsen, Thompson, Fong, van den Putte, & de Vries 2010; Peytchev, Couper, McCabe, & Crawford 2006). Visible routing, as the case in a scrolling design, allows respondents to choose their answers in order to minimize subsequent effort. Moreover, respondents need less time to complete the survey due to the automatically routing (Frippiat & Marquis 2010; Peytchev, Couper, McCabe, & Crawford 2006; van Gelder, Bretveld, & Roeleveld 2010). A progress indicator was added to the surveys which gives the respondents an idea of the total length of the questionnaire. The layout of the surveys and the routing of the questions in LimeSurvey were tested several times. Additionally, the research team checked the accessibility of these surveys with the most common browsers such as Internet Explorer, Mozilla Firefox and Google Chrome (van Gelder, Bretveld, & Roeleveld 2010).

The survey for the treatment facilities was launched in August 2012 whereas the survey on prevention services was launched in January 2013. All 56 services received an invitation through email to complete the survey (Lefever, Dal, & Matthíasdóttir 2007; van Gelder, Bretveld, & Roeleveld 2010). Fifteen invitations were sent to the prevention services, forty-one invitations to the treatment services. Each service received an invitation in its administrative language (French or Dutch). To prevent fraudulent respondents, the invitations included a link to the web-survey with a specific password. Since a username is assigned to each service, multiple entries from the same subject or questionnaire completions by others than the invited respondents are prevented. This measure provides an increased control about the identity of the services that completed the questionnaires (Lefever, Dal, & Matthíasdóttir 2007; van Gelder, Bretveld, & Roeleveld 2010). This strategy, however, does not guarantee the anonymity of the respondents. Nevertheless, confidentiality of the responses was assured.

The coordinator of each selected service was invited to complete the questionnaire by the beginning of March (5 weeks). The introduction of a web survey is extremely important because of the absence of an interviewer (Frippiat & Marquis 2010). Therefore, attention was paid to the purpose of the study, the theoretical and practical importance of the study, the reason of selection, the expected duration to complete the survey, the possibility to ask questions by phone or email and the identification of the commissioner of the study (Billiet & Carton 2008; Lefever, Dal, & Matthíasdóttir 2007). Furthermore, several questions were

provided with a clarification. Both the extensive introduction and the clarifications intended the reduction of the risk of misunderstanding (Frippiat & Marquis 2010).

It is known that web surveys have lower response rates in comparison with paper-and-pencil surveys (Heiervang & Goodman 2011; Kaplowitz, Hadlock, & Levine 2004;). Additionally, more and more surveys are launched through the internet. Consequently, it has become increasingly difficult for people to distinguish between commonplace opinion polls and in-depth scientific studies (Frippiat & Marquis 2010). Potential respondents may even think having received “junk mail” or “spam” (Frippiat & Marquis 2010; Kaplowitz, Hadlock, & Levine 2004). For this reason, certain measures were taken in order to maximize the response rate (Frippiat & Marquis 2010; Lefever, Dal, & Matthíasdóttir 2007; Sauermann & Roach 2013).

Firstly, although reminders have only a limited effect on the response rate (Frippiat & Marquis 2010; Lefever, Dal, & Matthíasdóttir 2007), a maximum of three reminders were send to (partial) non-respondents (Lefever, Dal, & Matthíasdóttir 2007; Sauermann & Roach 2013; van Gelder, Bretveld, & Roeleveld 2010). A delay of minimum 7 days was respected between each reminder (Sauermann & Roach 2013). Only one service indicated that it would not participate and received no further reminders. Also, the wording of reminder emails was changed to make a clear difference between a research invitation or reminder and “spam” (Sauermann & Roach 2013). Thirdly, the services that did not reply to the invitation after 2 reminders were called by the researchers (Frippiat & Marquis 2010; Sauermann & Roach 2013). Although incentives may have an effect on the total number of completed surveys (Frippiat & Marquis 2010; Sauermann & Roach 2013), previous research showed that there is not a significant effect on item nonresponse and the detailed information given through the answers (Sauermann & Roach 2013). Therefore, no incentives were provided in this study.

In total, 14 services completed the survey. This is a response rate of 25%. A substantial difference is noticeable between the prevention and treatment services. Only one prevention service completed the prevention survey. This is a response rate of only 7%. The treatment services however reached a response rate of 31%. Thirteen treatment services (hospitals, mental health centres and services with a NIHDI convention) out of the 41 completed the treatment survey. Only one of the services refused explicitly their contribution to the research.

Despite the low response rate, some services (21 out of the 56) started filling out but did not complete the survey. Therefore, it was decided to conduct a descriptive (qualitative) analysis of the surveys (Sauermann & Roach 2013). The closed-ended and multiple-choice questions were analysed using the statistical software integrated in LimeSurvey. The use of LimeSurvey has the advantage that a data file is compiled automatically. This procedure

simplifies the data transfer into a database for analysis (Lefever, Dal, & Matthíasdóttir 2007). A qualitative data analysis was conducted for the open-ended questions.

Results

The two research questions, introduced in the beginning of this chapter, are described here on the basis of both the pre-survey mapping and the web based surveys. Firstly, the organisation of the services working with minors who are using (il)licit drugs are described. Secondly, a description of the use of guidelines and the attitudes towards these guidelines in the prevention and treatment services are addressed.

Which services are involved in the prevention and treatment of drug using children and youngsters (< 18 years old) in Belgium?

In order to answer this research question, both the database of the identified services established in the first phase of the study and the (incomplete) results of the prevention and treatment web-survey, were used.

What are the target groups of these services?

Table 7 summarizes the target groups of the responding prevention services. It shows that eleven out of fifteen prevention services are targeting minor drug users. Both girls and boys can contact these prevention services. Nine services are exclusively working with minors. Six of them are open to the parents of minor drug users as well. Twelve services have prevention programs for both alcohol and illicit drug users. These programs are not limited to the prevention of alcohol and illicit drug use. They also intend to delay initiation, reduce the intensification of alcohol and illicit drug use and/or prevent escalation into problem use. The identified services are working in different sectors. Ten services are working together with schools in order to reach school students. Three are working together with the labor market, mainly those services that are working with youngster up to 25 years old. Seven services are reaching minors through youth-organisations and in the night life setting. Nine services are working specifically with vulnerable children in collaboration with various welfare services.

Table 7. Target groups of Belgian prevention services working with minor drug users in 2013

Prevention services	N (15)
Audience	
Minor drug users*	11
Parents	6
Missing	4
Substances	
Alcohol	12
Illegal drugs	12
Polydrug use	N/A
Other (tobacco, medicines, ...)	9
Missing	3
Sector	
School	10
Work	3
Culture	7
<i>Youth-organisation</i>	6
<i>Night life</i>	2
Welfare	9
Missing	4

*Four prevention services are welcoming youngster up till the age of 21-25 years old.

Table 8 indicates that 28 services provide treatment to minor drug users. Eleven of them are exclusively working with children and youngsters below the age of 18 years old. All services accept both girls and boys. Twenty-four out of the 28 services offer treatment for the parents of drug using children as well. Treatment of problematic alcohol use is provided by twenty-one services. Twenty-six services are providing treatment for illicit drug users. Polydrug use is treated by fifteen services and dual diagnosis by twelve of them.

More detailed information about the different types of illicit drugs is available for those services that filed out the web survey (13). All of these 13 services provide treatment for cannabis use, 9 for cocaine, stimulants and hallucinogens and 8 for opiate use, and for hypnotics and sedatives. More services (19) are providing outpatient treatment in comparison with inpatient treatment (9). This implies that minors can continue to go to school and practice their hobbies during the treatment program. Nine centres are providing drug treatment for minors who need more intensive support. The children and youngsters live at these facilities 24 hours a day for the duration of the treatment period.

Table 8. Target groups of Belgian treatment services working with minor drug users in 2013

Treatment services	N (41)
Audience	
Minor drug users	28
Parents	24
Missing	11
Substances	
Alcohol	21
Illegal drugs	26
Polydrug use	15
Dual diagnosis	12
Other (tobacco, medicines, ...)	15
Missing	13
Facilities	
Outpatient treatment	19
Inpatient treatment	9
Other	0
Missing	13

What services are they offering?

The different types of prevention and treatment are summarized in tables 9 and 10. Given the lack of response, the information on the different types of prevention is limited. Most of the services are providing universal prevention. A typical example is mass media campaigns. A minority of the services provide selective (3) and indicated (1) prevention. Selective prevention targets, on the one hand, subsets of the total population that are deemed to be at risk for substance abuse because of their membership to a particular population segment (eg young offenders, school drop-outs, or students who are failing academically). Indicated prevention, on the other hand, focusses on individuals and aims to prevent the development of dependence, diminish frequency of use and avert 'dangerous' patterns of substance use (EMCDDA,2009). Table 9 suggests that 4 services have early intervention projects. These projects can be situated between prevention and treatment and aim to identify problems in the early stages of drug use and want to facilitate referral towards appropriate treatment.

Table 9. Prevention types of Belgian prevention services working with minor drug users in 2013

Prevention services	N (15)
Prevention type	
Universal prevention	7
Selective prevention	3
Indicated Prevention	1
Early intervention	4
Missing	4

As mentioned above, most treatment services are outpatient centres. Only nine centres are providing treatment 7 days a week and 24 hours a day. Table 10 presents more detailed information about the different types of treatment in these centres. Data is available from 25 services. All of these treatment centres provide various therapy programs. All of them provide individual therapy, whereas twenty centres offer group therapy as well. Medical treatment (e.g. detoxification with methadone or buprenorfine) is provided by fifteen services. None of the centres offer substitution treatment for maintenance objectives. Eleven centres are involved in harm reduction and only 8 report specific re-socialisation programmes.

Table 10. Treatment types of Belgian treatment services working with minor drug users in 2013

Treatment services	N (41)
Type of treatment	
Therapy	25
<i>Individual therapy</i>	25
<i>Group therapy</i>	20
Medical treatment	15
Harm reduction	11
Re-socialisation	8
Other	20
Missing	16

Are guidelines and/or protocols integrated in the prevention and treatment of drug using children and youngsters (-18 year old)?

This research question aims to describe the use of guidelines in the drug services who are working with minors. In this respect, only the completed questionnaires of the web surveys were analysed. Due to the low response rate of the prevention survey, only the results of the treatment survey are discussed. As indicated earlier 13 services filled in the complete survey. First the attitudes of treatment services towards guidelines are reported. Then the use of guidelines, possible barriers in using guidelines and strategies to improve the use of guidelines.

To what extent are guidelines and protocols known in the treatment of drug using children and youngsters?

Half (7) of the respondents reported a positive attitude towards the use of guidelines in substance abuse treatment. The attitude towards the current tendency of more evidence based practice is mainly positive. Most of the respondents have confidence in the guidelines, as they guarantee the quality of treatment and improve the competences of the practitioners. Six respondents believe that evidence-based guidelines improve the treatment outcome. Three respondents indicated that evidence-based guidelines may restrict the professional's therapeutic autonomy. The opinions of the respondents are equally divided concerning the

positive attitudes of the directors and responsible persons towards guidelines. Five respondents agree with this proposition and five of the respondents disagree. Most respondents report also a difference in attitudes between various disciplines and professions. Furthermore, a similar disagreement (5 'agree' vs. 5 'not agree') exist about the proposition that guidelines are taking into account the needs and expectations of the patients. Moreover, clinical experience is considered as equally important in daily practice by most of the respondents (10).

To what extent are guidelines and protocols used in the treatment of drug using children and youngsters?

In eight of the thirteen responding services, guidelines for the treatment of substance abusers are available. The implementation of the guidelines is monitored in almost half (6) of these services. Although all of them have specific cannabis guidelines or protocols, no specific guidelines are used for treatment related to alcohol, opiates, cocaine, stimulants, hallucinogens or hypnotics. Five respondents report that the guidelines used in their services are based on scientific literature in general or existing guidelines such as the 'Multidisciplinaire richtlijn: stoornissen in het gebruik van alcohol' (Landelijke stuurgroep multidisciplinaire richtlijnontwikkeling in de GGZ 2009); the 'Management of cannabis use disorder and related issues: a clinicians guide' (Copeland et al. 2009); the 'Community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people' (National institute for health and clinical excellence 2007) and 'Substance abuse: clinical issues in intensive outpatient treatment' (Center for substance abuse treatment 2006). Only three services report that these guidelines contain specific recommendations regarding the treatment of minor drug users.

Both drug using minors and working with guidelines have their specific barriers that can explain this low number of specific guidelines or recommendations regarding the treatment of minor drug users. Firstly, the context of minors (family, development of the children, professional secrecy and the notion 'child in danger') makes the provision of drug treatment for this target group difficult. One example, which is mentioned several times during the survey, is the lack of collaboration between different services (mostly between justice and mental health) because of professional secrecy. Respondents also report the lack of specific treatment facilities and specialization for drug using minors, which makes early-detection very difficult. Often the same treatment programs are used for minors, adolescents and adults. Nevertheless, according to most of the respondents, a specific approach is needed for children and youngsters below the age of 18. The respondents also indicated the need for (more) short-term admission possibilities and project-based treatment.

The most common mentioned barriers in this survey regarding the use of guidelines are the lack of applicability of the guidelines to the target group or the organisation, and the lack of knowledge about implementing evidence-based practice. One of the respondents indicated for example that the services get little feedback on the various documents they are obliged to complete and that contribute to epidemiological and scientific evidence. The qualitative analysis shows that the lack of resources and skills are important barriers for the implementation of guidelines as well. Only a minority of the respondents has the opinion that the access to the guidelines, the administrative assistance to implement the guidelines and the support among practitioners and policy officers are too limited.

Respondents have identified various strategies to facilitate the implementation of (evidence-based) guidelines. Although most of the respondents have already access to the guidelines, they suggest to facilitate the access by providing the guidelines through the internet, the Belgian Monitoring Centre for Drugs and Drugs Addiction, or conferences and seminars. In addition, they indicated the importance of the availability of short summaries of the context of the guidelines in order to improve their knowledge about evidence-based practice. In order to improve both the knowledge and the skills for the implementation of guidelines, many respondents shared the opinion that advice and training is required during the implementation process. They said that this training should have the purpose to educate and motivate the practitioners to use the guidelines on a daily basis.

Discussion

This study was set up to describe the services that are working with drug using minors and the use of guidelines in these prevention and treatment services. The results described above are not representative for all prevention and treatment services working with children and youngsters below the age of 18, because this study has some serious limitations.

Firstly, although measures were taken to maximize the response rate, only a total response rate of 25% is reached. The response rate for the prevention services was even lower. Consequently, no results about the use of guidelines in prevention services are available in this study. The fact that anonymity was not guaranteed, may prevented potential respondents filling out the questionnaire (Sauermaann & Roach 2013). Nevertheless, one third of the respondents started to fill in the survey but did not complete it. A possible reason for this is that some questions were too difficult to answer (Sauermaann & Roach 2013) or that the respondents postponed filling out the survey and forgot to complete it (Lefever, Dal, & Matthíasdóttir 2007).

Secondly, certain prevention and treatment services that work with drug using minors and/or their parents could be overlooked if the consulted registries are not up to date and if the services were not described as such by the registries or on the websites. Therefore, this study may suffer from a selection bias. The fact that most of the responding treatment services are offering treatment specifically to minor drug users and are using guidelines for the treatment of substance abuse, can be an indication. As such, detailed information about treatment services where guidelines are lacking is not available.

Thirdly, it is also expected that the results of the study suffer from a non-response bias. It is interesting to see that most of the respondents have access to guidelines and highlight the importance of scientific sound therapeutic guidelines. At first sight, this may also be the result of social desirability. The absence of a researcher, however, reduces the risk of socially desirable answers (Fripiat & Marquis 2010). Moreover, the respondents formulated critical remarks in the open questions. This is an indication that they felt safe enough to express their own opinion (Autrique, Vanderplasschen, & Sabbe 2008).

Fourthly, the therapeutic coordinator of each service was asked to complete the questionnaire. It can be questioned whether their responses represent the perspectives of all practitioners in the treatment facility. Notwithstanding this limitation, knowing the views of the coordinators is important since they often decide about the implementation and development of evidence-based guidelines in their services (Autrique, Vanderplasschen, & Sabbe 2008).

A fifth limitation of the study is that departments and prevention and treatment programmes of the same organisation are considered as one service. In this respect, differences in approach of treatment programmes within these organisations are not identified.

Although the limitations described above, this study reveals some interesting results. However, most of the respondents have confidence in the use of guideline, clinical experience is considered equally important in daily practice. Some respondents raise concerns about the possibility to lose their therapeutic freedom when using guidelines. They also indicate a difference in attitudes between various disciplines and professions.

Respondents believe that general programs are still too often used for the treatment of drug using minors. They believe that the treatment for drug using minors is not sufficiently developed in Belgium. Three respondents report the availability of specific recommendations regarding the treatment of minor drug users. Early intervention, harm reduction and re-socialisation for minor drug users is scarce in Belgium. Most of the programs and interventions used in substance abuse treatment lack scientific evidence on their effectiveness. This study also highlights the lack of resources, knowledge and skills in order to implement guidelines properly. As consequence, respondents expressed their need to be educated and motivated to use guidelines.

Despite these results, more research is needed in order to know which interventions and substances need evidence-based guidelines in substance abuse treatment in Belgium. Additionally, further research about evidence-based practice in drug prevention in Belgium is required. Due to the low response rate of this survey, additional face to face interviews are suggested as they can achieve relatively high response rates (Sauermann & Roach 2013).

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4. A systematic overview of evidence-based practice guidelines on the prevention and treatment of alcohol- and drug misuse in adolescents

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Introduction

Alcohol and drug misuse continues to be an important problem among adolescents worldwide. Up to 72.5% of 14-18 year olds in the US (Youth Risk Behavior Surveillance System [YRBSS], 2009) and close to 90% of 16 year olds in Europe reported to have consumed alcohol (European School Survey Project on Alcohol and other Drugs [ESPAD] 2011). Context-specific evidence-based guidelines on how to prevent, assess and treat substance misuse among adolescents are currently lacking in Belgium. Guidelines may facilitate coherence in policy and treatment.

The development of evidence-based guidelines requires substantial time, expertise and resources. For this reason, the international ADAPTE collaboration has developed a methodology to adjust existing guidelines for use in a particular local context (Fervers et al., 2006). An important first step in this process is to identify existing guidelines that can be used. The results of this step are presented in this chapter. We aimed to assess 1. How many evidence-based guidelines are available on the prevention, screening, assessment and treatment of adolescent alcohol and drug misuse? 2. How many guidelines display high methodological quality? 3. What is the content of the high-quality guidelines with regard to target population, professionals and recommendations?

Methods

Standard systematic review methodology as outlined by the Cochrane and the Campbell Collaboration was used (Higgins & Green, 2011; Campbell Collaboration, 2011).

Search strategy

A sensitive search was performed aiming to identify relevant national and international guidelines. In June 2011, we searched the following electronic databases: Medline, Embase, Cinahl, PsychInfo, and ERIC. The terms were translated to similar terms for the other databases. In addition, we searched for guidelines in the following databases.

- Guidelines International Network
- The National Guideline Clearinghouse
- The New Zealand Guidelines Group*
- the Scottish Intercollegiate Guidelines Network (SIGN)
- Domus Medica (Belgian Association for Flemish General Practitioners)
- Nederlands Huisartsen Genootschap (Dutch Association for General Practitioners)
- Dutch Institute of Healthcare Improvement CBO
- Société Scientifique de Médecine Générale (SSMG)
- National Institute of Clinical Excellence (NICE)
- Database 'evidence-based guidelines' from Duodecim, hosted in the Digital Library of health from the Belgian Centre for Evidence-Based Medicine (CEBAM)
- World Health Organization (WHO)

The Association for Alcohol and other Drug Problems [Vereniging voor Alcohol- en andere Drugproblemen], and the portal of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) provide an overview of (European) guidelines for substance misuse and these were all screened for relevance.

In addition, internet sites of the following relevant organizations were searched using the above mentioned search terms:

- National Drug and Alcohol Research Center
- Australian Drug Information Network
- Alcohol Studies Database

We also searched Google with the same search terms. Selected guidelines were screened for references to related guidelines and national experts in the field were contacted to identify any other guidelines overlooked in these searches.

Selection of guidelines and inclusion criteria

The retrieved guidelines were screened as to whether they fulfilled the following inclusion criteria:

1. The document should be a (clinical) practice guideline

Clinical practice guidelines are systematically developed statements to assist practitioners and patient decisions about appropriate health care for specific circumstances (Field & Lohr, 1990).

2. Recommendations should be based on evidence

Guidelines were included if they used references to scientific studies supporting their statements.

3. The guideline should report on the prevention, screening/assessment or treatment of alcohol or illicit drug (mis)use

The recommendations should refer to preventing or reducing the use of alcohol or illicit drugs (i.e. cannabis, ecstasy, cocaine), the screening or assessment of the use of alcohol and drugs or treatment of the consequences of the (mis)use of these substances. Guidelines on caffeine or smoking cessation were excluded.

4. The guideline should report on adolescents

The recommendations should refer to youngsters aged 12 to 18. Guidelines specifically focusing on adolescents with accompanying health issues such as psychosis, HIV infection or pregnancy were excluded.

5. In addition, for pragmatic reasons, only guidelines in English, Dutch, French and German were included. Also, guidelines had to be published or updated in 2006 or later as research has demonstrated that the median survival of guidelines is 5 years, meaning that half of all guidelines are outdated 5 years after publication (Alderson, 2012).

Initial selection took place based on title and abstract. Potentially relevant documents were retrieved and screened in full. All retrieved citations were screened by one reviewer (GEB). A second reviewer (KH) screened a random sample of 10% of the retrieved guidelines in duplicate. The inter-rater reliability was assessed using the percentage of agreement and the Kappa statistic.

Data extraction and data synthesis

The following data were extracted: title of guideline, authors, country, year of publication, target population, professionals and field (prevention, assessment or treatment) and substance (alcohol, opioids etc.). Data were extracted by one reviewer and checked by a second reviewer.

The quality of guidelines was assessed using the validated and reliable AGREE II (Appraisal of Guidelines for Research and Evaluation) instrument, which aims to assess the degree of methodological rigor in a clinical practice guideline (Brouwers et al., 2010; AGREE Collaboration, 2003). It consists of 23 items organized within the following six domains: Scope and Purpose, Stakeholder Involvement, Rigor of Development, Clarity of Presentation, Applicability, Editorial Independence.

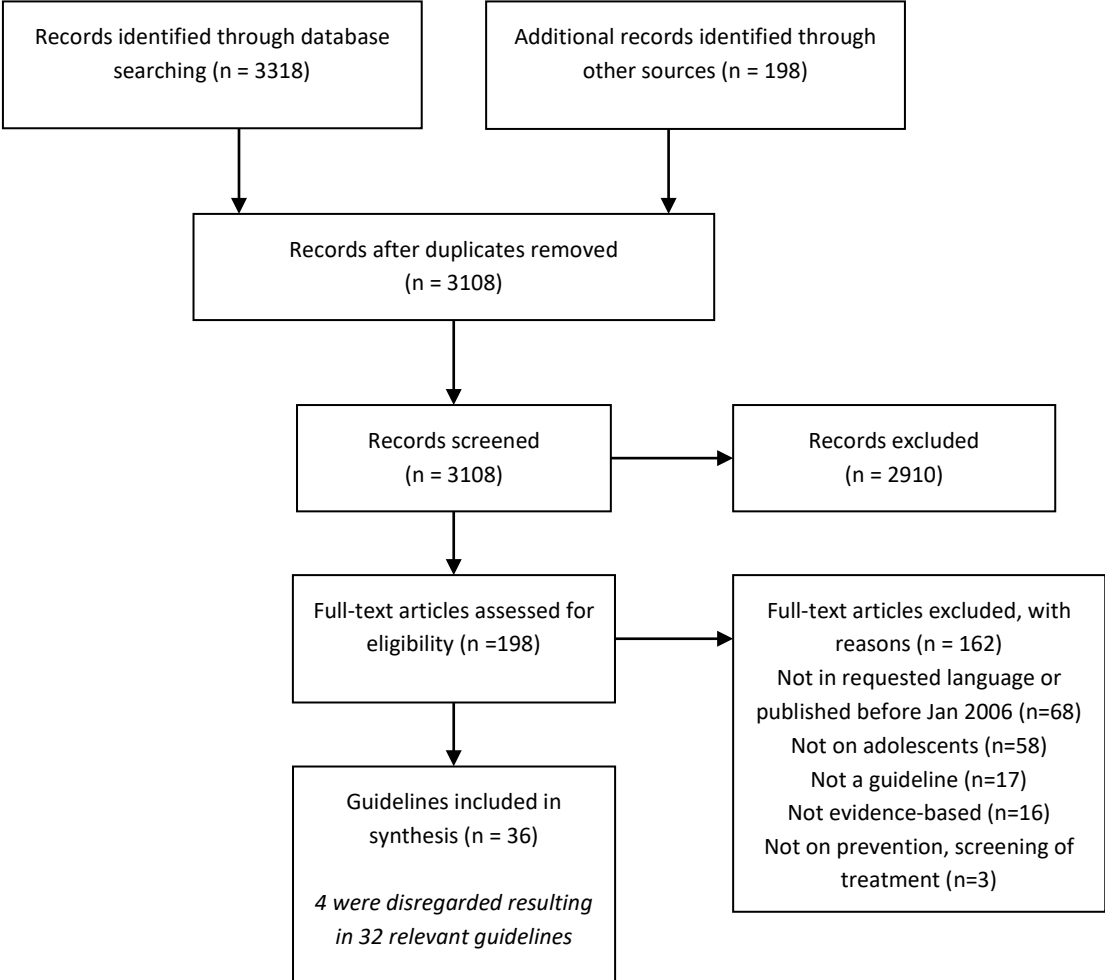
Items were rated on a seven-point scale from 1 (Strongly Disagree) to 7 (Strongly Agree). A quality score was calculated for each of the six domains, which were independently scored by at least two independent reviewers. Domain scores were calculated by summing all the scores of items in that domain and then representing the total as a percentage of the maximum possible score for that specific domain.

We used a staged scoring process to assess the quality of the included guidelines. First, one reviewer assessed the rigor of the development subscale (domain 3) of all guidelines. A second reviewer also assessed this domain if guidelines reported a systematic search or a clear link between evidence and recommendations. The guidelines that scored high on this domain, with a cutoff set at 50% of the maximum score, were assessed by two reviewers with regard to the other domains. Details of the guidelines with respect to characteristics, content and quality were tabulated.

Results

The search in electronic databases identified 3,318 records and 198 records were found using additional sources (see Figure 6). In total, 198 guidelines were screened in full to determine whether they fulfilled the inclusion criteria. A subset of 20 guidelines was screened by a second reviewer. The percentage agreement between reviewers was 90% and the Kappa statistics for inter-rater agreement 0.73, indicating substantial agreement.

Figure 6. Flow diagram of numbers of identified and included guidelines in our systematic review of evidence-based guidelines on adolescent substance misuse.



Thirty-six guidelines fulfilled our inclusion criteria. However, four guidelines were disregarded because they targeted very specific groups of health care professionals (emergency departments and ambulance services) or patients (young people in secure environment and detainees in police custody), while more general guidelines were available. Therefore our final sample consisted of 32 relevant guidelines.

Quality of the guidelines

Nine of 32 relevant guidelines were considered high-quality guidelines, i.e. these scored more than 50% on the AGREE II instrument subscale methodology (UK001, UK003, UK004, UK005, UK007, UK008, UK009, NL001, INT004). The Tables 11 and 12 present basic characteristics and quality scores of these guidelines, respectively.

Table 11. Main characteristics of the selected guidelines

Guideline title (ID)	Institute, country, year of publication	Target group	Professionals
Interventions in schools to prevent and reduce alcohol use among children and young people. (UK001)	NICE, UK Nov 2007	Children in primary and secondary school	School personnel, local authorities, the NHS and the wider public, voluntary and community sectors, including children, families and friends.
Alcohol-use disorders: diagnosis and clinical management of physical complications. (UK003)	NCC-CC, UK 2010	Adults and children from age 10	All healthcare professionals, people with alcohol-use disorders and their carers, patient support groups, commissioning organizations and service providers
Alcohol-use disorders: preventing the development of hazardous and harmful drinking. (UK004)	NICE, UK 2010	People aged 10 and over	Government, industry and commerce, the NHS, and local authorities, education, the wider public, private, voluntary and community sectors.
Alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence. (UK005)	NICE, UK 2011	Young people (10 years and older) and adults with a diagnosis of alcohol dependence or harmful alcohol use.	Primary, community and secondary healthcare and social care professionals
Community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people.	NICE, UK March 2007	Vulnerable and disadvantaged children and young people (under 25 years)	Practitioners and others in the NHS, local authorities and the education, voluntary, community, social care, youth and criminal justice sectors.

(UK009)			
Multidisciplinary guidelines on impairments in alcohol use (NL001)	GGZ, Netherlands 2009	Persons who misuse or are dependent of alcohol	All care givers involved in (early) diagnostics and treatment of alcohol misuse and dependence
Drug misuse: psychosocial management of drug misusers in the community and prison. CG51 (UK007)	NCCMH, UK 2007	Adults and young people (aged 16-18 years) who misuse opiates, cannabis and/or stimulants	Primary, community, secondary, tertiary and other healthcare professionals
Drug misuse: opioid detoxification. (UK008)	NCCMH, UK 2007	Opiate dependent adults and young people suitable for detoxification	NHS and related organizations, including prison services, inpatient and specialist residential and community-based treatment settings
Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence (INT004)	WHO, World 2009	Persons dependent on opioids	Policy makers, managers and healthcare workers

Table 12. Details of methodological quality (subscale of AGREE) of the selected guidelines. Results are presented on a 7-point Likert scale, 1: strongly disagree to 7: strongly agree.

	UK 001	UK 003	UK 004	UK 005	UK 007	UK 008	UK 009	NL 001	INT 004
Systematic methods were used to search for evidence.	5	5	6	7	6.5	6.5	7	6	5.5
The criteria for selecting the evidence are clearly described	7	5	7	7	6.5	6	7	1	5
The strengths and limitations of the body of evidence are clearly described.	7	3	6.5	7	5	5.5	6.5	5	4.5
Methods for formulating the recommendations are clearly described	7	5	7	7	5	5.5	6	7	4.5
The health benefits, side effects, and risks have been considered in formulating the recommendations	5.5	7	5	7	5	6	5	7	3
There is an explicit link between the recommendations and the supporting evidence	6.5	5	5.5	5	4	4.5	5	7	5.5
The guideline has been externally reviewed by experts prior to its publication.	5	7	5	7	5	4.5	6.5	5	1.5
A procedure for updating the guideline is provided	6	3	5	7	2	2	5	7	2.5

High quality guidelines on prevention

Three high-quality guidelines, all from The National Institute of Clinical Excellence (NICE), formulated recommendations with respect to the prevention of substance misuse among adolescents (UK001, UK004, UK009).

UK001 focuses on school-based interventions to prevent and reduce alcohol use among children and young people. It recommends tailored alcohol education to be part of the education curriculum for all students. If appropriate, parents should get information about developing parental skills. Furthermore, it recommends that local partnerships need to be developed to support the education in schools, to integrate this with community activities and to involve families. Students thought to be at risk of drinking too much, should be offered brief advice and referral.

UK009 are guidelines on community based interventions to reduce substance (legal and illegal drugs) misuse amongst vulnerable and disadvantaged children and young people. The guidelines are intended for all health professionals but also for professionals from other relevant sectors such as education and social welfare. The guideline includes recommendations on the prevention, screening and assessment and treatment and all recommendations involve multiple disciplines. With respect to prevention, the guidelines recommend development and implementation of a strategy to reduce substance misuse amongst vulnerable and disadvantaged youngsters, as part of a local area agreement. This strategy should be based on a local risk profile of the target population and supported by a local service model that defines the role of the agencies and practitioners. Furthermore, certain treatment programs are recommended for youngsters, aged 10 to 12, with persistent behavioral problems and youngsters, aged 11-16, who are at high risk of substance misuse with the aim to reduce substance misuse in the long-term (indicated prevention).

UK004 are guidelines that aim to prevent the development of hazardous and harmful drinking. It targets individuals aged 10 and above and is meant for government, industry and commerce, and a wide range of (health) professionals who are in contact with this population. The guideline formulates separate recommendations for policy and for practice. Recommendations with respect to policy include, for example, making alcohol less affordable, or making it less easy to buy alcohol. Practice recommendations include screening and supporting young people aged 10 to 15, and those aged 16 and 17 who are thought to be at risk for alcohol misuse (see below).

The recommendations of these three guidelines are based on systematic reviews of relevant literature, including cost-effectiveness evidence and the guidelines describe the evidence that underlies a recommendation. However, the guidelines typically include multiple actions under one recommendation while evidence statements are given for each recommendation. Therefore, it was not always possible to identify the body of evidence relevant to each action,

which weakens the link between evidence and recommendations. Also, evidence statements covered only a part of a recommendation, for example the effectiveness of an intervention while the recommendation also included details on the content of the intervention.

High quality guidelines on screening, assessment and treatment

Four guidelines formulated recommendations on screening, assessment and treatment of alcohol misuse, of which two had recommendations targeted on adolescents or children (UK004, UK005). UK004 includes recommendations on early identification of alcohol-use disorders. Children aged 10 to 15 should be assessed and receive an appropriate intervention, based on professional judgment. Young people aged 16 and 17 thought to be drinking too much should be screened, and receive brief advice, extended brief interventions, where appropriate. Young people aged 16 and 17 who do not benefit from these interventions or those who may be alcohol-dependent should be referred to specialist treatment. The same issues about the evidence underpinning this guideline as stated above apply. However, for some parts of this guideline the link between evidence and recommendations was felt to be weaker because the relevance of some evidence statements was unclear.

The recommendations of UK005 concern the assessment and management in those drinking harmfully or with alcohol dependence. This guideline recommends conducting a brief assessment in 10-17 year olds when alcohol misuse is expected. Furthermore, 10-15 year olds with concurrent physical or psychosocial problems need to be referred to a specialist service for assessment of their needs. For 10-17 year olds, abstinence should be the first treatment goal and these youngsters should be offered inpatient assisted withdrawal. Although for this guideline also systematic searches for evidence were conducted, strong evidence is lacking. As a result, recommendations for young people and adolescents rely on extrapolations from the data set for adults. In contrast to the guidelines discussed above, this guideline does not clearly describe which evidence statements are linked to which recommendations. Also, the full guideline follows a different format than the practice guidance which makes it difficult to assess the link between evidence and recommendation. An important strength of this report are the sections 'from evidence to recommendations' that explain how recommendations were derived.

UK003 and NL001 focus on broader populations, including adolescents. UK003 includes recommendations on treatment of acute alcohol withdrawal, management of delirium or alcohol withdrawal seizures. NL001 is a multidisciplinary guideline on alcohol misuse in general, with recommendations on screening, assessment and treatment (pharmacological, psychosocial and combined), including somatic complications.

Although the systematic searches for these guidelines were not restricted based on age, only a few studies that include adolescents were found and many recommendations were based on studies in adult populations only.

Four guidelines concern substance misuse (UK009, UK007, UK008, INT004). UK009 focuses specifically on vulnerable and disadvantaged adolescents (already discussed above). They recommend using existing screening and assessment tools to identify adolescents who are (at risk of) misusing substances. They also recommend working with patients and relevant (health) professionals to provide support and to refer to other services, if needed. For problematic drug users, they recommend motivational interviewing. In general, evidence to support these recommendations is sparse.

The remaining three guidelines focus on assessment and treatment of opioid misuse. UK007 covers psychosocial support provided by all health care professionals involved in the treatment of adults and young people (aged 16 and 17 years) who misuse drugs. It encompasses screening, assessment and treatment. Recommendations include the use of opportunistic brief interventions for those who are not, or in limited contact, with services, the use of self-help and contacting self-help groups and contingency management, also with the aim to improve physical health care. UK008 focusses on opioid detoxification and targets adults and young people (16 to 18 years) who are dependent on opiates and have been identified as suitable for a detoxification program. Important recommendations include providing information, advice and support, offering methadone or buprenorphine as first choice of medication, the advice of not using ultra-rapid detoxification and offering community-based programs routinely for those considering opioid detoxification.

These guidelines, however, lack a clear link between evidence and recommendation. They provide a summary of the literature, followed by the clinical recommendations but the link between evidence and recommendations, including impact of other considerations on that recommendation could be improved. Although the searches did not exclude adolescents, again very few studies focusing on adolescents were found. For example, with respect to pharmacological agents for detoxification, only one study on buprenorphine and none on methadone was found that assessed these drugs in adolescents.

INT004 targets persons dependent on opioids. The guidelines are relevant to policy makers and administrators making decisions on the organization of treatment, managers and clinical leaders responsible for the organization of health-care services and health-care workers treating patients. Recommendations are formulated at three levels: for health systems at national and sub national level, recommendations for treatment programs and for the support

of individual patients. This guideline contains a section that describes special considerations for adolescents, which concludes that no systematic reviews were found that could answer the question whether pharmacological treatment for adolescents with opioid dependence should differ from that for adults.

Discussion

This systematic review was performed to prepare for an ADAPTE-process in order to develop Belgian guidelines on adolescent substance misuse based on existing evidence-based guidelines. We identified 32 relevant guidelines and nine were judged to be developed rigorously. Three guidelines included recommendations on prevention, four on the treatment of alcohol misuse and four on the treatment of substance misuse. Between the guidelines, there were few commonalities because the documents focused on different target groups and professional disciplines. The quality of evidence underpinning the recommendations is meager due to a lack of studies among the population of adolescents.

We identified only one high-quality guideline that included recommendations specifically for adolescent drug misuse (UK009). Currently in many countries most adolescent drug users are treated in pediatric care and sometimes in adult care. This may be due to the relatively limited amount of specific treatment programs that are available for this population. This situation, in turn, may hamper the development of evidence-based guidelines that are supported widely. However, the high prevalence of adolescent drug misuse stresses the urgency to develop and research such programs.

Evidence-based practice in the field of adolescent substance misuse is emerging and much progress has been made in the development and implementation of treatments designed specifically for adolescents with substance use disorders (Daes, 2008). Despite this, available guidelines were hampered by a lack of studies in the adolescent population. This may be due to uncertainty about legal and ethical status of involving adolescents in scientific studies (Santelli et al., 2003). Furthermore, studies on alcohol or drug misuse may be associated with other difficulties such as embarrassment of parents, increased likelihood of drop-out and lack of reliability of self-reported outcome measures.

As studies in adolescents were sparse, recommendations in some guidelines were deduced from studies among adults. Scientific research in adult substance misuse is not directly transferable to adolescents as there are important differences between the two groups. For example, adolescents are at greater risk of problems due to frequent binge drinking, parents

play an important role in the recovery process, as most adolescents live together with one or both parents and are under legal custody, while developmental issues (e.g. higher levels of risk taking, responses to peer pressure) should be taken into account during treatment. According to the GRADE approach, a system to rate the quality of the evidence regarding guidelines, this would lower the quality of evidence because of indirectness -differences between the targeted population and those who have participated in the studies (Guyatt et al., 2011). The lack of evidence regarding adolescent substance misuse is an important finding of this systematic review.

We used the subscale 'rigor of development' of the AGREE II instrument to select high-quality guidelines. Although the AGREE II instrument does not provide thresholds for acceptable or unacceptable guidelines, this instrument does rank guidelines based on their rigor and can guide the selection of an ADAPTE process (The ADAPTE Collaboration, 2009). The cut-off score of 50% was set in such a way that multiple guidelines remained for both prevention and treatment to be used in the subsequent process.

Although nine guidelines with respect to assessment and treatment were judged to be based on a rigorous development process, the link between evidence and recommendations was often unclear. More transparency on this matter will increase the feasibility of guidelines to be adapted to another context. Therefore, we support the current proposition of international standards for guidelines which suggest including items on how to formulate recommendations and the synthesis of evidence underlying the recommendation (Qaseem et al., 2012).

For prevention, we selected only 3 high-quality guidelines. This may have to do with the AGREE instrument that was used in this selection process. For the field of prevention, we identified some guidelines that are somewhat different from standard guidelines. These guidelines recommend a stepwise framework for how to develop prevention interventions for a local context. An example of such a stepwise guideline is "The Canadian standards for school-based youth substance abuse prevention" (Canadian Centre on Substance Abuse [CCSA], 2010). Such guidelines may be specific for the field of prevention, which is characterized by many different and interrelated factors that determine whether or not an intervention is effective, and can be a way to take these factors into account. Also, such an approach may be useful in different populations and contexts, making it possible to develop tailored interventions. It should be noted that it is challenging to find evidence for such stepwise guidelines, that consist of multiple steps which can be relevant for one population or context, but not for another. The AGREE-instrument evaluates whether there is evidence for

each and every recommendation of a guideline. In order for stepwise guidelines to fulfill these criteria, the challenge is to include evidence for each and every step. Therefore, currently the AGREE-instrument may not be valid to assess the quality of such prevention guidelines. This illustrates the challenges for the field of evidence-based prevention and indicates the potential need for different criteria and assessment methods.

The identified guidelines provide some guidance on which interventions or approaches are effective to prevent, screen, assess or treat adolescent substance misuse. However, many relevant issues are not or only superficially covered in these guidelines. For example, we do not know which signals in adolescents are indicative of substance misuse and which instruments are valid and reliable to diagnose adolescent substance misuse and dependency. Furthermore, we do not know what the most effective treatments are (medication, psychosocial and combined) and whether self-help groups are effective for adolescents. With respect to prevention, we did not find consistent information on the age from which prevention interventions are effective, how education should be targeted and how to tune prevention initiatives in schools, community, family and healthcare settings. All topics can be considered as topics for future research.

Conclusion

In conclusion, there are a substantial number of guidelines addressing substance misuse in adolescents. However, only half of the guidelines included recommendations specific for adolescents. The quality of the guidelines is hampered by a lack of evidence specifically for adolescents and unclear links between evidence and recommendations.

Evidence-based guidelines are an important means to implement evidence-based medicine. We identified a substantial number of guidelines addressing substance misuse in adolescents, and of these nine were of high quality. Five high-quality guidelines focus on substance misuse in broad populations, including adolescents and only 4 provided recommendations specific for adolescents. This overview shows that only parts of the domain of the prevention, screening, assessment and treatment of adolescent alcohol and substance misuse is captured into high-quality guidelines and that evidence underpinning these high-quality guidelines is meager. To improve future guidelines, more evaluation studies in the population of adolescents are urgently needed as well as studies evaluating outcomes of implementing evidence-based guidelines.

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5. Piloting the draft guidelines: procedure and results

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Introduction

Across the world, producers of evidence-based guidelines have recognized the need to involve stakeholders in the development of guidelines (Brouwers et al, 2010). Stakeholders can be defined as people who have a legitimate interest in a guideline (Cluzeau et al, 2012). There are several ways to incorporate stakeholders' views in the guideline developmental process. They can be consulted prior to developing a guideline to assist in identifying relevant questions, included as member of the guideline development group or invited to provide feedback on the draft version of the guideline. In case of the latter, stakeholders are expected to provide feedback on the content of the guideline by evaluating the completeness, clarity and applicability of the recommendations. The involvement of stakeholders in the guideline development process may also increase ownership and commitment of intended users. Consequently, it could serve as a first means to disseminate the guidelines.

In 2010, we initiated the ADAPTE-youth project in order to adapt existing, international guidelines for the prevention, screening, assessment and treatment of alcohol and drug misuse in adolescents to a Belgian local context. We invited a variety of stakeholders to participate as an expert in the panel meetings organized to meet this goal. In addition, as part of this project, we carried out an external review of the draft guidelines developed in several stakeholders. The most important aim was to assess the applicability of the recommendations for the Belgian context.

Methods

During the project, we developed 3 separate guidelines: a. Screening, assessment and treatment of adolescent alcohol misuse (ADAPTE youth 1); b. Screening, assessment and treatment of adolescent drug misuse (ADAPTE youth 2); and c. Prevention of adolescent alcohol and drug misuse (ADAPTE youth 3).

Sample

The three draft guidelines were externally reviewed by methodological experts, clinical experts, adolescents and parents of adolescents who misused substances.

Methodological experts: Internet was searched to identify persons with research experience in the field of adolescent alcohol and drug misuse. Also, members of the panel and the ADAPTE study group were contacted to identify potential methodological experts.

Four professors in the field of drug addiction, two Flemish and two Walloon, were contacted via email. Two reminders were sent. In case of unavailability of the expert we asked to forward our request to a colleague expert.

Clinical experts: Clinical experts were recruited from the descriptive map (see Chapter 3) listing people who previously expressed an interest in our project but were not selected to participate in the panel meetings. In addition, panel members were asked to invite colleagues working with adolescents to participate in the external review of one of our guidelines developed. In total, 20 care givers from Flanders and 16 from Walloon were invited to participate. The experts were contacted by email and, as above, two reminders were sent.

Adolescents: We invited two groups of adolescents to pilot the draft guidelines. The first group consisted of 28 adolescents, aged 16 to 17 years, who were consulted in their school as part of a project week addressing alcohol misuse. Informed consent was given implicitly as the teachers of the adolescents approved and incorporated the external review exercise in the program. The second group consisted of four adolescents, aged between 15 and 18 years, who were sentenced to take a drug education course. All gave informed consent.

Parents of children who misuse substances: The guideline was also piloted among eight parents, including one grandparent, of children who have misused or who still are misusing substances. These parents were members of a self-help group that gathered in monthly meetings. This group was conveniently sampled as the group leader previously expressed interest in our project. All gave informed consent.

Data collection and analyses

All stakeholders were questioned using a structured approach. The methodological experts and the clinical experts reported in writing, while the adolescents and parents were interviewed.

Methodological experts: The methodological experts were asked to read the draft guidelines and to evaluate the methodological quality using the AGREE II (Appraisal of Guidelines, Research and Evaluation, www.agreetrust.org) instrument (Brouwers et al., 2010) as this instrument achieved credit worldwide for improving the quality of guidelines (Burls, 2010). It is also used by influential guideline development organizations including the UK's National Institute for Health and Clinical Excellence (NICE, 2009).

This instrument consists of 23 items organized within six domains, with each domain capturing a specific aspect of guideline quality:

- 1: Scope and Purpose (items 1 to 3): overall aim of the guideline, target group
- 2: Stakeholder Involvement (items 4 to 6): extent to which appropriate stakeholders were involved in developing the guideline and extent to which the guideline represents the views of its intended users
- 3: Rigor of Development (items 7 to 14): process of gathering and summarizing the evidence, methods used to develop recommendations
- 4: Clarity of Presentation (items 15 to 18): language, structure, format of guideline
- 5: Applicability (items 19 to 21): potential barriers and facilitators to implementation, strategies to improve uptake, resources needed to implement the guideline
- 6: Editorial Independence (two items): biases due to competing interests

Some minor modifications to the instrument were made. The items 15, 18, 19 and 20 were split into two separate items as these evaluated two different aspects. The item 'the recommendations are specific and unambiguous' was split into 'the recommendations are specific' and 'the recommendations are unambiguous'. Item 13 (The guideline has been piloted among end users) was not assessed as this phase was not addressed in the draft version. This resulted in a total of 27 items.

Items were rated on a seven-point scale from 1 (Strongly Disagree) to 7 (Strongly Agree). A quality score was calculated for each of the six domains, which were independently scored by at least two independent experts. Domain scores were calculated by summing all the scores of items categorized within a domain and then representing the total as a percentage of the maximum possible score for that specific domain. Each item had a free text box, where experts could make comments to clarify their scores.

Because the same method of development was used for the three guidelines, the methodological experts filled in one form for the three guidelines. Where items were applicable for one guideline but not for another, they were asked to make a note in the free text box.

Clinical experts: The clinical experts were asked to rate the applicability of the recommendations in the draft guidelines. We developed a questionnaire, based on the GLIA (Guideline Implementability Assessment; <http://nutmeg.med.yale.edu/glia/>) instrument (Shiffman et al., 2005). The original instrument was initially evaluated by the expert panel involved in the adaptation process and did not fully meet our needs. The main comment was that it focused too much on details of recommendations, for example whether or not a recommendation is sufficiently detailed to be used and less on the applicability of the guideline in general. Based on suggestions of the panel we rephrased the original 30 questions into 10 questions. Our final questionnaire consisted of two parts:

The first part contained 6 questions about the guideline in general:

1. Is this guideline valuable for you?
2. Is the treatment approach in this guideline consistent to the approach used in your setting?
3. Is it consistent to your personal approach and to the expectations of young people?
4. Can you envisage yourself applying this guideline in your practice?
5. Would you recommend the use of this guideline to your colleagues?
6. Do you think it is feasible to implement this guideline in your sector in Belgium?

We used a 4-point Likert scale: 'completely not, mostly not, mostly and completely'. We converted this to a score from 1 to 4 and calculated the mean score across experts.

The second part contained 4 questions about the separate recommendations. For each recommendation we assessed:

7. Whether it was clear enough to be used in practice,
8. Whether it is clear to which adolescents it applies,
9. Whether the explanation is clear, and
10. Whether or not this recommendation can be used in practice.

Experts could answer with 'yes', 'no' or 'partly'. If they did not think it was feasible to implement a recommendation, we asked them to explain this in a free text section.

Basic characteristics of the experts such as type of work setting, position and number of years' experience were also asked.

Adolescents: Beforehand the external review by adolescents all recommendations of the three ADAPTE-youth guidelines were screened for relevance. Recommendations that directly affected adolescents or recommendations for which cooperation of adolescents was needed were selected. Recommendations not requiring a particular action from the adolescents were not included in the set. Examples include recommendations on laboratory tests (recommendation 3 from the guideline on alcohol misuse) and types of medication (recommendations 22 to 24 from the guideline on alcohol misuse). Also, recommendations for very specific populations i.e. opiate dependent young people (from the guideline on drug misuse) were excluded as we were not able to recruit from this population. The selection was performed by one person and checked by a second person.

In total, we selected 19 recommendations: 8 from the guideline on alcohol misuse (numbers 1, 2, 4, 6, 11, 17, 19 and 25, ADAPTE youth 1), 5 from the guideline on drug misuse (numbers 1, 10, 15, 17 and 37, ADAPTE youth 2) and 6 from the guideline on prevention (numbers 1a, 2a, 2c, 5a, 7 and 8, ADAPTE youth 3).

A first group of adolescents was questioned at school. During a group session, they were asked whether or not they agreed or would comply with the selected recommendation. Each

person got an electronic voting device. One of the guideline authors introduced a recommendation on a screen and asked adolescents to vote. The scores of the whole group appeared directly on a screen and were immediately discussed. We probed the students on the voting scores, asking for a rationale for their choice to agree or disagree.

The second group was interviewed. During a face-to-face session, they were asked whether or not they agreed or would comply with the selected recommendations. If the adolescent did not agree / would not comply, the interviewer asked to explain the reasons.

Parents of children who misuse substances: In order to facilitate the external review with parents a total of 13 recommendations where parents had an active role were selected: 5 from the guideline alcohol misuse (numbers 11, 12, 13, 14 and 18, ADAPTE 1), 3 from the guideline drug misuse (numbers 17, 18 and 19, ADAPTE 2) and 5 from the guideline on prevention (numbers 1a, 1d, 5b, 7 and 8, ADAPTE 3). We piloted fewer recommendations in parents compared to adolescents as parents were less often involved in the implementation of the recommendations.

The parents were interviewed during one of their self-help group meetings and were asked to give their opinion about the selected recommendations. The interviewer introduced the recommendations one by one and asked the parents to indicate whether or not they would comply. Parents who did not agree / would not comply were asked to explain the reasons.

Both the numbers of adolescents and parents that would comply / agree and would not comply/ disagreed and the reasons for disagreeing or not complying were reported. The findings were then used to fine-tune the guideline by adding them to the relevant recommendations under a special header 'perspective of the target population'.

All comments given by the methodological or clinical experts were listed and subsequently discussed with the authors of the guidelines to determine whether or not the guideline should be amended, and if so, which changes should be made.

Results

Methodological experts

Two experts responded to our invitation to review the guidelines. Both were from Flanders. Table 13 presents the mean scores of these two reviewers on the separate items of the AGREE II instrument. Twenty-one of 27 items received a mean score of at least 5 (on a scale of 1-7). The experts rated the overall quality of the guidelines as 6 (on a scale of 1 to 7). The domain 'rigour of development' scored highest with 86% of the maximum.

Table 13. The mean scores on the items of modified AGREE II on a 7-item Likert scale (1: strongly disagree to 7: strongly agree)

Domain 1: Scope and purpose (82%)		Domain 4: Clarity of presentation (83%)	
1. The overall objective(s) of the guideline is (are) specifically described.	5.5	15a. The recommendations are specific.	6.5
2. The health question(s) covered by the guideline is (are) specifically described.	6.3	15b. The recommendations are unambiguous.	6
3. The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described.	5.5	16. The different options for management of the condition or health issue are clearly presented.	6
Domain 2: Stakeholder involvement (76%)		17. Key recommendations are easily identifiable.	5
4. The guideline development group includes individuals from all relevant professional groups.	5.5	Domain 4: Applicability (79%)	
5. The views and preferences of the target population (patients, public, etc.) have been sought.	4	18a. The guideline describes facilitators to its application.	5.5
6. The target users of the guideline are clearly defined.	6.5	18b. The guideline describes barriers to its application.	6
Domain 3: Rigour of development (86%)		19a. The guideline provides advice on how the recommendations can be put into practice.	6
7. Systematic methods were used to search for evidence.	7	19b. The guideline provides tools on how the recommendations can be put into practice.	6.5
8. The criteria for selecting the evidence are clearly described.	6.8	20a. The potential resource implications of applying the recommendations have been considered.	4.5
9. The strengths and limitations of the body of evidence are clearly described.	6.5	20b. The potential cost implications of applying the recommendations have been considered.	5.3
10. The methods for formulating the recommendations are clearly described.	6.5	21. The guideline presents monitoring and/or auditing criteria.	4.9
11. The health benefits, side effects, and risks have been considered in formulating the recommendations.	5	Domain 6: Editorial independence (64%)	
12. There is an explicit link between the recommendations and the supporting evidence.	6.5	22. The views of the funding body have not influenced the content of the guideline.	4
13. A procedure for updating the guideline is provided.	4	23. Competing interests of guideline development group members have been recorded and addressed.	3.5
		Overall assessment of quality (1=lowest possible to 7=highest possible quality)	6

The experts gave divergent scores of at least 2 points on four items:

- Item 5. One expert noted that the view of the target population was currently only represented by the two parents of drug users, who were member of the panel, and that it was likely that views of parents differed from views of adolescents.
- Item 13. One expert noted that the procedure for updating the guideline still had to be developed.
- Item 19a. One expert noted that advice on how to implement the recommendations was lacking for most of them, especially in the guideline on prevention. Furthermore, the stakeholders expressed a concern that there was more evidence available for medical interventions than other interventions. The medical recommendations were also perceived as being more detailed. It was noted that this probably has to do with the amount of evidence that is available.
- Item 20a. One expert noted that the potential resource implications of applying the recommendations were only considered for certain recommendations. Furthermore, typically rather vague wording was used.

Two comments were made that applied to one specific guideline:

- Item 4. One expert noted that the panel that developed the guidelines on alcohol and drug misuse contained only few Walloon members. Furthermore the members representing residential care were more experienced in adult treatment. The panel for the guideline on prevention was judged to include all relevant stakeholders.
- Item 17. One expert noted that the key recommendations were not easily identifiable for the guideline on drug misuse, mainly because of the large number of recommendations.

Other comments related to:

- An unclear description of the target population of the guideline and inconsistency between title of the guideline and the content. For example, which adolescents are and which are not targeted by these guidelines.
- An unclear description of health professionals.
- The omission of a very relevant Belgian law, the “Wet Patientenrechten”

Clinical experts

Thirty-six clinical experts were invited to participate in the pilot phase for the three guidelines and 10 provided feedback. Table 14 below specifies the flow to the final response rates.

Table 14. Overview of the numbers of clinical experts that were invited and that finally participated in the pilot phase

	Invited	Accepted invitation	Declined invitation	No response	Returned questionnaire
Treatment					
Flanders	11	5	1	5	4
Walloon	10	5	2	3	2
Prevention					
Flanders	9	5	2	2	3
Walloon	6	1	0	5	1

Six clinical experts (four from Flanders and two from Wallonia) have assessed the applicability of the draft guidelines on assessment and treatment. Of these 3 assessed the guideline ‘assessment and treatment of alcohol misuse’ and the other 3 the guideline ‘assessment and treatment of drug misuse’. Four other experts (three from Flanders and one from the Walloon region) assessed the draft guidelines on prevention. Table 15 presents some characteristics of the participants.

Table 16 presents the opinion of the clinical experts of the guidelines as a whole. Overall, scores were positive, indicating that the guidelines were viewed as being valuable. Treatment approaches in the guidelines were judged to be consistent to approaches used in the settings and the experts thought it would be feasible to implement these guidelines in their section. The scores for the guideline on drug misuse were lower compared to the scores of the other guidelines. Lowest scores were given for the value of the guideline on drug misuse and for potential inconsistent expectations of adolescents for the guideline on prevention.

Table 15. Characteristics of the clinical experts who provided feedback on the guidelines

	Position Type setting	Target group Type of drugs	Expe- rience	Do you use guidelines?
Alcohol Expert 1	Director Ambulant care	Children/ young adults Alcohol	15 yrs	Yes: "Trimbos guidelines; 'Schade aan integriteit'
Alcohol Expert 2	Drug safety officer Primary care/ambulant	Children and adults Alcohol and drugs	12 yrs	Yes: "Trimbos guidelines; 'Schade aan integriteit'
Alcohol Expert 3*	Physician Primary care	-	-	-
Drugs Expert 1	Head of section Residential care	Children/ young adults Drugs	7.5 yrs	No
Drugs Expert 2	Director Residential care	Children and adults Drugs	25 yrs	Yes: "De Leon : The Therapeutic community"
Drugs Expert 3	Psychologist Ambulant care	Children/ young adults Drugs	4 yrs	No
Prevention Expert 1	Project leader ASBL de Promotion de la santé	Children and adults Alcohol and drugs	5 yrs	No
Prevention Expert 2	Prevention/early intervention worker Local prevention service	Children and adults Alcohol and drugs	11 yrs	Yes: "IPLAN - > planmatig werken VAD, Wenselijke preventie -> Nicole Vettenburg"
Prevention Expert 3	Drug prevention worker Local prevention service	Children and adults Alcohol and drugs	<1 yrs	Yes: VAD guidelines
Prevention Expert 4	Teacher/ supervision of pupils/ leader at scouts School/ youth organization	Children/ young adults Alcohol	<1 yrs	Yes: guidelines from school and from scouts organization

* Three experts provided general feedback on the guideline on alcohol misuse but did not complete the questionnaire.

Table 16. Assessment of clinical experts on the guidelines (average score on a 4-p scale from 'completely not' to 'completely')

	Alcohol misuse	Drug misuse	Guideline prevention
1. Is this guideline valuable for you?	3.5	2.3	3
2. Is the treatment approach in this guideline consistent to the approach used in your setting?	3	3	3
3. Is the treatment approach in this guideline consistent with your approach?	3	3	3
4. Is the approach in this guideline, according to you, consistent with the expectations from young people?	3	2.8	2.3
5. Can you envisage yourself applying this guideline in your practice?	3	2.8	3
6. Would you recommend the use of this guideline to your colleagues?	3	2.8	3
7. Do you think it is feasible to implement this guideline in your sector in Belgium?	3.5	2.8	3.3

The scores represent as follows: 1= completely not, 2=mostly not, 3=mostly, 4=completely

The figures below present the opinions of the clinical experts with respect to the clarity and applicability of individual recommendations of the three draft guidelines. All comments of the experts and how we dealt with them are available online via:

<https://ppw.kuleuven.be/home/english/research/mesrg/publications-of-research-projects>

The recommendations on acute care with respect to alcohol misuse (no 21 to 25) were not assessed since all clinical experts reported that these were not applicable to his/her practice setting.

The recommendations on supporting family members were judged to be applicable under the condition of having a therapist available in the setting. With respect to the last recommendation it was stated that some clients are reluctant to therapy, limiting the options of care givers to keeping contact and giving advice whenever possible.

It was noted that the guideline implicitly suggests treating adolescents as passive persons, while an active participation of the adolescent, privacy and giving them responsibility are the key elements that define a good relationship between care giver and adolescent. It was also noted that the guideline was not clear that family can only be involved in the adolescents' treatment after he or she gives permission to do so, which is determined by a Belgian law.

Figure 7. Opinion of clinical experts with respect to the clarity and applicability of the recommendations of the guideline ‘screening, assessment and treatment of alcohol misuse’

Recommendation	Clarity	Population	Evidence	Applicable
1 Ask for their alcohol use if there are clinical signs	yes	yes	yes	partly
2 Use validated screening instruments	yes	yes	yes	partly
3 Blood tests are not recommended for diagnosing misuse	yes	no	no	no
4 Use AUDIT to assess duration and severity misuse	yes	partly	yes	yes
5 Perform extensive assessment on multiple domains	yes	yes	yes	yes
6 Refer 12-15 yr olds with co-morbid problems to specialized center for assessment	yes	yes	yes	partly
7 Consider referral for specialized treatment center in case of dependency or if brief advice was not successful	yes	yes	yes	partly
8 Offer admission for acute alcohol withdrawal if age <16 yr	yes	yes	yes	yes
9 Consider admission for acute alcohol withdrawal if 16-17 yr	yes	yes	yes	yes
10 Admission indicated for acute intoxication, delier or insults	yes	yes	yes	yes
11 Encourage families to be involved in treatment	yes	yes	yes	yes
12 Provide information to family, offer assessment of needs	yes	yes	yes	partly
13 Offer guided self-help, info on self-help and support groups	yes	yes	yes	no
14 Consider offering family members to support family	yes	yes	yes	no
15 Cooperate with parents and environment	yes	yes	yes	yes
16 Use motivational interviewing	yes	yes	yes	yes
17 Make self-help materials widely available	yes	yes	yes	yes
18 For alcohol dependent adolescents, explain the risk of a sudden reduction in alcohol intake	yes	yes	yes	yes
19 Offer extended brief interventions	yes	yes	yes	yes
20 Offer individual CBT for adolescents with limited co-morbidities and multicomponent programs for severe problems	yes	yes	yes	no
yes	partly	no	not applicable	

CBT: cognitive behavioral therapy; yr: year; (Clarity: Is the recommendation clear enough to be used in practice; Population: Is it clear to which adolescents it applies; Evidence: Is the explanation clear; Applicable: Can it be implemented in practice?)

Figure 8. Opinion of clinical experts with respect to the clarity and applicability of the guideline ‘screening, assessment and treatment of drug misuse’

Recommendation	Clarity	Population	Evidence	Applicable
1 Ask for drug use in settings where drug use is common	Green	Green	Green	Green
2 Use drug screening questionnaires	Green	Yellow	Yellow	Red
3 Check for certain clinical signs of potential drug misuse	Green	Green	Green	Red
4 Consider personal factors when doing assessment	Green	Green	Red	Yellow
5 Assess opioid dependency when adolescent wants detox	Green	Green	Red	Yellow
6 Perform drug tests conform operating/safety procedures	Yellow	Green	Yellow	Red
7 Cooperate with parents and environment	Green	Yellow	Red	Green
8 Explain options so adolescent makes informed decision	Green	Green	Red	Green
9 Discuss with adolescent whether to involve parents	Green	Green	Red	Yellow
10 Give drug users same care, respect and privacy	Green	Green	Red	Red
11 Develop clear and agreed treatment plans	Yellow	Green	Red	Green
12 Staff should be competent for treating drug users	Green	Green	Red	Yellow
13 Provide information and advice on harm reduction in opportunistic contacts	Green	Green	Red	Red
14 Do not routinely provide group-based psycho education	Green	Green	Red	Green
15/16 Offer opportunistically brief intervention focused on motivation for adolescents without or with limited contact to drug services	Green	Green	Red	Red
17 Consider residential treatment in case of co- morbidity	Green	Green	Red	Yellow
18 Enquire parents about impact of their child’s drug use	Green	Green	Red	Red
19 Offer info to parents about self-help and support groups	Green	Green	Red	Yellow
20 Offer information to parents about detoxification	Green	Green	Red	Yellow
yes	partly	no	not applicable	

(Clarity: Is the recommendation clear enough to be used in practice; Population: Is it clear to which adolescents it applies; Evidence: Is the explanation clear; Applicable: Can it be implemented in practice?)

Recommendations 21 to 37 referring to opioid detoxification were not assessed because they were perceived by all experts as not applicable to their treatment setting.

Recommendation 6 that specifies to perform blood test according to standards was regarded as common sense; however scientific evidence to support this was judged to be lacking. Experts noted that implementing recommendation 6 required adequate training of care workers.

One expert judged the evidence to be unclear for recommendations 4 to 20 as the level of evidence was low. The applicability of the use of screening questionnaires/ questions was rated as problematic. It was commented that some colleagues lack training in the use of such questionnaires. Recommendations 4 and 5 were judged to be difficult to implement as this required extra time from physicians.

With respect to recommendation 17, it was noted that also the safety of the adolescent could be a reason to consider admission. Another expert said that this was conditional on the availability of a special ward for adolescents. With respect to item 19/20 the experts noted a lack of parent groups in certain geographical regions. Furthermore they commented that not all parents appreciate information and advice.

Figure 9. Opinion of clinical experts with respect to the clarity and applicability of the guideline ‘the prevention of alcohol and drug misuse’

Recommendation	Clarity	Population	Evidence	Applicable
1a Integrate alcohol and drug education in curriculum				
1b Tailor education at characteristics of adolescent				
1c Introduce ‘whole school approach’ re. alcohol and drugs				
1d If appropriate, offer information and advice to parents				
2a Offer individual advice to high-risk adolescents				
2b If appropriate refer these adolescents to external services				
2c Respect the rights of the adolescents				
3 Develop partnerships to support drug education at schools				
4 Develop community-based prevention strategy				
5a Supervise/help parents of high-risk adolescents				
5b If needed, these families should receive intense support				
6a Offer behavioral therapy to misbehaving 10-12 yr olds				
6b Offer training to parents of these children				
7 Increase the price of alcohol				
8a Reduce alcohol advertisements				
8b Analyse effects of a complete alcohol advertisement-ban				
yes	partly	no	not applicable	

(Clarity: Is the recommendation clear enough to be used in practice; Population: Is it clear to which adolescents it applies; Evidence: Is the explanation clear; Applicable: Can it be implemented in practice?)

Comments with respect to school-based prevention (no. 1 to 3) mainly addressed a lack of detail that hampers the applicability of these recommendations. For example, with respect to 1b it was noted that more details would be needed to tailor the recommendation. For example, how would education in lower grades differ from that in higher grades? Some experts appreciated the recommendation that parents should be involved but felt that the guideline lacked information on how to accomplish this. It was also suggested to include topics such as: increasing resilience, alternatives to drugs, and where adolescents can go if they have questions in order to strengthen the educational component. With respect to referring adolescents to specialized services (no. 2b), local availability was stated to be an important prerequisite for early intervention, especially for adolescents who have low motivation.

One expert judged all recommendations not to be applicable to her setting as her setting focused mainly on universal prevention. Recommendations 3 to 8 were rated as not applicable by expert 4 who is a school teacher. Recommendation 3 was judged to be the task of the board of the school rather than the task of an individual teacher.

With respect to community-based prevention it was stated that it was difficult for care givers to determine the target population (who exactly is vulnerable?).

The recommendations on family therapy were perceived as being clear. However, they also commented that currently a systematic screening to determine which adolescents need such an intervention is lacking. It was also stated that family therapy should be part of a broader and intensive care approach and that such approaches are not (yet) available in their region. Furthermore, it was stated that the family interventions suggested tend to portray parents as 'inspectors', where adolescents would most likely benefit more from dialogue and trust. It may also be difficult to judge parental skills and to determine whether and when an intervention targeting and assisting parents in gaining and maintaining these skills would be appropriate.

The recommendations on price of alcohol and advertisements-bans (no. 7 and 8) were judged not to be applicable as these were perceived to be on the domain of the federal government. Also, the experts suggested other options to reduce alcohol intake such as reducing the price of non-alcoholic drinks, offering free water and inspecting whether café's are following the rules. A lack of scientific evidence with respect to these recommendations was also noted.

Adolescents

28 adolescents (17 girls and 11 boys) from a general secondary school and 4 adolescents (3 boys and 1 girl) who received drug education assessed the selected recommendations. The results are available online via:

<https://ppw.kuleuven.be/home/english/research/mesrg/publications-of-research-projects>

Recommendations for which at least 50% of the adolescents (both of the general population and drug education) disagreed were (1) increasing the price of alcohol and (2) banning alcohol advertisements. In addition, adolescents of the general population also felt uncomfortable with (3) getting information and advice from a care teacher about risks of drinking and on where to go for help, and (4) involving parents in the treatment. Adolescents in drug education also disagreed with (5) taking bloods tests to determine the level of alcohol after accidents and with (6) recommendations to treat cannabis misuse. They typically argued that cannabis misuse is not a big issue, and that it does not require an intensive treatment.

Parents

Seven parents and one grandparent of children who misused drugs were interviewed. The detailed results are available online via:

In general, parents agreed with the recommendations of the guideline and they appreciated getting information or being involved in the treatment of their child. All parents disagreed that increasing the price would reduce alcohol misuse. The group further disagreed to advise an alcohol-dependent person to continue drinking when it is not yet possible to stop instantly.

Discussion

The pilot phase of the ADAPTE-youth project was performed to collect feedback from stakeholders about the content and format of the draft guidelines. This information was used to fine-tune the guidelines. The methodological experts judged the guidelines to be well-developed. They also had useful comments on the framework in which the guideline has to work and suggestions for Belgian contextual factors with respect to privacy. The clinical experts in general judged the guidelines positively. Their feedback was diverse and typically related to how to implement the guidelines. This diversity probably reflects the variety of health professionals and contextual factors involved in this broad field including prevention and treatment and alcohol as well as other illicit drugs. Feedback of adolescents indicated that they perceived general alcohol prevention strategies, such as increasing price and reducing advertisements, not to be useful. Furthermore they expressed a discomfort with getting help or advice from teachers and parents. Parents typically agreed with the recommendations of the guidelines.

The methodological experts rated the quality of the guidelines as high. Overall, the domains methodological rigor, scope and purpose and clarity of presentation scored well. The suggestions of the methodological experts lead to amendments on the framework of the guideline, for example a clearer definition of the target population and professionals, as well as amendments with respect to Belgian contextual factors, such as the inclusion of the Belgian law 'Wet Patientenrechten' dealing with issues of privacy of adolescents.

The responses of the clinical experts were scattered. This probably relates to the large diversity of professionals working in this particular field, including for example physicians, psychologists and prevention workers. Also, the circumstances in which care givers work may differ; some work by themselves and others are part of a team. This affects the delivery and provision of care to adolescents who misuse alcohol or drugs. Some comments related to the lack of clarity on how the topic of the guideline was delimited, others comments to the

fact that certain actions described in the recommendations were not performed by them or conflicted with what they generally applied in daily practice. These actions were not always included in these guidelines. Furthermore, some recommendations were judged to be not useful, because of a lack of detail on how to apply them in practice. Many comments addressed the process and implementation level of the guideline; how to use the evidence-based guideline in practice. Although the intention of the guideline, that is that care professionals should select and implement only those recommendations that are applicable to their function (e.g. only physicians are allowed to prescribe medication) and setting (working alone or in team, contact with other health care givers), which is explained in an introductory paragraph, the clinical experts often commented that some recommendations were not applicable to them or their setting. Furthermore, we clarified in the introduction section that if certain interventions are not included in the guideline, this does not automatically mean that these cannot be used in practice, only that currently, there is no evidence to support it. Other comments relates to how a care professional should approach adolescents, compromising between helping/instructing to offering increasing responsibility, and the role of parents in building this relationship. Important differences in the general framework for treatment, mainly related to alcohol misuse, were identified between the Flemish and the Walloon care givers. Flemish care givers aim for abstinence and Walloon care givers tend to promote harm reduction strategies. As we did not find strong evidence for or against the two preferences, both were included in the final guideline as an option. Furthermore, a position statement on the role of parents and the basic attitude of care givers towards adolescents were added to the final guideline to meet the comments of the clinical experts.

We decided to assess patients' views in more detail in the pilot phase as the only person who would represent adolescents' views dropped out as panel member. We recruited and interviewed 32 adolescents, including 4 adolescents who were enrolled in a drug education program. We were not able to recruit adolescents who are dependent of opioids, despite the fact that the guideline on treatment of drug misuse includes specific recommendations on this population. However, opioid misuse covers only a small part of the treatment demand of Belgian adolescents (see Chapter 2a).

Involving consumers of health care and considering their values and preferences when formulating recommendations is gaining momentum in the field of guideline development (Cluzeau et al., 2012). Methodology to incorporate patients' views in guideline development and adaptation is starting to emerge. However, documents describing the hands-on experience on how to discuss guidelines with adolescents are sparse and we found no

documents reporting on this issue. This contrast to the societal development to give adolescents increasingly autonomy over their (medical) decisions.

Our viewpoint was that adolescents' participation in this process was important, but that most likely we would need to develop a target group specific approach to including them. For example the opinion of peers is very important to adolescents, which makes them more sensitive to peer pressure. We have used individual electronic voting devices, so adolescents could vote anonymously with lower impact of group processes. Furthermore, by directly presenting the group-results adolescents received instant feedback on the votes of their colleague students. These results could then be discussed immediately to reach a level of depth in trying to understand divergent opinions between youngsters. We had a limited time available and therefore we could not go into details for all recommendations. The group discussion may have hindered some adolescents to express their opinion.

The content of our guidelines is characterized by two aspects. First, the content is lengthy and second, the content covers a broad population of adolescents, including those that never have used alcohol or drugs. We decided that the adolescents only needed to comment on parts of the guideline that required active participation by them. We felt that this was a feasible and acceptable decision that matches the strategy used by more experienced guideline adapters such as the Scottish Intercollegiate Guideline Network, who also ask their reviewers only to comment on the areas of their expertise (SIGN, 2011).

In order to allow adolescents to identify themselves with the persons who misuse alcohol or drugs we used case descriptions (also called vignettes) during the pilot phase. This is a cheap and practical option, which moves the focus away from their own behavior to a particular situational context creating a much safer environment to speak about these sensitive issues. Vignettes on mental disorders were also used in Australian studies to evaluate young peoples' beliefs about the role of substances in the prevention and treatment of mental disorders (Yap et al, 2011) and potential stigmatizing attitudes towards mental disorders such as depression and anxiety disorders (Raevley & Jorm, 2011). We did not find any studies that piloted this approach for evaluating guidelines. However, we generally feel that it has served our purpose

We assessed two samples of adolescents; one general cross-sectional school-population and a population with experience in using drugs. We found only little differences in results between the two samples. In addition, we also interviewed parents. Stakeholders have their own perspective on the topic of the guideline and on what is good and poor care for these adolescents. This way we were able to incorporate different viewpoints in our guidelines.

Although an external review is a characteristic of a well-developed guideline, such a review is not always performed. It is time-consuming and there is a lack of information on how to integrate such information in the final version of the guideline. We used the results of this pilot phase to fine-tune the guidelines. Where possible and in consensus with the core guideline authors, we tried to incorporate the comments of the methodological and clinical experts. Most comments related to the content of the guideline. In general the comments were very helpful and have improved the quality of the final guideline. As a result of the comments of the methodological and clinical experts several new paragraphs were added to the general introduction to the three guidelines. Examples include a position statement on the role of parents and the basic attitude of care givers towards adolescents. Where it was not possible to incorporate stakeholders' comments, we provided them with an argument for this. All comments, including our response to them were sent to all experts that were involved in the pilot phase to increase transparency of this phase.

Comments that were judged to be relevant, but without any supporting scientific evidence were added to a paragraph that covers the implementation of a certain recommendation. Most of the comments of the adolescents and parents were added to this paragraph. We believe that including their perspective will bring sensitivity to their personal values and preferences in the care process.

For some aspects of care, we noticed a tension between views of parents and views of adolescents. This may be due to their distinct role in life. Adolescents want to be independent; they prefer solving their own problems. Parents want to protect their children. In contrast and interestingly, some adolescents were protective towards their parents and did not want to hurt their feelings. It is not clear how these tensions should be incorporated into guidelines. Where applicable, we signaled the recommendations on which there was disagreement. We hope that this will alert care givers.

The three draft guidelines on adolescent substance misuse were piloted among four groups of stakeholders: methodological experts, clinical experts, adolescents and parents of children who misuse drugs. All groups of stakeholders formulated valuable feedback, with was incorporated where possible. A limitation of our pilot is that we used relative small samples, especially for the clinicians and the youngsters who misused substances. We generally found it difficult to recruit these participants, especially from the Walloon part of Belgium. The small number of stakeholders reduces the generalizability of the feedback and hence may have impacted on the content of the guideline, potentially leading to a lower acceptability of

the guideline in for example the Walloon region. We were not able to evaluate opinions of stakeholders involved in sports clubs, leisure time clubs, scouts etc. This could be taken up in future updates of the guideline and would most likely increase ownership and commitment among the intended users of the guidelines.

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6. A process evaluation of ADAPTE-youth: an alternative to *de novo* evidence-based practice guideline development

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Introduction

Substance misuse is an important problem in adolescents. In Belgium, alcohol is the most frequently consumed substance. Ninety-two per cent of 17-18 year olds in secondary school have ever drunk alcohol, while 12% of these pupils ever tried cannabis (Melis, 2013). Depending on the quantity, frequency and duration, alcohol and drug misuse can cause serious and irreversible physical damage and significant, psychological and social problems (McCambridge et al, 2011). In addition to these individual effects and consequences, alcohol and drug misuse is also related to high social and economic costs, which is why this topic is of increasing interest at the policy level (EMCDDA, 2008).

Care for adolescents who misuse alcohol or drugs is situated within a broad field and is carried out by a range of care professionals from various settings. Such care is probably more efficient if there are clear agreements between care professionals and if care professionals within a similar sector/setting provide similar care. Evidence-based guidelines can assist in achieving this aim by providing an overview of recommendations for which some degree of scientific evidence exists. Currently, guidelines for the prevention, screening, assessment and treatment for adolescents who misuse alcohol or drugs are lacking in Belgium. For this reason, the ADAPTE-youth project was performed aiming to develop guidelines for the Belgian setting. Since the-novo guideline development is time consuming, an alternative procedure, the ADAPTE methodology that adapts existing guidelines to another local context (Fervers et al., 2006) was used.

The adaptation method is a rather new methodology. It has not frequently been applied, particularly not in West-European settings. To our knowledge, it has not previously been used in multidisciplinary settings crossing a variety of different domains such as schools, the health and welfare sector. Consequently, it is important to evaluate the process of guideline adaptation used in the ADAPTE-youth project and emphasize the lessons learned. The aim is to gain insight into the process of guideline adaptation from the viewpoint of the panel members, which also includes the research team that facilitated the adaptation process. This

evaluation should result in an identification of strengths and weaknesses of the procedure and lead to recommendations for future adaptations of guidelines on how to increase the likelihood of success.

ADAPTE-methodology

The ADAPTE methodology is a stepwise approach (ADAPTE Collaboration, 2009), which can be divided in 16 steps in 3 phases: preparation, adaptation and finalization (a summary is presented in Table 17 below).

Preparatory phase (research team):

1. To establish a coordinating committee.
2. To specify and define the guideline topics for the adaptation process.
3. To check whether adaptation is feasible by conducting a scoping review on existing guidelines addressing drug and/or alcohol misuse in adolescents.
4. To identify necessary skills and expertise from stakeholders involved in the adaptation process.

Research and adaptation phase: (research team and panel members):

5. To complete tasks for the set-up phase including the selection of panel members, declarations of conflicts of interest, details of the consensus process and adapted guideline authorship.
6. To write an adaptation plan including modules to be followed and timelines.
7. To determine the questions to be answered by the guidelines.
8. To systematically search for guidelines.
9. To screen the retrieved guidelines for relevance.
10. To assess guideline quality using the AGREE II instrument
11. To assess the evidence for each recommendation, with regard to validity and coherence.
12. To review the assessments and select the relevant recommendations based on acceptability and the applicability in the Belgian health and social care context. Also, to formulate the degree of recommendation: strong (meaning that the advantages clearly outweigh the disadvantages) or weak (meaning that there is no certainty that the advantages outweigh the disadvantages).
13. To create a draft adapted guideline for the Belgian local context, and to check the content of the draft guideline within the panel.

Finalisation phase: (research team):

14. To conduct an external review among stakeholder groups of the guideline.
15. To produce the final evidence-based practice guidelines.
16. To submit the final version of the adapted guidelines to CEBAM for validation.

Table 17. Presentation of the ADAPTE process

Phases	Research team	Panel of experts
Preparation	Prepare the proces	
Adaptation		Formulate clinical questions
	Searching for relevant guidelines	
	Assess quality of guidelines Assess validity and coherence of evidence	
		To select recommendations based on acceptability and the applicability for Belgium
	Draft guideline	Provide feedback on draft guideline
Finalisation	External review	
	Produce final guideline	

During this project we decided to distinguish between the domain of screening/treatment and the domain of prevention of alcohol and drug misuse because the two domains involve different care providers. Therefore, two expert panels were composed: one for the prevention of alcohol and drug misuse (which will be referred to as: prevention panel) and one for the screening and treatment of alcohol and other drug misuse (which will be referred to as: treatment panel).

The composition of the expert panels is critical to the support of the guideline within the field. According to the ADAPTE Collaboration (2009) the following knowledge and skills should be represented in the panel:

- clinical knowledge;
- personal experience;
- policy or administrative knowledge;
- methodological knowledge;
- knowledge around collecting literature;
- management experience;
- implementation knowledge and;
- facilitation skills.

For each knowledge and/or skill area, we aimed at recruiting multiple persons. Since care for adolescents is a decentralized authority in Belgium, while the organization of health care belongs to the federal authorities, a division of authorities is involved in the care for these adolescents. Consequently, it was important to strive for a representation of Flanders and Wallonia. For the area 'clinical knowledge', we defined subgroups based on work setting since there are many health care providers involved in the care provided to substance misusing adolescents and in developing and applying preventive programs. For the prevention panel we identified and approached four subgroups of clinical knowledge: youth organizations, schools, prevention professionals in the field of health care (physical, psychosocial) and professionals in the field of social care. For the treatment panel, we also identified four subgroups: community care, primary care, outpatient care and residential care. We aimed at recruiting at least two people for youth organizations, school, community care and primary care and at least four people for the groups on prevention professionals, outpatient care and residential care, while again striving to recruit from both Flanders and Wallonia. The research team also participated as panel members in the role of chair, secretary or presenter.

The descriptive map developed to identify and describe organizations targeting substance misusing adolescents contained an overview of all Belgian organizations in the field of prevention, screening and treatment of alcohol and drug misuse in adolescents (Chapter 3). We used it to recruit panel members with clinical expertise. All persons/organizations on this list were invited by email to participate in the ADAPTE-youth project. A reminder was sent after two weeks.

The mailing included 188 organizations in the domain of the prevention of alcohol and drugs and 124 with in the domain of screening and treatment. In total, 14 organizations, seven of each domain, agreed to participate as a member of the expert panel. During project meetings we found that some relevant stakeholders were missing, such as patient representatives and policy makers. Purposeful sampling, or selective recruitment, was used to complete both panels based on input from the project group or the steering committee of the project. Nine and six members were purposefully sampled for the panels of prevention and treatment, respectively.

This process evaluation aims to explore positive and negative experiences of panel members with the process and implementation of the ADAPTE-youth project in practice and to formulate recommendations based on this evaluation for future adaptation processes of guidelines. The following research questions were defined:

- What are the strengths of the ADAPTE-procedure according to the panel members?
- What are limitations or challenges of the procedure according to the panel members?

Methods

The process evaluation was performed using a questionnaire, which consists of 5 parts. The first section covered demographic characteristics of the panel members such as gender, work setting, and experience in the development of guidelines. The second section included statements on the adaptation process, such as 'the expert panel was balanced', 'I felt taken seriously' or 'the ADAPTE process was clear'. A Likert scale (from 1=representing fully agree to 5=fully disagree) was used to register the answers. Panel members that scored 4 or 5 were asked to explain their score in a textbox. The third section contained a set of questions addressing subjective experiences such as motivation or concentration issues during the meetings. Answers could be scored on a 5-point Likert scale ranging from 1 (high) to 5 (low). With each question we tried to retrieve additional information by inviting the panel members to use a free text box to provide more detailed information, for example 'what did motivate you, or 'which aspects affected your concentration'. The fourth section evaluated knowledge, skills and attitudes by asking questions such as 'what additional knowledge have you acquired through the project' or 'in what sense has the process changed your attitude towards guidelines and/or guideline development?' The last part concerned bottlenecks and opportunities of the adaptation process itself. Through open questions we probed the panel members on what they think was the greatest opportunity of the project and what they perceived as the major bottlenecks.

The questionnaires were disseminated after the final panel meeting. We sent two written reminders. In case of non-response, participants were contacted by phone, and offered the possibility to answer all questions by phone. These phone sessions were recorded, transcribed and subsequently added to the written questionnaires.

Participants

The questionnaire was sent to all participants of the two panels, including the research team, who attended at least 1 meeting. This resulted in 12 panel members for the treatment panel and 16 for the prevention panel. The research team consisted of four people for the treatment panel and three for the prevention panel. Of these, two persons worked in both panels. In each panel, there was one person who has not attended any meeting. These persons were not contacted for this evaluation.

Data analysis

We used descriptive analyses to describe general characteristics of the participants and to explore the results of the questionnaires. The categories of the 5-p Likert scale were

combined into a 3-p scale (agree, no agree/no disagree, disagree; high, moderate, low). Views of the expert panel members are presented separately from the view of the research team panel members.

Answers to open questions were categorized using the coding scheme presented in Table 18. This scheme was built based on the responses of the panel members, in particular the responses in text boxes and open questions. Different labels were organized into different categories by examining where concepts differ or where they are similar. This way, we discovered different categories related to the experience of the panel members in the process, establishing possible relationships and connections. This gave rise to two parent codes (components of the process) and various underlying themes.

Table 18. Components of coding the qualitative results of the process evaluation

Component	Theme	Categories
Organisational component	Used methods	Tasks to perform and scientific materials
	Supportive research team	
	The panel	Composition Presence Drop-out Group dynamics
	Preparing the meeting	
	Panel meetings	
	Result of the procedure	Usefulness Efficacy
	Personal experiences	Personal development
Motivation to participate		Personal interest or gains Institutional gains Demotivating factors

Results

Overall, we received 22 questionnaires, of which 4 were taken by phone. Response rates were 67% (8/12), 63% (10/16) and 80% (4/5) for the experts of the treatment panel, the experts of the prevention panel and the research team, respectively. Table 19 presents the main characteristics of the participants. The two panels consisted of a mixture of care professionals, policy makers and scientific workers. Overall, four panel expert members had experience in developing guidelines and five had experience in using guidelines in practice. Seven panel members were present at all four meetings. There were two Walloon members and 15 Flemish members. The research team was Flemish.

Presence of the panel at the meetings

Figure 10 presents the attendance rates of the expert panel member at the meetings during the adaptation process. The panel treatment consisted of 13 expert members. Of these, ten attended the first meeting and four attended the last meeting. The prevention panel consisted of 17 expert members, of which 12 attended the first and 5 the last meeting.

The attendance of expert panel members decreased over time. Members who were present at the meetings once or twice indicated that they dropped out because of their busy schedule. All participants were invited to provide written feedback on the materials. However, this rarely occurred and expert panel members experienced these requests as too time consuming. They also stated that, after missing one meeting, it was difficult to catch up with the discussions again.

Table 19. Main characteristics of panel members who returned their questionnaire

Panel	Data	Vocation (region)	Language	Gender	Experience using guidelines	Experience developing guidelines	Number of meetings attended
T	Phone	Head of therapeutic department	Fl	F	Yes	Yes	1
T	Paper	Scientific coworker	Fl	F	No	No	1
T	Phone	Policy maker	Fl	M	No	No	2
T	Paper	Staff member and care professional	Fl	F	No	No	2
T	Paper	Care professional	Fl	M	Yes	No	2
T	Phone	Staff member and general coordination	Fl	M	No	No	3
T	Paper	Care professional	Fl	F	Yes	Yes	4
T+P	Paper	Representative of family of patients	W	F	Yes	No	4
P	Paper	Policy maker	Fl	F	No	No	3
P	Paper	Staff member	Fl	F	Yes	Yes	2
P	Paper	Prevention worker	Fl	F	No	No	2
P	Paper	Psychologist	W	F	No	No	4
P	Paper	Prevention worker	Fl	M	No	No	3
P	Paper	Prevention program designer	Fl	M	Yes	Yes	4
P	Paper	Care professional	Fl	F	No	No	3
P	Paper	Staff member	Fl	F	No	No	2
P	Phone	Prevention worker	Fl	M	-	-	3
P	Paper	Physician, staff member in schools	Fl	F	Yes	No	3
T	Paper	Care professional / scientific coworker	Fl	F	Yes	Yes	3
T	Paper	Guideline developer	Fl	M	Yes	Yes	4
T+P	Paper	Scientific coworker	Fl	F	No	Yes	4
T+P	Paper	Scientific coworker	Fl	F	No	Yes	4

T: treatment panel; P: prevention panel; Fl: Flemish; W: Walloon; F: female; M: male

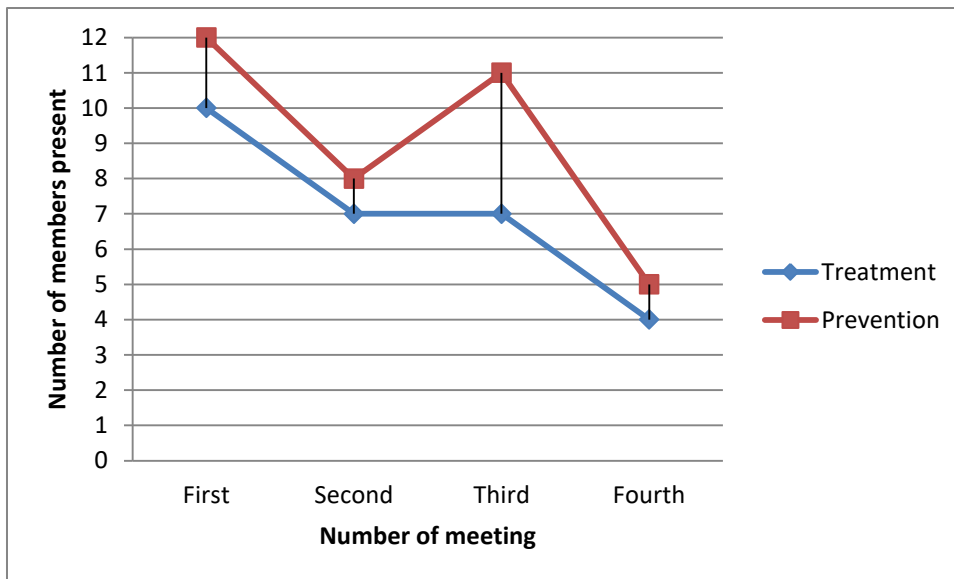


Figure 10. Number of expert panel members that attended meetings during the adaptation process

Quantitative results on the adaptation process

The majority of the expert panel members judged the adaptation procedure to be complex (see Table 20). Less than half of these members judged the procedure to be transparent and efficient. Half of the expert panel members judged the composition of the panel to be unbalanced. About three-quarters (78%) of the expert panel members felt that they were taken seriously during the process. At least 75% of the research team judged the adaptation process to be clear, useful, transparent and efficient but the same number also judged the process to be complex and laborious.

About three quarters (78%) of the expert panel members felt taken seriously during the process. Of the expert members, 33 and 39% would recommend the adaptation procedure and this guideline to their colleagues, respectively. Little over half (56%) liked the interaction between the expert panel members and research team.

Table 20. Response on statements with respect to the adaptation process (experts n=18, team n=4). Where percentages within the experts and within the team do not add up to 100, cases were missing or expressed a neutral opinion.

Statements	Experts	Experts	Team	Team
	Agree	Disagree	Agree	Disagree
The ADAPTE process was clear	56%	17%	75%	0
The ADAPTE process was complex	83%	6%	75%	0
The ADAPTE process was laborious	50%	28%	100%	0
The ADAPTE process was useful	50%	6%	100%	0
The ADAPTE process was transparent	39%	33%	100%	0
The ADAPTE process was efficient	33%	22%	75%	0
Increases the chance that stakeholders accept the guideline	39%	22%	75%	25%
The composition of the panel was balanced	33%	50%	75%	25%
The process matched my expectations	33%	33%	75%	0%
I was able to use my knowledge and skills usefully	44%	22%	100%	0
I would recommend this procedure to my colleagues	33%	28%	75%	0
I felt taken seriously	78%	6%	100%	0
I will use the guidelines in practice	44%	28%	50%	0
I would promote the guideline among my colleagues	39%	17%	100%	0
I liked the interaction between the team and the experts	56%	17%	50%	50%

Motivation during the process was high for 50% of the expert members and 75% of the research team. Concentration during the meetings was typically high for both expert members and research team. Twenty-eight per cent of the expert members reported a high proportion of positive feelings compared to 75% of the research team. Twenty-eight per cent reported high personal interest during the process (Table 21).

Table 21. Response on subjective experiences of the panel (expert members n=18, research team n=4)

Subjective experiences	Panel	Panel	Team	Team
	High	Low	High	Low
My motivation	50%	33%	75%	0%
My concentration	83%	6%	100%	0%
My effort	50%	28%	75%	0%
My interest in the project	44%	11%	100%	0%
My personal interest to participate	28%	44%	100%	0%
The interest of my institute / employer	44%	28%	75%	0%
The proportion of negative feelings	39%	33%	25%	25%
The proportion of positive feelings	28%	22%	75%	0%

Qualitative results on the adaptation process

Organizational component of the adaptation procedure

Methods

The expert panel members indicated the following strengths of the adaptation method: to view the topic adolescent substance misuse from a scientific viewpoint and to implement science into practice, the design and the use of effective methods. Several expert panel members perceived the method as too theoretical, too extensive and not always practical, for example that the source guidelines reported mainly recommendations on a general level. Nearly all panel members perceived the procedure as time-consuming. The research team indicated the following strengths: the process creates an opportunity to work with people active in the field (bottom-up), is transparent and easy to navigate. One of the major obstacles, according to several members of the research team, was the gap between the theoretical principles and the specific needs of the panel.

With respect to the scientific work difficulties experienced were the lack of evidence that underpinned the source guidelines and the complexity to disentangle the evidence that was used to support the recommendations. The team suggests that a more uniform way of presenting the evidence that underpins recommendations in evidence-based guidelines will facilitate future adaptation processes.

The research team further felt that findings from certain studies could be interpreted differently by clinicians and researchers. The research team judged this to be related to the rather high quality threshold set for inclusion of guidelines that may have been too rigid. Suggestions of the research team include an elaboration and concretization of the adaptation

method in order to find a balance between the rigor aimed for by the researchers and meeting the needs and expectations of the field workers.

Research team

The panel members indicated that the research team was well organized, sympathetic and enthusiast and that their responses to their queries were timely. They also specified that the good management of the research team during the panel meetings facilitated concentration during those meetings. Suggestions for improvement from the panel included a less steering approach and more objectivity in the adaptation process.

The research team felt that a good preparation was important to facilitate the meetings. For this aim, a well-trained moderator is also an important prerequisite.

Composition of the panel

The expert panel members indicated that the strength of the composition of the panels was that multiple disciplines were invited, including family members of drug users. In contrast, other panel members judged the panel was not balanced because important stakeholders were missing, for example representatives of specific adolescents programs, the sector of the youth care and carers working exclusively with adolescents.

The research team also judged the strength of the panel to be the multidisciplinary composition. The team also noted some difficulties, which were that various representatives of certain sectors dropped out during the process. This created for example an over-representation of the educational sector in later meetings of the prevention panel.

The group dynamics were perceived as positive by most panel members; experts noted that all opinions were taken into account and overall the conversations were constructive. The research team also was positive about the group dynamics. However, they also felt that it took some time before experts gave their opinions. Also the research team felt that interaction was mainly from the research team to the panel and far less interaction from the panel to the research team. More interaction would have benefitted the process.

Panel meetings

The following strengths of the panel meetings were stated by the panel members: the documents were mailed in a timely manner, the meetings went smoothly, there was a pleasant cooperation, there was good progress, the concentration was promoted by an active participation, the discussions were interestingly and it was interesting to share experiences from the own discipline/sector with others. Weaknesses were the time intensity of preparations, deviating from the agenda during the meeting (leading to a lack of time to discuss important items that were on the agenda) and panel members that joined the

meetings unprepared. The only French-speaking participant in the prevention panel indicated that the language barrier was an important obstacle during the meetings:

“Le fait précisément que la langue parlée majoritairement était le néerlandais a nécessité chez moi une attention toute particulière. “

The panel members further indicated that a more detailed explanation of the steps in and the timeframe of the process would most likely lead to more discussions on the content rather than on particular features of the ADAPTE procedure that may have slowed down the progress. The following suggestions were made with respect to time investment: meetings should be shorter, the number of meetings should be increased and digital working methods should be explored for future projects.

The research team indicated that the process went rather smoothly but also that the time investment was high. The tediousness of the process was related to the large amount of information that needed to be processed in between the meetings. This may have discouraged panel members. Some research team members also felt that panel members dropped out because they only had a minimal impact on the process. The research team proposes to work with subgroups in upcoming procedures with multidisciplinary teams, where and when possible via electronic communication platforms. The issue of language barriers should also be dealt with.

Result of the procedure

The panel judged the outcome of the procedure as follows: it is a positive contribution to the care provided for these adolescents and, the procedure increases the support of such guidelines (subject to the condition that the composition of the panel is reported in the guideline document). The research team stated that although several members of the research team were not fully familiar with the sector of alcohol and drug misuse the ADAPTE procedure has resulted in a useful, trustworthy end product.

Individual experiences

Factors related to personal development

Expert panel members stated that their participation in the process has increased their knowledge; the discussions during the meeting were fascinating, there was a good exchange of knowledge and that they gathered knowledge on the approach and treatment of substance misuse among adolescents as well as knowledge on the development of guidelines in general. Some expert panel members also stated that their attitude towards guidelines changed during the process. Some indicated that they would give such documents more

weight in their decision making processes.. The research team reported an increase in their knowledge in the field of guideline adaptation and development, the topic of interest of the guideline and the scientific state of the art in this field. In addition, the research team reported that they gained additional skills, such as moderating groups and group discussions and reaching consensus within groups.

Motivation to participate

The panel members reported the following motivational factors to participate: the theme of alcohol and drug misuse in adolescents and contributing to the development of meaningful clinical guidelines. In terms of institutional importance the following aspects were noted: the potential for networking and hear opinions of others. Like the panel, the research team expressed an interest in the theme and the problem of addiction, but felt that the large dropout was discouraging.

Discussion

This evaluation of the adaptation process illustrated that it was a challenging undertaking for both the expert panel members and the research team. The study reveals important insights on the viewpoints of both groups. It allows us to build on the strengths identified by the respondents and to try and tackle the weaknesses before engaging in additional guideline adaptation processes. Issues that should be dealt with include the complexity of the procedure, the rigidity in selecting appropriate guidelines and the lack of personal involvement experienced by panel members. In case of the latter, a balance should be sought between involving panel members in outlining the procedure and controlling their workload in order to keep the time investment reasonable.

There appeared to be a mismatch between (1) the anticipated and real time investments of the panel members and (2) the request for more involvement and the remark that preparing for the meetings was laborious. Although we anticipated on organizing three panel meetings: one to define research questions, one to discuss the recommendations and one to discuss the draft guideline, we experienced that more meetings were necessary to discuss the enormous number of recommendations retrieved from searching the literature. As a result, we did not experience the adaptation process as being less time consuming than a guideline development procedure. However, the fact that we addressed a broad topic within a multidisciplinary team may have impacted on this.

Despite the fact that we invited more than 10 care givers that professionally work with adolescents who misuse alcohol or drugs, the number of experts that attended the last meeting was low. There was a trade-off between inviting as many stakeholders in our panel as possible and keeping the panel small enough to facilitate efficient group discussions. We intended working with about 15 stakeholders for each panel; therefore for some groups we could only select one representative that would present the viewpoint of a particular group. Given the considerable drop-out, some viewpoints may not have been taken into account in the later phases of the adaptation process. Panel members that could not be present during the meetings were given the opportunity to provide written feedback prior to the meeting or afterwards. Very few members used this opportunity and therefore we consider this method ineffective for receiving feedback. Thinking about alternative ways to communicate with the stakeholders is important in the context of future projects.

One of the challenging issues in writing up the draft guideline was the lack of clarity on how to integrate comments made by the panel members in the guideline. Many of the comments made by the panel experts were judged to be relevant; however often there was no evidence to support them. We decided to add the relevant comments in a section including important prerequisites for implementing the recommendation. This method has been proven to be helpful for us and we invite others to provide comments and assist us in finding better strategies to include expert viewpoints in a guideline.

Representation of Walloon stakeholders in the panels was low. Although we recruited 4 Walloon experts for the treatment panel and 4 for the prevention panel drop-out was high among this group. The panel discussions revealed important differences in principles that appear to underpin the care for adolescents between the Flemish and Walloon clinicians. For example Flemish care givers more often support the abstinence principle while Walloon clinicians typically support the harm reduction principle. This is an additional challenge for the development of Belgian guidelines. Subgroups may be an important instrument to get a better view on the differences, and may support the integrating of both views in Belgian guidelines.

Although the ADAPTE methodology was launched in 2007, published studies reporting on the application of the methodology are scarce. In October 2011, the GIN Adaptation Working group published the results of 112 questionnaires on the ADAPTE methodology (<http://www.g-i-n.net/activities/adaptation/adaptation-survey-2010-results>). Fifty respondents had experience with the methodology. Commonly perceived benefits of using the ADAPTE approach were: a reduction of the time needed to develop guidelines, an increase in

transparency in the development process, the high quality of adapted guidelines, that the method offers support in developing a guideline program and a reduction of cost of development. Commonly perceived barriers were: the complexity of the method, that the reduction of time to develop guidelines only decreased slightly, that typically the quality of source guidelines was low, that the resource use to develop/adapt guidelines decreased only slightly and that there is need for training. Sixty-one% of respondents thought that ADAPTE methodology needs revision. It should be noted that these results were based on perceived advantages and barriers. As reported below our experiences do not always agree with these reports.

Two recent studies published their experiences with adapting guidelines (Harstall et al., 2013; Harrison et al., 2013) and in the section below we compare our experiences. Harrison et al (2013) reported experiences of adapting high quality guidelines on cancer care for local use in Canada. Five cases were described, mostly including multidisciplinary guidelines. Size of panels ranged from 8 to 15 participants. Typically, study groups needed 12 to 24 months to complete the adaptation process. Also these authors found that most panel members found the process to be complex and enormously time-consuming. Furthermore, they noted tension between the need for efficiency and the demand for rigor. They also noted that available guidelines did not respond to all of their questions, which illustrates that guideline adaptation has its limits.

Harstall et al. (2013) reported their experiences of adapting 7 low back pain guidelines into one multidisciplinary guideline which covered the fields of prevention, diagnosis and treatment. These researchers encountered some of the same issues we did. They also faced difficulties dealing with a multidisciplinary topic. Although they tried being inclusive as to the guideline development group, some felt that the group was too large to be efficient. They tried solving this by using post-hoc subcommittees to handle issues that could not be resolved in the larger group meetings. This was an option we considered as well during the process. In the end we had one subgroup-meeting with physicians for the guidelines on treatment, where we discussed the recommendations on medication. We thought that this worked well in our project.

The group of Harstall et al. (2013) also commented on the lower rates of participation for some disciplines and the absence of others, which was also the case in our adaptation process. The researchers tackled the issue by asking the absent disciplines for comments during the external review phase (pilot phase). We used the same approach, inviting four groups of stakeholders to provide feedback, and thought that is a reasonable solution for this problem.

Another similarity between Harstalls adaptation process and ours was related to how the tasks between the project group and the panel were divided. In both adaptation processes, a research group searched and appraised the evidence which was then shared with a clinical expert group formulating recommendations. Like Harstall, our expert panel members reported the materials to prepare for panel meetings to be well organized and timely but they also commented on the large amount of information they had to process.

The Canadian guideline was developed over a time span of 12 months and 10 halve-day meetings, which was perceived a time-consuming. Our guideline adaptation process took about 24 months and for each of the guideline we organized 4 sessions of about 3 hours each. More meetings would have been beneficial for discussing the guidelines, but probably would have reduced the number of clinical experts that were willing to participate.

An important difference is that most of Canadian participants had experience in earlier knowledge transfer projects, whereas the majority of our experts had no experience in the use or the development of guidelines.

Strengths/limitations

Strengths of our particular evaluation of the process were that we used a detailed questionnaire to evaluate the experience of panel members, including both quantitative and qualitative questions. Both types of questions may complement each other; the quantitative data can be summarized across stakeholders and research team members, while the qualitative answers may be used to further explain the quantitative ratings.

We undertook efforts to increase the response rate. Experts that did not send in their questionnaires were sent a reminder via (e-) mail and were then phoned. At that point in time, we offered them a chance to orally respond to the questions. An independent researcher was hired to conduct the oral interviews. Four out of 22 experts used this possibility, hereby increasing our response rate substantially.

The high attrition rate of the panel is a limitation of our adaptation process. This caused some disciplines not to be represented in our expert panels which probably decreases the feeling of ownership in some stakeholder groups.

Future research/recommendations

The panel members were selected based on personal interest; they had to respond to an invitation. During the process it became clear that the inclusion of additional profiles or members would have been beneficial. However, it would have been hard for stakeholders to engage themselves for a project that had already been launched. A basic understanding on the procedure outlined at the start of the project would have been necessary. Recycling

panel members across different adaptation procedures may be a convenient strategy to increase the knowledge base on procedural aspects, so that discussions may be focused toward the content of the guideline itself. If there are a large number of stakeholders, discussing relevant topics within subgroups followed by a short group discussion seems to be appropriate. Also, discussions in smaller groups may facilitate response from the panel members as a large panel may hamper some members to express their opinions.

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7. Conclusion and recommendations

This project has produced: (a) an overview of the prevalence of substance misuse in children and youngsters in Belgium, a review of protective and risk factors associated with substance misuse in adolescents and a review of the risks for children if their parents misuse alcohol or drugs; (b) An inventory of relevant Belgian organizations and stakeholders involved in prevention and treatment of alcohol and drug misuse in young people; and (c) three adapted practice guidelines detailing evidence-based interventions with regard to the prevention, screening, assessment and treatment of alcohol and drug misuse in adolescents. In what follows, we will outline our final advice and recommendations to policy and practice, based on the findings retrieved from the research project.

An overview of the prevalence of substance misuse in youngsters, of protective and risk factors for substance misuse and of health risk of substance misusing parents for children

Prevalence of substance misuse in youngsters

The prevalence data presented in this report provide information on current alcohol and drug misuse amongst children and youngsters in Belgium and the substance misuse in their family environment. Based on these results we recommend the following:

- A further qualitative and quantitative development of the epidemiological monitoring of substance use in Belgian young people is necessary. The European School Survey Project on Alcohol and Other Drugs (ESPAD) is the most important tool in the monitoring of substance use in young people. However, this is only performed in the Flemish school-age youth. A simultaneous monitoring of the youth in the French community, using the same methodology is necessary to generalize statements about substance misuse across the population of Belgian young people.
- The epidemiological research should assess the use of new psychoactive substances in addition to the classical psychoactive drugs in a valid and reliable way.
- Monitoring substance use within the recreational sector, in addition to monitoring in the population of students at secondary education, deserves more attention as new psychoactive substances are typically introduced among young people in this setting.
- Epidemiological monitoring of the treatment of young people with substance related disorders should be improved. Also, priority should be given to the prevalence of these disorders within primary care.

The registration systems used in Belgium are still suboptimal. Collected treatment data, for example, include hospitalizations but not ambulant care and prevalence surveys may not

reach vulnerable youngsters at risk of substance misuse. Therefore, these findings should be read with caution.

Drug and alcohol misuse in parents. Results from the Belgian Health Interview Survey

The study findings indicate that a substantial number of children (12%) who participated in the Belgian Health Interview Survey (HIS) are living with a parent who has/had an alcohol problem. This proportion can be considered a 'rough' indication of the number of children of alcohol misusing parents in Belgium, since we assessed 'lifetime' rather than 'last year' alcohol abuse. Based on this study we recommend the following:

- Alcohol misuse and harmful use need to be situated on a continuum from occasional use to dependence. Given the tolerance and predominance of substance use in dependent persons' lives, it can be hypothesized that children of alcohol dependent persons will be more at risk compared with children of parents who drink heavily but who are not dependent on alcohol. Consequently, more specific assessment instruments are needed to estimate this phenomenon on population level. Also, a dimensional – rather than a categorical – approach is warranted when assessing the consequences of alcohol and other substance misuse, since substantial heterogeneity is observed within the categories 'substance abuse' and 'substance dependence'.
- Accurate prevalence estimates are essential to govern policy-making and to support the implementation of appropriate interventions and preventive measures for children of substance misusing parents. However, several methodological constraints (e.g. sample selection, conceptualization of abuse/dependence, type of assessment instrument) may hamper the identification of at risk children and families. Stigmatization of substance misuse may withhold potential respondents from study participation or disclosure or may enhance socially desirable answers. Therefore, sensitive and sufficiently comprehensive measures are needed to assess the association between parental substance misuse and various health-related outcomes. In addition, more information is needed on the impact of parental alcohol misuse on families' and individual family members' well-being and quality of life.
- The data did not reveal any differences in health risks for children from parents who scored above the CAGE cut off-score and those scoring below the cut-off score. This is probably due to an underrepresentation of severely dependent and marginalized individuals in the HIS. The health risks and inequalities among children of alcohol abusers may have been considerably higher when clinical or treatment populations would have been involved in the study sample. Adapted research methodologies and targeted study designs (e.g. over-sampling of high risk populations) should be

considered to recruit representative population samples. Furthermore, the small number of illegal drug users – and the even lower number of drug misusers – did not allow to focus on health outcomes among children of drug misusers. Research among a sufficiently large sample of drug dependent parents could provide insights in health and social outcomes among children from these families, as well as a comparative study between children from alcohol and drug misusing families.

- In this study, we only focused on children who were still living with their parents. Given the high number of associated family and relational problems (Vanderplasschen et al., 2010), many children of substance misusing parents do not longer live with their substance misusing parent. Little is known about the social and psychological impact of parental substance misuse, after being separated from a drinking or drug abusing parent.
- Although the CAGE is just a screener of (lifetime) alcohol abuse, this instrument allowed an assessment of parental substance misuse in relation to some (self-reported) health problems among adolescents. Still, additional research is needed to assess the relative impact of, for example, severity of addiction, parental style and social network support on adolescents' health and health behavior, not only among the general population but also among 'at risk' or institutionalized populations. Furthermore, (large-scale) quantitative surveys need to be complemented with qualitative in-depth interviews that allow understanding and explaining the mechanisms that lead to poorer health outcomes among children from alcohol misusing families.
- Overall, the scarcity of epidemiological data on substance use and parenthood in Belgium is striking. The lack of systematic data-collection on substance use issues is an old sore (Vanderplasschen et al., 2002). Such information would allow to monitor the evolution of (new) phenomena closely and to develop an evidence-based drug policy.
- Breaking the intergenerational cycle of addiction and deprivation and a vision on recovery need to be important aspects of a present-day integral drug policy (Best, 2012). Not only indicated prevention strategies and targeted interventions are necessary to avoid (a) new generation of substance misusers, but also recovery-oriented treatment strategies that help (former) substance misusers to develop stable, contributing and satisfying lives.
- Finally, the increased attention for the potential health risks of children of substance misusers should not lead to stigmatization of these children or to needless interventions. Not all alcohol misusers are reckless parents and children cope with this situation differently. Resilience is a well-documented phenomenon among

children of alcohol and drug dependent parents (Vanderplasschen et al., 2010). Individual and contextual strengths and resources may help children to overcome challenging situations. Moreover, the reported health risks are relative and mediated by, among others, children's maturity (age) and the family's socio-economic status. Therefore, clear criteria are needed to justify (child protection) interventions in substance misusing families.

Parental substance misuse and associated risks for children's development

Although a snapshot of the literature on substance misusing families was provided, a comprehensive and systematic review of the literature on this topic is needed. The reviewed studies date back to the 1990s and early 2000s, but the most recent literature was not included in this review. Also, given the complex and multiple problems these families cope with, findings and insights about related subjects from other disciplines/areas (e.g. family studies, parents with mental health problems) may help to document available evidence on children from substance misusing families. Based on this study we recommend the following:

- Treatment utilization data usually do not include information on children of persons entering substance abuse treatment. Besides individuals' living situation (living with partner and/or child(ren)), few information is collected regarding the situation of the children (e.g. number of children, living situation of the children, frequency of contacts, visiting arrangements). It is recommended to focus more intensively on the situation of substance misusing parents entering treatment during the assessment phase, in order to deal appropriately with this issue during treatment.
- Parenting groups or classes should be (an optional) part of any substance abuse treatment program, given the substantial number of clients who are mothers/fathers and their struggle with varying parenting issues. Moreover, as one of the secondary analyses revealed clients' motivation for treatment – and subsequent retention – is associated with parenthood (Goethals, 2012). Dealing with these issues may further enhance clients' motivation, retention and – eventually – treatment outcomes.

An inventory of relevant Belgian organizations and stakeholders involved in prevention and treatment of alcohol and drug misuse in young people and the challenges they encounter in working with adolescents

The descriptive map inventoried existing services, activities and actors for the detection, prevention and treatment of substance abuse in children and youngsters and also assessed their views towards the use and usefulness of guidelines in their field. A major limitation was the low response to our survey on the use of guidelines. Based on the inventory and the small-scale qualitative studies we recommend that:

- Early intervention, harm reduction and re-socialization for minor drug users are scarce in Belgium. The effectiveness of these approaches should be investigated and if shown effective, these should be integrated within the current prevention and treatment services.
- The study on the use of guidelines with respect to the treatment and prevention of substance misuse among young people should be continued using appropriate methodology.
- Specific graduate and postgraduate training in the treatment of substance-related disorders should be considered. It may increase the knowledge and positive attitude to evidence-based guidelines for (future) clinicians.
- Client-driven programs should be further developed and evaluated in practice, as an alternative to more traditional prevention and treatment programs that might be inappropriate for our target group. Question driven approaches include out-reaching and client-centered programs.
- The high level of fragmentation of responsibilities in the field of prevention, detection and treatment of youngsters has been identified as counterproductive. Practitioners expressed a need for more coherence and more efficient communication channels between different stakeholders in the field. Obstacles that hinder such a networked approach should be identified and dealt with to strengthen interprofessional relationships.
- Future research should also 'give a voice' to the youngsters involved in such programs, to determine what is perceived as optimal or best care. This would allow for a further optimization of existing programs targeting youngsters or the development of more appropriate ones.

Adapting practice guidelines for the prevention, screening, assessment and treatment of alcohol and drug misuse in adolescents.

The guidelines were developed with the aim to facilitate a coherent drug policy for young people in Belgium. The ADAPTE methodology we have used to develop these guidelines has only been finalized in 2010 and is still in the process of being evaluated for use in different countries, settings and for a variety of different topics. Recent reports and contributions to the Guideline International Network conferences demonstrate a growing popularity of the ADAPTE methodology. Despite its popularity, published process evaluations of the ADAPTE methodology are still sparse, and we found only two evaluations from Canada, published in 2013.

This project was the first to adapt multidisciplinary guidelines across different domains, including social welfare, health care, school settings and the recreational sector. To keep the process manageable we distinguished between experts on the domain of treatment and those on the domain of prevention. Subsequently we chose splitting the topic into three guidelines instead of developing an umbrella guideline covering all these areas. The cooperation between these experts from different disciplines and different settings required critical attitude to assess one's own sector but also to an engagement to assess other subfield of expertise. Achieving coherence was complicated by different viewpoints within the group of stakeholders between representatives from different professional fields and professionals as opposed to lay-persons involved. In addition, little is known about how to valorize their input in a valid and transparent way. We included their comments as well as the comments resulting from the piloting exercise under a separate heading in the guidelines.

The adaptation process was complex due to the variety of professional profiles. It was further complicated by the different approaches (abstinence approach versus harm reduction approach) used in the two geographical parts of Belgium. Apart from scientific and content expertise the ADAPTE process required a large amount of creativity in the adaptations made to better match the needs of the stakeholders, for example we amended an existing instrument to evaluate the applicability of the draft guidelines in practice, we followed an experimental pathway and tried to find answers to clinical questions that were not covered by the selected high-quality source guidelines.

During the ADAPTE-youth project we experienced a tension between using rigorous evidence and needs from care professionals dealing with these adolescents on a daily basis. Professionals indicated a need for clear guidance on the level of actions, for example: how should we screen for alcohol and drug misuse in adolescents? Which professionals should screen? Which adolescents are at risk for drug misuse and should be targeted with indicated

prevention? However the current evidence does not provide guidance on that level of detail. The evidence does specify the approaches with the best chance of success. Currently, it is unclear how these approaches should be implemented, which probably also depends on the context, which again will differ between regions and between disciplines.

We have experienced the ADAPTE methodology as promising for working with multidisciplinary teams across different settings and we are confident that the process evaluation and the pilot in the field conducted will inform researchers and policy makers worldwide on how to deal with adaptation processes using multidisciplinary teams of stakeholders. It contains relevant advice to those embarking on such a journey in nearby future. Based on these evaluations we recommend the following:

- In order to improve the ADAPTE methodology, more evaluations and publications about experiences with this methodology are needed. This will ensure that researchers can learn from previous experiences and improve the methodology.
- To improve future adaptations of multidisciplinary guidelines we recommend exploring the options of subgroup discussions within the larger multidisciplinary panel. This would potentially prevent the drop-out of particular profiles that weren't able to contribute to discussions that were primarily clinically focused.
- Clear instructions should be developed on how to valorize the input from the panel into the guidelines. There was a lack of evidence in the field of substance misuse specifically for adolescents that could support some of the concerns expressed by the stakeholders. This prevented us from integrating the information provided in the list of recommendations or to prioritize one viewpoint over another based on evidence.
- The guidelines focus on what action should be performed but, with a few exceptions, do not state which care professionals should perform the action or how the action should be performed. Main reason is that the evidence does not provide us with more information. Based on these guidelines, all relevant institutes should operationalize the guidelines for their situation as these institutes are better suited to respond to individual needs of particular profiles identified within the target group, which may in turn increase the implementation of the guidelines.
- The lack of evidence, specific to the population was a recurrent issue. This indicates a need to invest in original, empirical research addressing the evidence gaps in knowledge on preventing, screening, assessing and treating alcohol and drug misuse in adolescents. Such studies should be carried out, while carefully evaluating the process and effects in order to improve the body of evidence in the field of

adolescent substance misuse. Interventions that have been proved to be effective can then be included in future updates of the guideline.

- The use of guidelines is a prerequisite to improve the quality of care. To increase the likelihood that the guidelines are implemented in practice a clear dissemination strategy should be developed. The guidelines of the ADAPTE-youth project can be disseminated to those actors and organizations identified through the descriptive map. These actors can be stimulated to respond to current gaps in the prevention, screening and/or treatment of substance misuse in adolescents. Communication platforms that facilitate such discussion could be considered. Furthermore, future guideline development projects should reserve time and resources to develop a plan on how to implement the newly guidelines in practice.

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List of appendixes

1. Richtlijn Screening, assessment en behandeling van jongeren met alcoholmisbruik
2. Guide de bonne pratique Dépistage, évaluation et traitement de l'abus d'alcool chez les jeunes
3. Richtlijn Screening, assessment en behandeling van jongeren met drugmisbruik
4. Guide de bonne pratique Dépistage, évaluation et traitement de l'abus de drogues chez les jeunes
5. Richtlijn voor de preventie van alcohol- en drugmisbruik bij jongeren
6. Guide de bonne pratique pour la prévention de l'abus d'alcool et de drogues chez les adolescents
7. List of publications related to ADAPTE-youth

Appendix 7. Current list of publications related to the ADAPTE-youth project

- Bekkering GE, Aertgeerts B, Asueta-Lorente J, Autrique M, Goossens M, Smets K, Van Bussel J, Vanderplasschen W, Van Royen P, Hannes K, on behalf of the ADAPTE-youth project Group Guidelines for alcohol and drug misuse among adolescents: a systematic review. *Journal of Child Psychology and Psychiatry* 2013; doi:10.1111/jcpp.12145
- Van Hout K. Verslaafd! En dan? Kwalitatief onderzoek bij begeleiders van jongeren met een drug- en/of alcoholprobleem. Masterproef aangeboden tot het verkrijgen van de graad van Master of science in de Psychologie. KU Leuven, 2011-2012. (Promotor: K Hannes)
- Billiet H. Kwalitatief onderzoek bij hulpverleners binnen de residentiële sector van jongeren met een drug- en/of alcoholprobleem. Masterproef aangeboden tot het verkrijgen van de graad van Master of science in de Psychologie. KU Leuven 2012-2013.
- Bekkering GE, Emmers E, Hannes K. Prevention for alcohol and drug misuse in adolescents: a systematic overview of systematic reviews. Submitted for publication.

Abstracts:

- Bekkering GE, Aertgeerts B, Asueta-Lorente J, Autrique M, Goossens M, Smets K, Van Bussel J, Vanderplasschen W, Van Royen P, Hannes K, on behalf of the ADAPTE-youth project Group. Systematically reviewing existing guidelines of adolescents misusing alcohol and drugs: lack of evidence or lack of quality?
- Goossens M, Bekkering GE, Smets K, Aertgeerts B, Autrique M, Van Royen P, Hannes K, on behalf of the ADAPTE-youth project Group. Inter-rater reliability of AGREE II: need for refining the criteria?
- Bekkering GE, Emmers E, Hannes K. Is there a potential of umbrella reviews to inform guideline development? *Abstract Cochrane Collaboration* 2013.