

Development and evaluation of an educational intervention in youth mental health for primary care practitioners.

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Abstract

Objectives: Irish adolescents have one of the highest rates of suicide and self-harm in the European Union. Although primary care has been identified as an opportune environment in which to detect and treat mental health problems in adolescents, lack of training among primary care professionals (PCPs) is a barrier to optimum identification and treatment. We describe the development and evaluation of an educational intervention on youth mental health and substance misuse for PCPs.

Methods: Thirty general practitioners and other PCPs working in the Mid-West region participated in an educational session on youth-friendly consultations, and identification and treatment of mental ill-health and substance use. Learning objectives were addressed through a presentation, video demonstration, small-group discussions, role play, question-and-answer sessions with clinical experts, and an information pack. Following the session, participants completed an evaluation form assessing knowledge gain and usefulness of different components of the session.

Results: 71% of participants were involved in the provision of care to young people. 55% had no previous training in youth mental health or substance abuse. Participants rated knowledge gains as highest with regard to understanding the importance of early intervention, and primary care, in youth mental health. The components rated as most useful were case studies/small group discussion, the 'question-and-answer session' with clinical experts, and peer interaction.

Conclusions: The educational session outlined in this pilot was feasible and acceptable and may represent an effective way to train professionals to help tackle the current crisis in youth mental health.

Key words: Youth mental health, primary health care, continuing medical education.

Introduction

A recent report into the intentional injury of children in the EU found that Ireland has the highest rate of female suicide (2.09/100,000) and the second-highest rate of male suicide (5.12/100,000) in persons aged 0-19 years (MacKay & Vincenten, 2014). These figures, in turn, reflect a much wider incidence of self-harm in this population (Hawton *et al.* 2012; McMahon *et al.* 2014). Depression, anxiety, and emotional stress are commonly experienced by Irish adolescents (Connolly *et al.* 2012), but remain undetected and untreated in many instances (Coughlan *et al.* 2014). Research in Ireland and internationally has also shown that adolescent mental health issues often co-exist with, and are exacerbated by, the use of alcohol and illicit drugs (Connolly *et al.* 2012; Coughlan *et al.* 2014; James *et al.* 2013; Degenhardt *et al.* 2013).

Epidemiological data indicates that the onset of most psychiatric disease occurs within a discrete timeframe between 12 and 24 years (Kessler *et al.* 2005; Patel *et al.* 2007). Onset of mental illness in this phase of life, when many young people are completing their education, making early career choices and establishing relationships, may have economic and social consequences that extend into adulthood (Patel *et al.* 2007). Though not unequivocal, there is evidence to indicate that early intervention could reduce 'direct' healthcare costs and may lead to better clinical outcomes in patients with a wide range of mental health disorders including, but not limited to, ADHD (Trillingsgaard *et al.* 2014), psychosis (Mihalopoulos *et al.* 1999; McGorry *et al.* 2007a; McGorry *et al.* 2008; Mihalopoulos 2009), bipolar disorder (Berk *et al.* 2007), depression (Lynch & Hornbook, 2005; Allen *et al.* 2007), and substance abuse (Lubman & Hides, 2007). This early promise has led early intervention in youth mental health to be described as a 'best buy' for both patient and healthcare provider (McGorry *et al.* 2007b).

Increased utilisation of primary care is central to strategies that have been devised to tackle the crisis in youth mental health both in Ireland (Department of Health and Children, 2006) and

internationally (NICE, 2005; United Kingdom Department of Children, Schools and Families, 2010; NSW Centre for the Advancement of Adolescent Mental Health, 2013). As the first point of contact for individuals seeking healthcare and because of the ongoing support that it offers, primary care is ideally placed to facilitate early detection and intervention in youth mental health problems (Cullen *et al.* 2012). However, barriers exist in getting young people to present in primary care with mental health issues. These include young people's own beliefs about mental illness (Haller *et al.* 2007), awareness that general practitioners (GPs) can assist with psychological and social problems (Biddle *et al.* 2006) and resistance to accepting a mental health diagnosis (van Voorhees *et al.* 2005). When young people do attend a practice, physicians' own attitudes and beliefs can also impede prompt detection and treatment of mental illness (Iliffe *et al.* 2009). Correct diagnosis is further complicated by the fact that presentation of mental illness in young people tends to be atypical (Cullen *et al.* 2012).

Continuing medical education (CME) programs in the areas of youth mental health and substance abuse may help GPs overcome some of these barriers. Educational interventions aimed at increasing the detection of adolescent depression and suicidality by GPs have reported considerable success (Gledhill *et al.* 2003; Fallucco *et al.* 2012; Kramer *et al.* 2013). A randomised controlled trial (RCT) of an educational intervention to address deficiencies in Australian GPs' care of adolescents was found to increase GPs' skills, knowledge and confidence in this area (Sanci *et al.* 2000) and these gains were still evident in a five-year follow-up study (Sanci *et al.* 2005).

This paper describes the development and evaluation of a pilot educational intervention in youth mental health and substance misuse for primary care practitioners.

Methods

Participants, recruitment and ethical approval

General practitioners and other professionals working in the Mid-West region of Ireland were invited to take part in an educational session on youth mental health and substance abuse at the host institution. Email invites were circulated to GPs affiliated with the host institution, local specialist GP training programmes, staff within the Faculty of Education & Health Sciences at the host institution, staff within HSE Mental Health services and HSE Primary Care in the region.

Applicants could register online or by post. Upon registration, participants were asked to indicate questions and issues they would like the session to address. Thirty-nine participants registered for the session, thirty of whom attended. Eight participants were general practitioners, but in keeping with the multidisciplinary ethos of the session, participants with backgrounds in psychology, psychotherapy, nursing, and the social sciences also participated.

Twenty-four (80%) of those who attended completed evaluation questionnaires. Participants were informed that the session was a pilot study, and that by agreeing to participate, their responses would be used for the purposes of research. The educational session was approved for CME purposes by the Irish Council of General Practitioners (ICGP). The ICGP Research Ethics Committee approved the study.

Overview of the educational session

The learning objectives and content (see Box 1) were informed by recently developed evidence-based consensus guidelines outlining the five domains in which primary care can play a role in the treatment of youth mental health (see Box 2) (Schaffilitzky *et al.* 2014) and feedback from registration forms.

The session was designed to be two hours in duration and interactive in format. Interactive methods, such as role-play and discussion with clinical experts, are techniques which have been shown to be superior to didactic, theory-based methods in changing physician behaviour and patient health

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outcomes (Bloom, 2005). This approach has previously been received favourably by Irish GPs, participating in an educational intervention to help GPs manage alcohol abuse among problem drug users (Klimas *et al.* 2014).

The session also aimed to encourage the use of standardised screening tools in the assessment of young people to increase the detection of mental health disorders in this population (Katon *et al.* 2008). One established framework for assessing adolescent mental health is the “HEEADSSS interview” (Goldenring & Rosen, 2004; Klein *et al.* 2014). This interview technique is recommended for use by the Australasian College of Physicians (2008), has been recommended as a screening tool for risk-taking behaviour in young women (Carr-Gregg *et al.* 2003), and is currently being adapted for use in Australian 'headspace' centres, which are multidisciplinary centres for the treatment of youth mental health (Parker *et al.* 2010). It has been shown to be useful in a diverse range of healthcare settings in which adolescents present, including surgery (Wilson *et al.* 2012) and emergency medicine (Cappelli *et al.* 2012; van Amstel *et al.* 2004).

An expert panel helped deliver the session, and included the Director of a Student Counselling Service, a Consultant Child and Adolescent Psychiatrist, the Regional Drugs Co-ordinator, the Deputy Manager of the Community Substance Misuse Team, and a Clinical Psychologist.

The session began with a ten-minute powerpoint presentation outlining the learning objectives and how the different components of the session would be organised. Following this, a series of case studies were presented to participants which were then discussed in small groups and with the expert panel. Participants were then shown a video in which a GP carried out the “HEEADSSS” interview with an adolescent patient (see Box 3). A question-and-answer session with the expert panel followed the demonstration. Discussion, feedback and questions were sought from participants throughout the session.

At the conclusion of the session, participants were presented with an information pack, which included information on youth mental health and substance abuse services in the region, a copy of

the ICGP 'Guidelines on the Treatment of Adolescent Mental Health in Primary Care', and reference sheets on consent and confidentiality, identifying common mental health disorders, and improving communication styles with young people.

Measures

Post-session questionnaires were given to all participants. Using a five point Likert scale (where 1=strongly disagree and 5=strongly agree), participants were asked to rate their level of agreement with statements on knowledge acquisition and the relative usefulness of each part of the session.

Information on participants' professional backgrounds (including professional experience and training in youth mental health), was sought. Open-ended questions asked participants to indicate what had been good about each component of the session, and what could have been improved.

Analysis

Participant responses were coded numerically from 1 to 5, with 1 representing 'strongly disagree, and 5 representing 'strongly agree'. Data were collated and analysed using SPSS Version 22.0. The first two sections of the questionnaire, measuring knowledge acquisition and perceived usefulness, were summed to give total scores for these variables. Descriptive statistics were computed for all of the quantitative measures described above (tables 1, 2, 3, 4). Potential differences in knowledge acquisition and perceived usefulness of session components between participants that had previous training in youth mental health and substance use, and those that did not, were investigated by examining the mean scores for each group.

Content analysis of the open question responses was conducted. Similar responses were categorised under the same code, and the number of participants were counted for each code.

Results

Participant characteristics

Twenty-four of the thirty participants that took part in the session returned questionnaires.

Participants' professional backgrounds and previous training in youth mental health are presented in table 1. The majority of the sample (71%) was directly involved in the provision of care to young people. Just under half of participants had previous training relating to youth mental health (45%) and youth substance abuse (45%).

Evaluation scores for the educational intervention

Participants tended to strongly agree or agree that they were able to state the importance of early intervention in youth mental health ($M = 4.52$, $SD = 0.51$) and their understanding of the importance of primary care in youth mental health ($M = 4.52$, $SD = 0.51$) following the session.

Participants tended to be neutral about their knowledge gains in relation to the conduct of a 'HEEADSSS' evaluation on a young person ($M = 3.65$ $SD = 1.19$) and in understanding what 'HEEADSSS' stands for ($M = 3.74$ $SD = 1.18$). The mean of the summed scale items for knowledge acquisition (table 2) was 46.45 ($SD = 4.96$, max = 55).

Participants found the case studies and small group discussions the most useful part of the session ($M = 4.46$ $SD = 0.51$), followed closely by the question-and-answer session with clinical experts ($M = 4.42$ $SD = 0.58$) and peer interaction ($M = 4.42$ $SD = 0.58$). Participants rated the powerpoint presentation as being the least useful part of the intervention, although this component was still rated very highly at 4.36 ($SD = 0.58$). The mean summed score for perceived usefulness (table 3) was 26.48 ($SD = 2.60$, max = 30) on a scale with a maximum of 30, indicating positive perceptions on average.

There was no significant difference in mean knowledge acquisition scores or mean ratings of

usefulness for the different components of the intervention between participants that had previous training in youth mental health, and those that did not.

Qualitative evaluation (table 4)

Participants gave more responses for ‘what was good about [each component of the session]?’ than ‘how can [this component] be improved?’ Many responses were general comments indicating that a component was useful and beneficial (e.g., “good”, “very good”, “excellent”).

The characteristic of the presentation which participants most valued was that it delivered “clear and concise messages.” One participant, however, felt the presentation could have been clearer and one wanted more time given to this component.

The characteristics of the case studies / small group discussion which participants valued were the interactive and dynamic quality of this component, particularly the sharing of knowledge and ideas and having access to “expert opinions”. Five participants felt that more time should have been given to this component and three thought a larger, quieter venue would have been more suitable.

Participants found the video presentation to be a useful medium for outlining the ‘HEADDSSS interview’ technique and provided a basis for “thinking through issues.” One participant suggested that there should be more discussion during the video, by stopping at key points to discuss the issues, and one thought better time management was needed during this component.

The characteristic of the question-and-answer session with clinical experts which participants most liked was the “helpful guidance” and “useful insights” they received from the experts. Participants had no suggestions for improvement of this component.

The characteristics of the interaction with peers which participants most liked were the opportunities to “meet other specialities” and to “share knowledge and experience.” Two

participants suggested that more time be given to this component, one participant suggested provision of a contact list and one advised that similar sessions be held in other locations.

Participants thought the supplementary information pack was a “very useful resource”, although a few participants had not had a chance to read it at the time of completing the evaluation form. Just one participant had a suggestion for improvement of the pack and advised including information relevant to a particular region in Ireland.

When asked how the session could be made more useful overall, participants advised that a larger venue be used and suggested having more of these types of workshops.

When asked what would help them better address youth mental health and substance abuse in practice, participants felt they could better address youth mental and substance use issues if they had more information on available resources and services to refer patients to, including psychology resources. Participants also felt that greater access to relevant services and resources was needed, e.g. in rural areas, including access to counselling in primary care.

Discussion

Key findings

A brief educational intervention developed to help primary care practitioners detect and treat youth mental health and substance use issues and to increase youth-friendliness in practice, was positively received by participants. Knowledge gains were rated highest with respect to understanding the role of primary care, and the importance of early intervention, in treating youth mental health.

Participants reported clinical case studies and interaction with peers and experts to be the most useful components of the session.

How these findings relate to other literature

The acceptability and positive reception of the present intervention is in keeping with previous literature that has shown a preference among CME participants for interactive, problem-based teaching methods (Smits *et al.* 2002). A number of participants took the opportunity in the general feedback section to request more interventions of this type, indicating a general preference for an interactive format. 76% of participants indicated an interest in pursuing a higher qualification in this area, a figure which highlights a desire among professionals for more CME in this area. The two-hour duration of the intervention was positively received by participants. This timespan appears to be optimal for an intervention of this type, having been utilised successfully in a previous study by this research group (Klimas *et al.* 2014) and in previous CME interventions in youth mental health (Gledhill *et al.* 2003; Falluco *et al.* 2012; Kramer *et al.* 2013).

Similar to previous work by this research group, peer interaction was rated by participants as being one of the top three most useful components of the educational session (Klimas *et al.* 2014).

Additional detail emerged from the open-ended question feedback. Participants derived great benefit from interacting with colleagues from different backgrounds, such as social work or

psychology; one participant suggested providing a contact list to aid further consultation beyond the session. This is encouraging when considered in the context of previous research that identified collaboration between PCPs, other health professionals, and community agencies as enhancing the provision of mental health treatment to adolescents (Leahy *et al.* 2013; Roberts & Bernard, 2012). The benefits of a multidisciplinary presence in educational interventions have also been documented in a systematic review that isolated features of successful educational interventions aimed at improving the management of depression in primary care (Gilbody *et al.* 2003). It is notable that the greatest amount of feedback with respect to improvement was elicited for the ‘case studies/small group discussion’ component of the session, and that this mostly comprised requests for additional time.

Participants rated their knowledge gains as lowest with respect to the HEEADSSS interview. This may be because it was the most specific and complex of the knowledge areas evaluated. It may also reflect a ceiling effect for an intervention of this duration. Though participant feedback was positive with respect to the length of the intervention, there may be limits to what can be learned in two hours. It should be noted that a full outline of the HEEADSSS interview, along with suggested questions, was provided in the information pack, ensuring further information was available for those who felt this component was not long enough in the educational session.

Methodological considerations

We acknowledge a number of factors that were likely to limit the generalisability of our findings. The sample size was small and comprised of volunteers and thus participants were likely to share characteristics that made them particularly amenable to an intervention of this type. Though the invitation was circulated widely, we have no data on those who did not respond. In particular, although participants represented diverse professional backgrounds, this information was not provided on feedback forms; the small number of participants and thus concerns regarding

anonymity of participants meant this was not an essential item of information for participants to provide on the study instrument. Finally, a precise picture of knowledge gain was difficult to ascertain in the absence of a baseline assessment of knowledge, and an objective test of knowledge post-intervention and we recommend that such an approach be adopted in future research with such aims.

Recommendations for future research

The present research was carried out as a pilot study in line with the MRC Guidelines for the development and evaluation of complex health interventions (Craig *et al.* 2008). Further evaluation of the present intervention would require, at the least, a replication of the present study in a wider range of locations and with a greater number of participants. It may be preferable, however, to employ a more rigorous design, such as including the intervention in a randomized trial. In addition, direct measurements of outcomes in GP practice, such as differences between detection rates pre- and post-intervention, would offer a more objective measure of the benefit of the intervention. Such data would allow comparison between the present intervention and other interventions that have been successful in increasing GP detection rates of mental ill-health in adolescents (Gledhill *et al.* 2003; Falluco *et al.* 2012; Kramer *et al.* 2013; Sanci *et al.* 2000; Sanci *et al.* 2005).

Conclusions

The present intervention shows considerable promise as a format for the improvement of practitioners' skills in dealing with the issues of adolescent mental health and substance abuse. The results of this pilot show that the intervention is both feasible and acceptable to participants. Future research can expand upon these initial findings with a more rigorous experimental design, by including objective measures of participant knowledge gain, and by direct measurement of clinical

outcomes post-intervention.

Acknowledgements

We gratefully acknowledge the support of the Health Research Board (HRB) of Ireland who funded the development and implementation of the intervention through the ‘Health Research Awards Programme’ (HRB_HRA 2010/4) and the UL-GEMS’ Summer Studentship whose support enabled JB to work on this project. We thank all healthcare professionals who participated in this study and especially colleagues who contribute to the development and delivery of the training and especially Mr Rory Keane (HSE Midwest Addiction Services).

References

- Allen N, Hetrick S, Simmons J, Hickie I** (2007). Early intervention for depressive disorders in young people: the opportunity and the (lack of) evidence. *The Medical Journal of Australia* **187**, S15–7.
- Berk M, Hallam K, Lucas N, Hasty M** (2007). Early intervention in bipolar disorders: opportunities and pitfalls. *The Medical Journal of Australia* **187**, S11–4.
- Biddle L, Donovan JL, Gunnell D, Sharp D** (2006). Young adults' perceptions of GPs as a help source for mental distress: a qualitative study. *British Journal of General Practice* **56**, 924–31.
- Bloom BS** (2005). Effects of continuing medical education on improving physician clinical care and patient health: A review of systematic reviews. *International Journal of Technology Assessment in Health Care* **21**, 380–5.
- Cappelli M, Gray C, Zemek R, Cloutier P, Kennedy A, Glennie E, Doucet G, Lyons JS** (2012). The HEADS-ED: a rapid mental health screening tool for pediatric patients in the emergency department. *Pediatrics* **130**, e321–7.
- Carr-Gregg M, Enderby KC, Grover SR** (2003). Risk-taking behaviour of young women in Australia: screening for health-risk behaviours. *Medical Journal of Australia* **178**, 601–4.
- Connolly D, Leahy D, Bury G, Gavin B, McNicholas F, Meagher D, O'Kelly FD, Wiehe P, Cullen W** (2012). Can general practice help address youth mental health? A retrospective cross-sectional study in Dublin's south inner city. *Early Intervention in Psychiatry* **6**, 332–40.
- Coughlan H, Tiedt L, Clarke M, Kelleher I, Tabish J, Molloy C, Harley M, Cannon M** (2014). Prevalence of DSM-IV mental disorders, deliberate self-harm and suicidal ideation in early adolescence: an Irish population-based study. *Journal of Adolescence* **37**, 1–9.
- Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M** (2008). Developing and evaluating complex interventions: the new Medical Research Council guidance. *British Medical Journal* **337**, a1655.
- Cullen W, Broderick N, Connolly D, Meagher D** (2012). What is the role of general practice in addressing youth mental health? A discussion paper. *Irish Journal of Medical Science* **181**, 189–97.

Degenhardt L, Coffey C, Romaniuk H, Swift W, Carlin JB, Hall WD, Patton GC (2013). The persistence of the association between adolescent cannabis use and common mental disorders into young adulthood. *Addiction* **108**, 124–33.

Department of Health & Children (2006). A Vision for Change: Report of the Expert Group on Mental Health Policy in Ireland. Dublin, Ireland.

Fallucco EM, Conlon MK, Gale G, Constantino JN, Glowinski AL (2012). Use of a standardized patient paradigm to enhance proficiency in risk assessment for adolescent depression and suicide. *The Journal of Adolescent Health* **51**, 66–72.

Gilbody S, Whitty P, Grimshaw J, Thomas R (2003). Educational and Organizational Interventions to Improve the Management of Depression in Primary Care A Systematic Review. *Journal of the American Medical Association* **289**, 3145–51.

Gledhill J, Kramer T, Iliffe S, Garralda ME (2003). Training general practitioners in the identification and management of adolescent depression within the consultation: a feasibility study. *Journal of Adolescence* **26**, 245–50.

Goldenring BJM, Rosen DS (2004). Getting into adolescent heads: An essential update. *Contemporary Pediatrics* **21**, 1–19.

Haller DM, Sancu L A, Patton GC, Sawyer SM (2007). Toward youth friendly services: a survey of young people in primary care. *Journal of General Internal Medicine* **22**, 775–81.

Hawton K, Saunders KEA, O'Connor RC (2012). Self-harm and suicide in adolescents. *Lancet* **379**, 2373–82.

Iliffe S, Williams G, Fernandez V, Vila M, Kramer T, Gledhill J, Miller L (2009). Treading a fine line: is diagnosing depression in young people just medicalising moodiness? *The British Journal of General Practice* **59**, 156–7.

James PD, Smyth BP, Apantaku-Olajide T (2013). Substance use and psychiatric disorders in Irish adolescents: a cross-sectional study of patients attending substance abuse treatment service. *Mental Health and Substance Use* **6**, 124–32.

Katon W, Russo J, Richardson L (2008). Anxiety and Depression Screening for Youth in a Primary Care Population. *Ambulatory Pediatrics* **8**, 182–8.

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Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry* **62**, 593–602.

Klein DA, Goldenring JM, Adelman WP (2014). HEEADSSSS 3.0: The psychosocial interview for adolescents updated for a new century fueled by media. *Contemporary Pediatrics*.

(<http://contemporarypediatrics.modernmedicine.com/contemporary-pediatrics/news/probing-scars-how-ask-essential-questions?page=full>).

Klimas J, Lally K, Murphy L, Crowley L, Anderson R, Meagher D, McCombe G, Smyth BP, Bury G, Cullen W (2014). Development and process evaluation of an educational intervention to support primary care of problem alcohol among drug users. *Drugs and Alcohol Today* **14**, 76–86.

Kramer T, Iliffe S, Bye A, Miller L, Gledhill J, Garralda ME (2013). Testing the feasibility of therapeutic identification of depression in young people in British general practice. *The Journal of Adolescent Health* **52**, 539–45.

Leahy D, Schaffalitzky E, Armstrong C, Bury G, Cussen-Murphy P, Davis R, Dooley B, Gavin B, Keane R, Keenan E, Latham L, Meagher D, McGorry P, McNicholas F, O'Connor R, O'Dea E, O'Keane V, O'Toole TP, Reilly E, Ryan P, Sancu L, Smyth BP, Cullen W (2013). Primary care and youth mental health in Ireland: qualitative study in deprived urban areas. *BMC Family Practice* **14**, 194.

Lubman D, Hides L (2007). Intervening early to reduce developmentally harmful substance use among youth populations. *The Medical Journal of Australia* **187**, S22–5.

Lynch F, Hornbrook M (2005). Cost-effectiveness of an intervention to prevent depression in at-risk teens. *Archives of General Psychiatry* **62**, 1241–8.

MacKay M, Vincenten J (2014). National Action to Address Child Intentional Injury - 2014: Europe Summary. Child Safety Alliance. Birmingham, UK.

McGorry P, Killackey E, Yung A (2007a). Early intervention in psychotic disorders: detection and treatment of the first episode and the critical early stages. *The Medical Journal of Australia* **187**, S8–10.

McGorry PD, Killackey E, Yung A (2008). Early intervention in psychosis: concepts, evidence and future directions. *World Psychiatry* **7**, 148–56.

McGorry PD, Purcell R, Hickie IB, Jorm AF (2007b). Investing in youth mental health is a best buy. *The Medical Journal of Australia* **187**, S5-7.

McMahon EM, Keeley H, Cannon M, Arensman E, Perry IJ, Clarke M, Chambers D, Corcoran P (2014). The iceberg of suicide and self-harm in Irish adolescents: a population-based study. *Social Psychiatry and Psychiatric Epidemiology*. Published online 15 June 2014. doi:10.1007/s00127-014-0907-z.

Mihalopoulos C, Harris M, Henry L, Harrigan S, McGorry P (2009). Is early intervention in psychosis cost-effective over the long term? *Schizophrenia Bulletin* **35**, 909–18.

Mihalopoulos C, McGorry PD, Carter RC (1999). Is phase-specific, community-oriented treatment of early psychosis an economically viable method of improving outcome? *Acta Psychiatrica Scandinavica* **100**, 47–55.

New South Wales Centre for the Advancement of Adolescent Health (2013). New South Wales Youth Friendly General Practice Training Toolkit. NSW Centre for the Advancement of Adolescent Health, The Children's Hospital at Westmead, Sydney.

NICE (2005). Depression in Children and Young People: Identification and Management in Primary and Secondary Care. (<http://www.nice.org.uk/guidance/cg28/resources/cg28-depression-in-children-and-young-people-full-guideline-2> [accessed 4 November 2014]).

Parker A, Hetrick S, Purcell R (2010). Psychosocial assessment of young people - refining and evaluating a youth friendly assessment interview. *Australian Family Physician* **39**, 585–8.

Patel V, Flisher AJ, Hetrick S, McGorry P (2007). Mental health of young people: a global public-health challenge. *Lancet* **369**, 1302–13.

Roberts JH, Bernard PM (2012). “Can he have the test for bipolar, doctor? His dad’s got it”: exploring the potential of general practitioners to work with children and young people presenting in primary care with common mental health problems - a clinical initiative. *Mental Health in Family Medicine* **9**, 115–23.

Sanci L, Coffey C, Patton G, Bowes G (2005). Sustainability of change with quality general practitioner education in adolescent health: a 5-year follow-up. *Medical Education* **39**, 557–60.

Sanci LA, Coffey CM, Veit FC, Carr-Gregg M, Patton GC, Day N, Bowes G (2000).

Evaluation of the effectiveness of an educational intervention for general practitioners in adolescent health care: randomised controlled trial. *British Medical Journal* **320**, 224–30.

Schaffalitzky E, Leahy D, Cullen W, Gavin B, Latham L, O'Connor R, Smyth BP, O'Dea E, Ryan S (2014). Youth mental health in deprived urban areas: a Delphi study on the role of the GP in early intervention. *Irish Journal of Medical Science*. Published online: 6 September 2014. doi:10.1007/s11845-014-1187-z.

Smits PBA, Verbeek JHAM, de Buissonjé CD (2002). Problem based learning in continuing medical education: a review of controlled evaluation studies. *British Medical Journal* **324**, 153–6.

Royal Australasian College of Physicians. Routine adolescent psychosocial health assessment – position statement. (<http://www.racp.edu.au/index.cfm?objectid=B56658DA-08B2-14E3-0EE26F1635D1314E> [accessed 4 November 2014]).

Trillingsgaard T, Trillingsgaard A, Webster-Stratton C (2014). Assessing the effectiveness of the “Incredible Years(®) parent training” to parents of young children with ADHD symptoms - a preliminary report. *Scandinavian Journal of Psychology*. Published online: 6 August 2014. doi:10.1111/sjop.12155.

United Kingdom Department of Children, Schools and Families. Early Intervention: securing good outcomes for all children and young people. (<http://www.education.gov.uk/publications/eOrderingDownload/DCSF-00349-2010.pdf> [accessed 4 November 2014]).

van Amstel LL, Lafleur DL, Blake K (2004). Raising Our HEADSS: Adolescent Psychosocial Documentation in the Emergency Department. *Academic Emergency Medicine* **11**, 648–55.

van Voorhees BW, Fogel J, Houston TK, Cooper LA, Wang N-Y, Ford DE (2005). Beliefs and attitudes associated with the intention to not accept the diagnosis of depression among young adults. *Annals of Family Medicine* **3**, 38–46.

Wilson H, Bostock N, Phillip N, Shannon P, Payne D, Kennedy A (2012). Opportunistic adolescent health screening of surgical inpatients. *Archives of Disease in Childhood* **97**, 919–21.

Box 1: *Learning objectives for the session*

1. Understanding the role of primary care in mental health and substance use among adolescents and young adults.
2. Appreciation of the value of early intervention in the area of youth mental health.
3. Gaining understanding of the barriers to accessing health services in the community and how health care professionals can become more ‘youth friendly’.
4. Developing competency of a brief intervention for engaging with young people and focusing on the issues that are important in relation to their mental health.

Box 2 *PATIO domains*

P	Prevention/promotion: It is important that youths and adolescents be aware that emotional and social problems are something that general practitioners can help them with. In making adolescents aware of this capacity, PCPs may be able to increase adolescent presentation at clinics, and hence, detection and diagnosis.
A	Assessment: Improvements in this domain can be achieved with the use of proper screening tools (e.g., HEEADSSS), knowledge of diagnostic criteria, and knowledge of what represents normal and abnormal behaviour in this population.
T	Treatment: Knowledge of treatment options including psychological, pharmacological, and referral to specialist treatment, can improve practitioner confidence in treating youth mental health.
I	Interfacing and interaction: Collaboration and communication with other healthcare professionals in primary and secondary care is important for effective treatment of youth mental health.
O	Ongoing care: This domain refers to the importance of monitoring treatment outcomes and establishing plans for when treatment fails.

Note. PATIO represents a set of five domains in which general practitioners can have an effect on the treatment of youth mental health issues [34].

Box 3 *HEEADSSS headings*

Home: Assesses an adolescent's basic living situation and relationships with family members.

Education/employment: Assesses an adolescent's educational goals and performance. Employment status is assessed as a potential stressor (e.g., working too many hours).

Eating: Assesses adolescent eating behaviour and body image, which are important with respect to self-esteem issues and possible eating disorders.

Activities: Assesses social activities with friends and family. Adolescents may be asked about participation in sports or leisure clubs, possible sources of stress and/or social support.

Drugs: Screens for tobacco, alcohol and illicit drug use. The former two have been identified as predictors of presentation with psychosocial issues in Irish primary care settings [4]

Sexuality: Assesses sexual activity, romantic relationships, and patient practice and understanding of safe sexual activity.

Suicide: Assesses adolescents for depressive symptoms, self-harm, and suicidality.

Safety-exposure: Identifies dangerous behaviour or exposure of the adolescent to dangerous situations. The former includes impulsive or reckless behaviour that may result in injury. The latter deals with exposure to violence including assault, physical and sexual abuse, and rape.

Table 1

Self-reported prior training and background in the areas of youth mental health

<i>Variable</i>	<i>Yes n (%)</i>	<i>No n (%)</i>	<i>N</i>
<i>Professional background</i>			
Are you involved in the direct provision of care to young people?	15 (71%)	6 (29%)	21
Have you completed previous training in youth mental health?	10 (45%)	12 (55%)	22
Have you completed previous training in youth substance use?	10 (45%)	12 (55%)	22
Would you be interested in pursuing a higher qualification in this area?	16 (76%)	5 (24%)	21

Table 2

Self-reported ratings of knowledge gained in the area of youth mental health

<i>Variable</i>	<i>Strongly disagree/ disagree n (%)</i>	<i>Neither n (%)</i>	<i>Strongly agree/ agree n (%)</i>	<i>M (SD)</i>	<i>N</i>
<i>As a result of the session, I am better able to</i>					
State the importance of early intervention in youth mental health	0 (0%)	0 (0%)	23 (100%)	4.52 (0.51)	23
State how mental health problems present in this age group	0 (0%)	2 (9%)	21 (91%)	4.22 (0.60)	23
Understand why primary care is important in youth mental health	0 (0%)	0 (0%)	23 (100%)	4.52 (0.51)	23
Understand the role primary care can take in youth mental health identification and treatment	0 (0%)	0 (0%)	23 (100%)	4.43 (0.51)	23
Raise the topic of seeing a young person alone when a parent is present	0 (0%)	0 (0%)	23 (100%)	4.52 (0.51)	23
Confidently discuss mental health and addiction in a youth-friendly manner with a patient	0 (0%)	1 (5%)	21 (95%)	4.23 (0.53)	22
Raise issues such as harmful behaviours and mental health symptoms with young people	0 (0%)	0 (0%)	22 (100%)	4.32 (0.48)	22
Understand what 'HEADSS' stands for	5 (22%)	4 (17%)	14 (61%)	3.74 (1.18)	23
Conduct a 'HEADSS' evaluation with a young person	6 (26%)	3 (13%)	14 (61%)	3.65 (1.19)	23
Offer the appropriate (local) referral pathway for a young person with mental health/substance abuse problems	0 (0%)	4 (17%)	19 (83%)	4.09 (0.67)	23
Offer ongoing support of a young person receiving treatment for mental health/substance abuse	0 (0%)	2 (9%)	21 (91%)	4.26 (0.62)	23

Table 3

Self-reported ratings of the usefulness of the different components of the workshop

<i>Variable</i>	<i>Strongly disagree/disagree n (%)</i>	<i>Neither</i>	<i>Strongly agree/ agree n (%)</i>	<i>M (SD)</i>	<i>N</i>
<i>The following were useful in helping me achieve these outcomes</i>					
Presentation	0 (0%)	1 (5%)	21 (95%)	4.36 (0.58)	22
Case studies / small group discussion	0 (0%)	0 (0%)	24 (100%)	4.46 (0.51)	24
Video demonstration / small group discussion	0 (0%)	0 (0%)	23 (100%)	4.39 (0.50)	23
Q+A session with clinical experts in the area	0 (0%)	1 (4%)	23 (96%)	4.42 (0.58)	24
Interaction with peers	0 (0%)	1 (4%)	23 (96%)	4.42 (0.58)	24
Supplementary information pack	0 (0%)	0 (0%)	24 (100%)	4.38 (0.49)	24

Table 4

Open question responses

How did you find each aspect of the session?		
	What was good about it?	How can it be improved?
Presentation	Brief/concise (6) Clear (6) Informative (3) Well-constructed (3) Very good/excellent (2) Relevant to practice (1)	More clarity (1) More time (1)
Case studies/small group discussion	Good/Useful (4) Sharing of knowledge and ideas (3) Access to expert opinion (3) Interactive/Dynamic (3) Discussion and feedback (2) Clinical relevance (2) Open/Thought provoking (2)	More time (5) More suitable venue (3) Smaller groups (1) More answers (1)
Video demonstration/small group discussion	Good/excellent (6) Benefit of video medium (3) Thought-provoking (3) Helpful/useful (2) Interactive (1) Clinical relevance (1)	Time management (1) More discussion (1)
Q+A session with clinical experts in the area	Access to expert guidance (5) Good/excellent (4) Information provision (2) Useful (2)	No comments
Interaction with peers	Good/great/excellent (7) Informative, Knowledge sharing (4) Interaction with other professionals/disciplines (3) Useful/helpful (2)	More time (2) Provision of a contact list (1) Provision of similar sessions in other locations (1)
Supplementary information pack	Informative/useful resource (6) Good/great (5) Haven't read it yet (3) Comprehensive/well-structured (2)	Request for information specific to particular locations in Ireland (1)
In your practice, what would help you better address youth mental health and substance abuse?		
Information on available services for patient referral (4) More/Improved Resources and greater accessibility to same (3) More exploration of young people who don't get as far as primary care services (1) Time (1) Primary care counsellor (1)		
How could we make this session more useful?		

Larger venue (5)

Participants used this space to request further interventions of this type (3)

More time (1)