Delivering Targeted Motivational Interviewing to Reduce Alcohol Related Harm in Adolescents

Abstract

Aim: Investigating the effectiveness of targeted Motivational Interviewing (MI) as a Brief Intervention (BI) for reducing adolescent alcohol use and the associated health and social harms.

Background: The implications of alcohol misuse are both far reaching and cumulative, with alcohol related harm identified as a major public health issue. Adolescents are particularly vulnerable to the toxic effects of alcohol. In response, both NICE and WHO advocate the delivery of brief interventions as a supportive harm reduction strategy.

Method: Multiple databases were searched to locate systematic reviews of RCT's published between 2006 and 2016. Studies were required to have utilised brief MI; specific to adolescent alcohol use and harm reduction.

Results: Interventions based upon MI principles provided encouraging results, despite the utilisation of differing intervention designs, settings and outcome measures.

Conclusion: Targeted MI can reduce adolescent alcohol consumption, frequency of use and the associated health and social harms. As leaders of the Healthy Child Programme (5-19), School Nurses are well placed to deliver these interventions.

Keywords: Adolescent, alcohol misuse, harm reduction, targeted, brief interventions, motivational interviewing.

Introduction

Within various local authorities, austerity measures have resulted in the decommissioning or redevelopment of many agencies that previously supported and provided referral routes for School Nursing services. School Nurses are therefore increasingly seeking to develop

strategies to overcome gaps in early intervention provision (Law et al. 2011). One such area of concern is adolescent alcohol misuse. Experience as a Specialist Community Public Health Nurse (SCPHN) with a background in Adult Mental Health and Substance Misuse, experiential evidence gained from facilitating group work and patient stories, has identified that many adult substance misusers consider their issues to have started within adolescence.

Due to the scarcity of services supporting adolescents who are not considered as addicted to alcohol but who are experiencing the negative biopsychosocial consequences of alcohol consumption, literature was explored to identify whether there is an evidence based strategy to support School Nurses working within this area of early intervention. A targeted approach was utilised to identify strategies for individuals choosing to consume alcohol despite the universal alcohol education provided throughout the school curriculum (Lee et al. 2016).

Why is Alcohol Use a Concern?

The implications of alcohol misuse are both far reaching and cumulative with estimated costs to the National Health Service (NHS) of £3.5 billion, as a result of alcohol related harm and associated health conditions. These figures include an approximation of 1,059,210 hospital admissions, 70% of Emergency Department (ED) attendances and up to 10,000 deaths within the United Kingdom (UK) each year that can be attributed to the use and misuse of alcohol (Balakrishnan et al. 2009; Institute of Alcohol Studies 2015).

The World Health Organisation (WHO) define alcohol related harm as including hazardous, harmful and dependant drinking (WHO 2002; WHO 2006) that negatively affects families, social groups and communities in addition to those directly affecting the individual (Velleman 2011; Lacey 2011). Perhaps unsurprisingly, alcohol related harm has been identified by the National Institute of Health and Care Excellence (NICE) as a major

public health issue, alongside recommendations that early intervention should be a key component of harm reduction policies (NICE 2010; NICE 2011).

Both NICE and WHO advocate delivering Brief Interventions (BI) to hazardous drinkers including young people, who are particularly vulnerable to the toxic effects of alcohol as a supportive harm reduction strategy. However, no specific guidance is provided as to what age group constitutes a 'young person' or which BI strategies are considered most appropriate (WHO 2006; NICE 2010; NICE 2011).

Adolescent Alcohol Consumption

Carney and Myers (2012) describe adolescence as being a critical period for developmental outcomes, with Leifer and Fleck (2012) explaining that adolescence can be defined by three distinct age ranges: early (10-13yrs), middle (14-16yrs) and late adolescence (17-20yrs). Despite the number of young people consuming alcohol continuing to decline during recent years (Drinkaware 2015), adolescent alcohol use remains a concern due to the multi-faceted nature and effects of their drinking behaviours (IAS 2015). Despite this decline, the quantity and frequency of alcohol consumed by young people that do choose to drink has increased significantly, with weekly consumption amongst 11-15 year olds more than doubling since 1990 (Alcohol Concern 2013; Alcohol Concern 2015). With surveys suggesting that 43% of adolescents have consumed alcohol by the age of 15yrs (Drinkaware 2015) and with a trend of intentional intoxication, this culture and the effects of binge drinking were noted by Bremner et al (2011) as particularly concerning.

Adolescent Alcohol Related Harm

Increasingly, adolescents are experiencing both short and longer term alcohol related harms with more than 65,000 individuals under the age of 18 being admitted to hospital within England for alcohol related conditions, representing an average of 36 ward

admissions daily (Alcohol Concern 2010; Drinkaware 2016). However, this data does not include ED attendances, so a more accurate figure may be somewhat higher. This is of particular concern as alcohol misuse poses a risk for delayed social and academic development and negatively impacts adolescent brain development (Masten et al. 2008).

In addition to health harms, research has identified that adolescents consuming alcohol are experiencing many negative outcomes associated with risk-taking behaviour, including regretted sexual experiences, violence, criminal activity, personal injury and general delinquency (Feldstein and Miller 2006; Bremner et al. 2011; Alcohol Concern 2013). Additionally, a relationship between early alcohol use and an elevated risk of substance misuse disorders in later life has also been identified (Winters and Lee 2008). When considering the public health role of the SCPHN, the importance of early intervention, as advised by the Healthy Child Programme 5-19 (DH 2009) becomes apparent. This is particularly relevant when adolescents are coming in to contact with other agencies including health and offending as a result of alcohol related harm and associated behaviours (United Nations 2003; Carney and Myers 2012).

Brief Interventions

The importance of early intervention has been recognised and BI has been recommended as a supportive strategy (WHO 2006; NICE 2010; NICE 2011). However, little guidance is provided as to what form these interventions should take, how they should be delivered or over what period of time they are most beneficial. As working with young people within secondary schools often necessitates the client temporarily leaving their classroom, it was considered that the exploration of BI would have the greatest benefit for future practice, educational attainment and also maintain positive engagement with the schools themselves. As Hymen (2006) explains, BI can be described as an intervention that can motivate an individual to change a problem causing action. BI commonly includes discussions, workbooks, pamphlets or other means appropriate to the situation (Moyer et

al. 2002). Although BI appears a suitable strategy for working with adolescents and allows the practitioner to utilise their own creativity, discussions with SCPHN peers, concluded that a more prescribed framework may guide those who felt less confident regarding the provision of therapeutic interventions for behaviour change.

Motivational Interviewing (MI) is a form of BI that provides practitioners and clients with a more structured framework whilst enabling more experienced practitioners a degree of flexibility and creativity within the core principles (Miller and Rollnick 2012).

As many SCPHN's have gained experience of MI throughout their Registered Nurse careers and SCPHN training, further investigation was undertaken to identify the suitability of delivering MI as a brief intervention.

Brief Motivational Interviewing

Motivational Interviewing (MI) has been found effective in reducing both alcohol intake and risk-taking behaviours within the adult population (Beckham 2007; Lundahl et al. 2010). However, as Jensen et al. (2011) explains, whilst the evidence for utilising MI to modify adult behaviours is strong, MI within adolescent populations is an area where quality research is only just beginning to emerge.

MI differs from many other therapeutic interventions in that the purpose is not to purely impart information or skills, rather to enhance and reinforce an intrinsic motivation to change, whilst exploring and resolving ambivalence (Monti et al. 2007; Jensen et al. 2011). Utilising a client centred approach, techniques of MI include reflective listening, communicating respect and utilising open-ended questions to explore unhelpful behaviours, whilst focusing upon the clients' strengths and autonomy to make positive changes (Beckham 2007; Miller and Rollnick 2012). When considering the target population, the principles of MI appear to theoretically reflect the adolescent developmental need of exerting independence and autonomy, whilst coinciding with the

development and refinement of self-awareness and decision making skills (Baer et al. 2008; Naar-King and Suarez 2011).

Literature Search and Inclusion Criteria

A systematic literature review was undertaken to identify and review recent published evidence investigating targeted strategies for reducing adolescent alcohol related harm. A search strategy was developed by utilising the PICO Framework, as advised by Strauss et al (2011) to identify the components of the presenting issue and focus the research question. Search terms identified directly from the research question enabled the exploration of several databases and were enhanced by utilising both truncation and Boolean search strategies, (Aveyard 2014; Parahoo 2014) as described in Table 1.

These key terms were then explored within the following search engines and databases: CINAHL, Cochrane, EBSCO, ERIC, Medline and PsycINFO with results assessed in accordance to the inclusion and exclusion criteria as demonstrated within Diagram 1. Following this process, a total of 5 studies were selected (Table 2) for systematic review utilising the Critical Appraisal Skills Programme (CASP UK 2013).

Selected studies: Grenard et al. (2007), Wachtel and Staniford (2010), Jensen et al. (2011), Barnett et al. (2012) and Carney and Myers (2012).

Critique of Evidence

The systematic review of Wachtel and Staniford (2010) had a combined sample size of 2114 participants and reviewed the effectiveness of delivering BI for adolescent alcohol reduction within clinical environments. Although interventions were predominantly MI based, the 14 included studies differed in design, sample selection and intervention delivery by utilising single or multiple sessions delivered either individually or within group settings. However, a reliance upon the self-reporting of data may have been a limitation. As Taylor et al. (2012) explains, self-reporting methods have many limitations including

participants misunderstanding questions or misrepresenting their alcohol use and any harmful effects experienced. Studies utilising group based interviews may have also introduced bias by preventing open and honest disclosures (Taylor et al. 2012).

Barnett et al. (2012) also explored the ability of differing brief MI formats to positively influence adolescent substance misuse outcomes by grouping interventions according to whether MI was delivered alone or alongside another intervention. Participants had an even gender distribution, however there was little mention of ethnicity which may negatively affect transferring recommendations into diverse practice areas.

Jensen et al. (2011), specifically focused upon MI for influencing adolescent behaviour change and the maintenance of brief MI treatment gains following intervention conclusion. 12 (n=57%) of the 21 RCT's provided distinct outcome measures for alcohol use. However, only 5 studies included explanations of adherence to MI protocols and coding, as recommended by Moyers et al. (2005) for providing validity. The majority of studies (n=17) utilised MI as a stand-alone intervention delivered during singular sessions, with follow up intervals spanning an average of 6 months to explore the ongoing therapeutic value.

With consideration of targeted interventions, the pilot study of Grenard et al. (2007) explored the feasibility of delivering brief MI within schools to adolescents previously identified as being at risk of substance misuse. Participants were recruited from secondary schools with written consent from participants, parents or guardians. Demographically, age and ethnicity was distributed evenly. However, females were less represented than males with no explanations regarding randomisation achievement.

Carney and Myers (2012) also focused upon delivering brief MI within educational settings for reducing alcohol use and delinquent type behaviours. These behaviours included school truancy, aggression, fighting and behaviours with legal consequences such as

shoplifting, theft, assault and criminal damage. Sub-group analysis of intervention delivery (group versus individual) and intervention duration (singular versus multiple sessions) were also conducted to allow for high levels of heterogeneity across the studies and ensure accurate interpretation of results (Aveyard 2014).

Key Findings

All studies utilising brief MI reported encouraging results regarding the use of this strategy to address alcohol misuse and harm reduction within adolescent populations. Wachtel and Staniford (2010) reported significant results regarding harm minimisation and readiness to change in addition to reductions in alcohol consumption, frequency of use and binge drinking. MI delivered individually during an average of 4 sessions were most effective. These results concur with Jensen et al. (2011) who evaluated treatment intervals and utilised follow-up periods to identify treatment gains following intervention conclusion. Although the majority of studies had follow-up periods of less than 6 months, results suggested that MI maintains effectiveness over time. This appears consistent with evidence that MI promotes sustained reductions in substance misuse amongst adult populations (Ball et al. 2007). However, the evidence highlights the issue that no explicit criteria exists for exactly what constitutes an MI intervention (Miller and Rollnick 2009). This apparent inconsistency underpinned the research of Barnett et al. (2012) who reviewed differing MI designs and found improved alcohol outcomes, despite varying formats and modalities. Face-to-face interventions were also identified as more effective than those utilising digital technologies including smart phones or computers.

Results suggested improvements regarding the use of illicit substances, drinking frequency and problematic behaviours. However, outcome measures for reducing binge drinking were not statistically significant. Of particular interest was the greater 'readiness to change' identified during follow-up. Readiness to change is believed to be an important mediator in the process of changing drug or alcohol misuse (Miller and Rollnick 2012) and

within this study, MI appeared to encourage participants to reflectively consider and modify their behaviours. Carney and Myers (2012) explored behaviours further with a specific focus upon delinquency and criminality. By analysing post MI intervention outcomes, subgroup analysis provided strong evidence in support of MI as an early intervention for adolescents. With reductions in alcohol or drug use reported, multiple sessions delivered to individuals rather than groups were found to have the greatest effect upon behavioural outcomes.

Recommendations for Practice

Adolescents are often identified as misusing alcohol following contact with a number of agencies including Primary Care, Emergency Departments, Ambulance services, Schools and the Criminal Justice System. Adolescents experiencing negative health or social consequences associated with alcohol misuse may be particularly receptive to Brief Interventions (Alcohol Concern 2010). The development of robust care pathways that facilitate timely referral routes from associated agencies to School Nursing Teams could enable the provision of targeted interventions that capitalise upon the 'teachable moment', as described by Barnett et al. (2012) as the window of opportunity when the adverse event is still current. As brief MI combines a client centred approach to exploring unhelpful behaviours whilst supporting the refinement of autonomous decision making (Miller and Rollnick 2012), this style of intervention appears well within the scope of the nursing profession (Wachtel and Staniford 2010). With the registered School Nurse being at the heart of the school health team (DH 2009) and benefitting from the knowledge and skills of their SCPHN training, it may appear logical and reasonable to consider the SCPHN as being well placed to deliver these interventions.

Conclusion

From reviewing the evidence, it appears that the success of MI within adult populations can be replicated into a targeted harm reduction and health promotion strategy for adolescents. Brief MI delivered individually and face-to-face during an average of 4 sessions were found to be most beneficial for behaviour change, indicating that a relatively small number of contacts can produce meaningful results beyond intervention conclusion. However, with few recent studies within the United Kingdom, further research may ensure that results are transferrable. Qualitative research that focuses upon alcohol misuse, distinct from the more generalised umbrella term of 'substance misuse' may also provide a clearer understanding specific to the cultural normalisation of alcohol use within the United Kingdom and ensure that the voice and perspectives of adolescents inform future practice.

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Table 1 – Research Question Framework			
Population	**I**ntervention	**C**omparison	**O**utcomes
Adolescen* *AND*	"Motivational Interviewing" *AND*	"Alcohol Misuse" *AND*	"Harm Reduction"
OR	*OR*	*OR*	*OR*
"Young Pe*" Teen*	Brief "Brief Inter*" Motivat* Target*	Alcohol* "Substance Misuse"	"Alcohol Reduction"

Inclusion / Exclusion Criteria	
Date of Publication	Inclusion of research from within previous 10 years (to reflect societal culture)
Language / Country of Publication	Research will be required to have been published in English language (and its international variances) / No country restriction
Participants	Studies including participants from within the adolescent age range included
Additional Inclusion Criteria	- RCTs including brief MI strategies - Full text only - Peer reviewed only - Studies addressing adolescent alcohol misuse and/or harm reduction
Additional Exclusion Criteria	- Studies of a universal educational nature rather than targeted - Studies without control groups - Studies without sample age - Exclusion of studies that did not discuss alcohol specific data/results

Table 2 – Research Studies for Critical Appraisal

Authors	Journal	Study Method	Intervention
Grenard et al. (2007)	Journal of Adolescent Health	RCT	Brief Motivational Interviewing Delivered Within Continuation Schools + 3 Monthly Follow-Up Periods
Wachtel and Staniford (2010)	Journal of Clinical Nursing	Literature Review	Evaluation of Brief Intervention Strategies Specific to Alcohol Reduction & Binge Drinking, for Participants Aged 12-25yrs Old
Jensen et al. (2011)	Journal of Consulting and Clinical Psychology	Meta-Analytic Review	Quantitative Evaluation of the Effectiveness of Motivational Interviewing Interventions for Adolescent Substance Use Behaviour Change
Barnett et al. (2012)	Addictive Behaviours	Systematic Review	Review the Ability of Different Motivational Interviewing Formats to Influence Outcomes & Explore Mechanisms of Change
Carney and Myers (2012)	Substance Abuse Treatment, Prevention and Policy	Systematic Review and Meta-Analysis	To Summarise the Evidence and Assess the Effectiveness of Early-Interventions for Substance Using Adolescents. Pre-Test, Post Test & Follow-Up Measures.

Diagram 1 - Search Strategy Overview

DelphiS Search including:

CINAHL Plus: 39

MEDLINE: 32

SocINDEX: 12

ScienceDirect

Dir. of Open Access Journals: 5

Scopus: 2

Search Terminology:

Adolescen* **OR** "Young Pe*" **OR** Teen***AND** "Motivational Interviewing" **OR** Brief **OR** "Brief Inter*" **OR** Motivat* **OR** "Young Pe*" **OR** Teen* **AND** "Alcohol Misuse" **OR** Alcohol* **OR** "Substance Misuse" **AND** "Harm Reduction" **OR** "Alcohol Reduction"

601 Results

Limiters:

- 2006-2016
- English Language
- Full Text
- Peer Reviewed

133 Results

Duplicates Removed: **31**

102 Results

Title Search / Abstract Review: **46** excluded

Papers did not meet EBP aims, objectives and/or inclusion/exclusion criterion

Full Text Unavailable

56 Results

Further Exclusions: 33

14 = Universal, not targeted

7 = Not RCTs

7 = Did not use control groups

5 = Inappropriate age range or age not indicated

23 Results for full in-depth analysis and review

5 Papers for Systematic Review by CASP