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## Research Paper

## Twelve-month outcomes of MAKINGtheLINK: A cluster randomized controlled trial of a school-based program to facilitate help-seeking for substance use and mental health problems

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## ABSTRACT

**Background:** Young people experiencing mental health problems are often reluctant to seek help, particularly from professionals (i.e., doctors or mental health workers). MAKINGtheLINK is a school-based intervention that aims to help adolescents overcome barriers to seeking professional help for mental health and substance use problems.

**Methods:** A cluster randomised controlled trial was conducted to evaluate the 12-month outcomes of MAKINGtheLINK among 2447 participants (Mean age=14.9 years, SD=0.5 years, 50% male). Randomisation resulted in 1130 students from 11 schools allocated to receive the intervention, and 1317 students from 10 schools allocated to the wait-list control group. After the baseline assessment, follow-ups were conducted at 6-weeks ( $n = 2045$ ), 6-months ( $n = 1874$ ), and 12-months ( $n = 1827$ ). The primary outcome measure was help-seeking behaviour, from both formal (e.g., health professionals) and informal (e.g., friends, family members) sources. The trial was registered with the Australia and New Zealand Clinical Trials Register (ANZCTR) on the 27th of February 2013 (registration number ACTRN12613000235707)

**Findings:** The intervention was not associated with overall help-seeking at the 12-month follow-up ( $p = 0.99$ , odds ratio [OR]=1.00, 95% CI for OR = 0.70–1.42), or help-seeking for depression ( $p = 0.28$ , OR = 1.21, 95%CI=0.86–1.69), stress and anxiety ( $p = 0.73$ , OR = 1.04, 95%CI = 0.74–1.47), or alcohol/other drugs ( $p = 0.84$ , OR=1.12, CI=0.37–3.37). However, the intervention was associated with increased help-seeking from formal sources (compared to informal sources) both overall ( $p = 0.005$ , OR = 1.81, 95%CI = 1.19–2.75), as well as for depression ( $p = 0.01$ , OR=2.09, 95%CI=1.19–3.67), and stress and anxiety ( $p < 0.006$ , OR = 1.72, 95%CI = 1.17–2.54).

**Interpretation:** Rates of help-seeking remained unchanged following the intervention. However, MAKINGtheLINK effectively improved the quality of adolescent help-seeking behaviour by increasing help-seeking from formal sources. As prompt treatment is essential in reducing the long-term impact of early onset mental health problems, MAKINGtheLINK has the potential to make a significant contribution to existing early intervention and prevention efforts.

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## Research in context

### *Evidence before this study*

Evidence considered before undertaking this study was obtained from research documenting the prevalence of mental health and substance use during adolescence, and the low rates of professional treatment sought by young people experiencing mental health problems. Also examined were studies that explored young people's help-seeking preferences and perceived barriers to seeking professional help. A range of previous school-based early intervention and health promotion activities were also reviewed during the development of the MAKINGtheLINK program. Research examining the prevalence and onset of mental health problems during adolescence, rates of help-seeking and adolescent help-seeking preferences, and the effectiveness of previous interventions was obtained via searches of relevant databases (e.g., pubmed, google scholar), government reports, as well as the reference lists of key publications covering these topics. Given the broad range of evidence reviewed, we are unable to provide an estimate of the overall risk of bias, although only published studies and official reports were included. A meta-analysis of the evidence is also not feasible given the heterogeneity of the research evaluated, as well as the limited number of studies available on key areas of interest (e.g., adolescents' help-seeking preferences).

### *Added value of this study*

To our knowledge, this study provides the first evidence of a school-based intervention that increases actual help-seeking behaviour (as opposed to simply intentions) for mental health problems during adolescence. Increasing help-seeking from professional sources during adolescence is likely to aid the early identification and treatment of mental health problems, and improve long-term mental health outcomes as a result.

### *Implications of all the available evidence*

These findings highlight the value of providing skills-based wellbeing programs to young people within the school setting, and indicate that MAKINGtheLINK makes a significant contribution to existing early intervention and prevention efforts. Given the critical need to ensure adolescents refer themselves to get support, it is ideally placed to be a core part of a service stream promoting early intervention for young people. Specifically, it has the potential to increase engagement with primary care providers as well the youth-specific mental health initiatives that are developing internationally

many adolescents do not consider GPs to be an appropriate help source for mental health problems [9,10]. However, informal sources of support have been found to often demonstrate poor mental health literacy, including a limited ability to recognise specific mental disorders, poor knowledge of how to seek mental health information, and attitudes and beliefs that do not facilitate professional help-seeking [11,12]. As such, they may lack the ability to offer appropriate advice and support to their peers. Improving the mental health literacy skills of adolescents is therefore key to ensuring that they know when and how to assist their peers.

MAKINGtheLINK [13] is a school-based intervention that aims to address these issues by improving the mental health literacy of young people and helping them overcome barriers to seeking professional help. This skills-based program focuses on how adolescents can help their peers who are experiencing mental health and/or substance use problems. The program identifies young people as being ideally positioned to play a gate-keeping role, whereby they can identify issues amongst their friends and intervene to ensure that professional support is accessed when needed. The approach taken by MAKINGtheLINK addresses a number of critical gaps in existing school-based early intervention and health promotion activities, by focussing on exploring barriers to seeking help, teaching students the skills to overcome these barriers, and encouraging professional help-seeking. In short, the MAKINGtheLINK program is novel in its emphasis on teaching practical steps for peers to become effective gate-keepers. However, while the focus on the program is primarily about supporting peers, improving participants' mental health literacy and help-seeking skills is also a potentially effective means of increasing participants' help-seeking for their own problems. Indeed, teaching individuals how to support their friends or colleagues has been found to significantly improve the mental health literacy of participants [14], suggesting that teaching students how to help their peers will not only improve gate-keeping skills, but will support their own mental health and help-seeking attitudes. As such, as well as improving peer gate-keeping skills, a primary aim of MAKINGtheLINK is to also increase actual help-seeking behaviour amongst adolescents themselves.

Following two successful pilot studies in which the MAKINGtheLINK program was found to increase students' confidence and awareness of how to seek help for cannabis and mental health problems [15] and alcohol and other drug misuse [16] a cluster randomised controlled trial of the school-based program was conducted [13]. The primary hypothesis to be tested was that participation in the intervention would lead to increased help-seeking behaviour for alcohol and mental health issues at 12-months post-intervention. Secondary hypotheses were that participation in the intervention would be associated with the following changes immediately after, 6 months, and 12-months post-intervention: (i) increased likelihood of seeking professional help; (ii) increased confidence to assist a peer to seek professional help; and (iii) a reduction in psychological barriers to help-seeking.

## 2. Method

### 2.1. Study design

The study was a clustered randomised controlled trial (RCT) with schools as clusters and individual students as participants (see [13] for further information). The study adheres to CONSORT guidelines.

### 2.2. Sample

Eligible participants were Year 9 students (aged 14–15 years) from Government, Catholic, or Independent schools in Victoria, Australia. Emails providing information about the program opportunity and inviting expressions of interest from schools were sent to all Catholic, Independent, and State schools within 50 km of Melbourne's central business district with a Year 9 cohort of between 40 and 250 students.

## 1. Introduction

Early intervention approaches are crucial in ameliorating the long-term negative outcomes of mental illness [1]. Given adolescence is a high-risk time for the development of mental health and substance use disorders [2], it is critical that young people who are experiencing mental health problems seek help and support promptly. In recent years, this has been acknowledged by significant investments in growing youth mental health services worldwide, such as *headspace* in Australia, *headstrong* in Ireland, and *youthspace* in England, among others [3]. While recent evidence suggests that rates of help-seeking amongst adolescents may be increasing [4], a range of barriers have been identified that influence young peoples' help-seeking behaviour [5]. Furthermore, studies have demonstrated that adolescents have a preference for informal sources of support, including peers, over formal sources of support, such as doctors or mental health professionals [6–8]. Indeed, there is evidence that

### 2.3. Randomisation and time-line

Twenty-two Victorian secondary schools (14 Government, 5 Catholic, and 3 Independent) were recruited and randomly allocated to either receive the intervention or form a waitlist control group. Randomisation was in blocks of random size 2 or 4 and was stratified by the school's Index of Socio-Educational Advantage (ICSEA) score, which has a mean of 1000 and SD of 100, with two strata defined as <1000 ('disadvantaged') and 1000+ ('advantaged') [17]. The pre-generated randomization list was generated by an off-site statistician who assigned the next school to intervention or waitlist control group according to the randomization list. One school dropped out before the study commenced. Participants completed a baseline survey followed by three follow-up surveys; conducted at 6-weeks, 6-months, and 12-months post-intervention and at equivalent times for participants in control schools. Recruitment commenced in August 2013 and the trial was completed in late 2016.

#### 2.3.1. Allocation concealment

Schools were unaware of their allocation until after they provided consent and participated in the baseline data collection. Participating students and their parents were unaware of whether their school had been allocated to the intervention or control group until after the first data collection point. No blinding was involved. Random allocations were provided to study staff by an off-site statistician when a school had agreed to participate.

### 2.4. Sample size calculation

Sample size calculations accounting for cluster randomisation were estimated using Stata 12. Background information was available from a controlled pre-post pilot study conducted in three regional high schools that were matched on socioeconomic characteristics [18]. At baseline, only 1 (0.6%) of the 171 students reported visiting a GP. At 12-week follow-up, 12 students (7.0%) indicated receiving a consultation. Assuming the pre-test consultation rate represents the control group post-measure for the proposed trial, we estimated the effect size in schools to be 6.4% (pooled SD 18.8%). Assuming 80% successful consent and randomisation, followed by a 25% attrition rate between baseline and follow-up, the number of students in the analysis would be 60% of a school's Year 9 level. We anticipated that this would lead to an approximate average cluster size for analysis of 51 students per school.

For the proposed project, the intra-class correlation (ICC) was unknown, although a comparable school-based cluster randomised trial conducted by Jorm and colleagues reported an ICC of 0.05 [19]. Setting ICC at 0.05, power  $(1-\beta)$  at 80%, and a two-sided level of significance at 5% ( $\alpha=0.05$ ), the required number of individuals per treatment arm was 476 students, corresponding to a need for 10 schools per arm. To allow for 25% drop-out by the 12 month follow-up assessment the recruitment target was set at 1360 students.

### 2.5. Intervention

The intervention draws upon two models of behaviour change: the Information-Motivation-Behavioural Skills Model and the Theory of Planned Behaviour. Both models are well-validated health behaviour change frameworks that have been used extensively in school settings [20] and in experimental health intervention trials [21]. The classroom activities provided students with information about how to seek help and from whom, investigated any psychological and social barriers to help-seeking, investigated risky behaviours associated with alcohol use and mental health problems, and provided opportunities and videos for skill rehearsal, which according to our composite model, would lead to increased help-seeking behaviour.

The intervention included five interactive classroom activities run over two school periods, plus a booster session one month later to reiterate the key messages of the intervention and help students gain practical experience in applying the skills they had been taught. Activities covered: (1) recognising when a friend needs help (using vignettes depicting depression and risky drinking); (2) identifying types of helpers available as well as obligations related to professional confidentiality; (3) understanding myths and facts about substance use and mental health; (4) identifying and overcoming barriers to professional help-seeking; (5) how to assist a friend to access professional help; and (6) how to access reliable sources of help.

### 2.6. Measures

In addition to demographic information that was gathered at baseline (age, gender, postcode, language spoken at home, living arrangements, parental occupation, country of birth), the following measures were administered at all time-points: actual help-seeking behaviour (the primary outcome measure), as well as likelihood of seeking help, confidence to help a peer seek professional help, and psychological barriers to help-seeking (the secondary outcome measures). Likelihood of seeking help, confidence to help a peer seek help, and barriers to seeking help were assessed following the presentation of two separate vignettes describing a peer experiencing symptoms of depression and alcohol misuse, respectively.

#### 2.6.1. Help-seeking

Help seeking was assessed with a simplified version of the Actual Help Seeking Questionnaire (AHSQ), [22] and adapted to include substance use and mental health. Participants were asked if they had ever sought help for stress or anxiety, depression, or alcohol and other drug (AOD) problems and, if so, the timeframe within which they sought help: (i) in the past 6 weeks; (ii) in the past 6 months; (iii) in the past 12 months; or (iv) more than 12 months ago. They were then asked who they sought help from: (i) parents; (ii) friends; (iii) siblings; (iv) other family members; (v) teachers; or (vi) health professionals, e.g., a doctor, counselor, nurse, or psychologist. Formal help sources included health professionals (e.g., a doctor counselor, nurse, or psychologist), while informal sources included friends and family members (peers, siblings, mother/father, or other family).

#### 2.6.2. Likelihood of seeking professional help

Likelihood of seeking professional help for a similar problem was assessed via the question "If YOU had a problem like [vignette character], how likely is it that you would seek professional help for yourself?" which was measured on a 5-point Likert scale (1= "very unlikely" to 5= "very likely").

#### 2.6.3. Confidence to help a peer seek professional help

Confidence to help a peer seek professional help was assessed via the question "Overall, how confident would you feel to help [vignette character] seek professional help?" which was measured on a 4-point Likert scale (1= "very confident" to 4 = "not confident at all").

#### 2.6.4. Barriers

Psychological barriers to seeking professional help were measured using a brief version of the Barriers to Adolescents Seeking Help questionnaire, (BASH-B [23]) which comprises 11 barriers to seeking help rated on a 6-point Likert scale (1= "strongly agree" to 6= "strongly disagree").

#### 2.6.5. Mental health symptoms

Stress, anxiety and depression symptoms were measured by the 21-item version of the Depression Anxiety Stress Scale (DASS-21) [24]. The DASS-21 consists of a series of statements that assess depression, anxiety and stress symptoms experienced over the past week. Each

statement is rated on a 4-point scale (from 0 = “Not at all”, to 3 = “Very much, or most of the time”). The DASS has good discriminant and concurrent validity, and convergent reliability with other measures of depression and anxiety (e.g., [25,24]), and has been used in previous studies with adolescent samples [26].

#### 2.6.6. Alcohol use

Alcohol use was measured by adapting questions from the Australian Secondary School Students Alcohol and Drug (ASSAD) Survey [27]. Participants self-reported how many drinks they had consumed in their lifetime, over the past year, and over the past week.

#### 2.6.7. Statistical analysis

All analyses were conducted in accordance with the study protocol [13] unless otherwise specified. All analyses were conducted on an intention-to-treat basis in comparing students, clustered by school, according to the group, intervention or control, to which they were randomised. Analyses were conducted using Stata/MP 14.2 (College Station, TX). Logistic regression analysis was undertaken for help-seeking behaviour at 12 months (the primary outcome), both overall and for each of depression, stress and/or anxiety, and alcohol and/or drug problems. Adjustment for the relevant help-seeking behaviour response at baseline was included in the model. Baseline characteristics were compared between participants with and without missing data at 12 months. Characteristics exhibiting discrepancy were subsequently adjusted for in analyses of study outcomes; these analyses thereby made a ‘missing at random’ assumption that was conditional on the adjusted-for characteristics. This complete case approach with adjustment for factors associated with missingness, and exclusion of participants without 12-month measures, is equivalent to a multiple imputation approach including all participants if the same factors are involved and under the assumption that the missingness depends on baseline covariates and, given these, not on the outcome [28].

Variables determined a priori to be adjusted for were gender, depression and anxiety scores, and reported alcohol problems [13]. Univariable analysis was undertaken and variables found to be unbalanced between the control and treated groups were also included in a multivariable version of the logistic regression model [13]. Logistic regression models were also used to compare, for those students who sought help, whether they sought help from formal help sources (a binary outcome with formal and informal help sources as the two categories). Although not specified in the study protocol, sensitivity analysis was also conducted in order to assess the impact of missing outcomes, and was undertaken for a ‘best case scenario’ where all with missing outcome data were considered to have sought help and a ‘worst case scenario’ where all with missing outcome data were considered not to have sought help.

#### 2.6.8. Data statement

Due to ethics agreements associated with the trial, participant data is not available to external sources.

### 3. Results

The trial commenced in mid-2013 and concluded mid-2016. In total, 2447 year-nine students (mean age 14.9, SD=0.5 years; 50% male) participated at baseline from 21 schools, with 1130 (46%; 10 of 21 schools) randomised to the intervention. An updated CONSORT participation flow diagram that was published in a previous paper [13] has been included in the current paper (Fig. 1). Table 1 presents the school and student characteristics of the control and intervention groups. Groups were similar, apart from English as the primary language spoken at home.

Of those who completed the baseline survey, 2045 (83.6%) completed the 6-week follow-up survey, 1874 (76.6%) completed the 6-month

follow-up survey, and 1827 (72.4%) completed the 12-month follow-up survey. English was the most common primary language spoken at home (84%), followed by Vietnamese (3%) and Arabic (2%). At baseline, 432 participants (17.7%) reported ever having sought help for depression, 823 participants (33.6%) reported having sought help for stress and anxiety, and 70 participants (2.9%) reported having sought help for alcohol or drug problems.

The mean number of participants per school was 158 (range 40–250). Participation per class averaged 78.2% at the baseline assessment, 69.6% at the 6-week follow-up, 66.8% at the 6-month follow-up, and 62.2% at the 12-month follow-up. The intervention was delivered as planned in all schools. The majority of participants completed the survey online, however hard copy versions of the questionnaire were used when students did not have access to a computer or the internet.

#### 3.1. Help-seeking behaviour at 12-month follow-up

Of the 1827 participants who completed the baseline and 12-month follow-up surveys, 514 reported seeking any help, 238 reported seeking help for depression, 484 reported seeking help for stress and anxiety, and 31 reported seeking help for alcohol or drug problems during the 12-month follow-up period. There was no significant relationship between intervention and help-seeking in the 12-month follow-up period for overall help-seeking, or for help-seeking for depression, stress and anxiety, or alcohol or drug problems (Table 2 presents unadjusted odds ratios for help-seeking over the past 12 months). Multivariable analyses controlling for sex, depression, anxiety, and stress scores, language spoken at home, alcohol use and history of help-seeking were also conducted, with similar findings to the univariable analyses.

Further analyses were conducted in order to compare the effect of the intervention on rates of formal help-seeking, among students who had sought help in the 12-month period following the baseline assessment (students who had not sought help were omitted from these analyses). The intervention was associated with increased odds of formal help-seeking (versus informal help-seeking) overall, and for depression and stress and anxiety (Table 3). Multivariable analysis controlling for sex, depression, anxiety, and stress scores, language spoken at home, alcohol use and history of help-seeking gave similar results. Multivariate analysis could not be undertaken for formal help-seeking for alcohol or drug problems due to the small numbers.

#### 3.2. Likelihood of seeking professional help

For depression and across all time points, approximately 35–45% of participants said they would be likely (‘likely’ or ‘very likely’) to seek professional help if they were to experience problems similar to those described in the vignette, while approximately 22–30% of participants would be unlikely (‘unlikely’ or ‘very unlikely’) and 30–35% were not sure. There was little change in intention to seek professional help for depression between baseline and the 6-week, 6-month, or 12-month assessments, for both the intervention and control groups. Hence the change from baseline to the follow-up assessments in odds of responding higher on the scale (at any dichotomization) was not significantly different between the two groups (OR at 6 weeks=1.27, 95% CI)=0.93–1.71,  $p = 0.13$ ; OR at 6 months=1.25, 95% CI=0.90–1.74  $p = 0.18$ ; OR at 12 months=1.20, 95% CI=0.92–1.56,  $p = 0.18$ ).

For alcohol misuse and across all time points, approximately 40–47% of participants said they would be likely to seek professional help if they were to experience problems similar to those described in the vignette, while approximately 18–24% said they would be unlikely and 31–37% were not sure. Again, there was no evidence of change in intention to seek professional help for alcohol misuse between baseline and the 6-week, 6-month, or 12-month assessments, for either the intervention or control groups (OR comparing

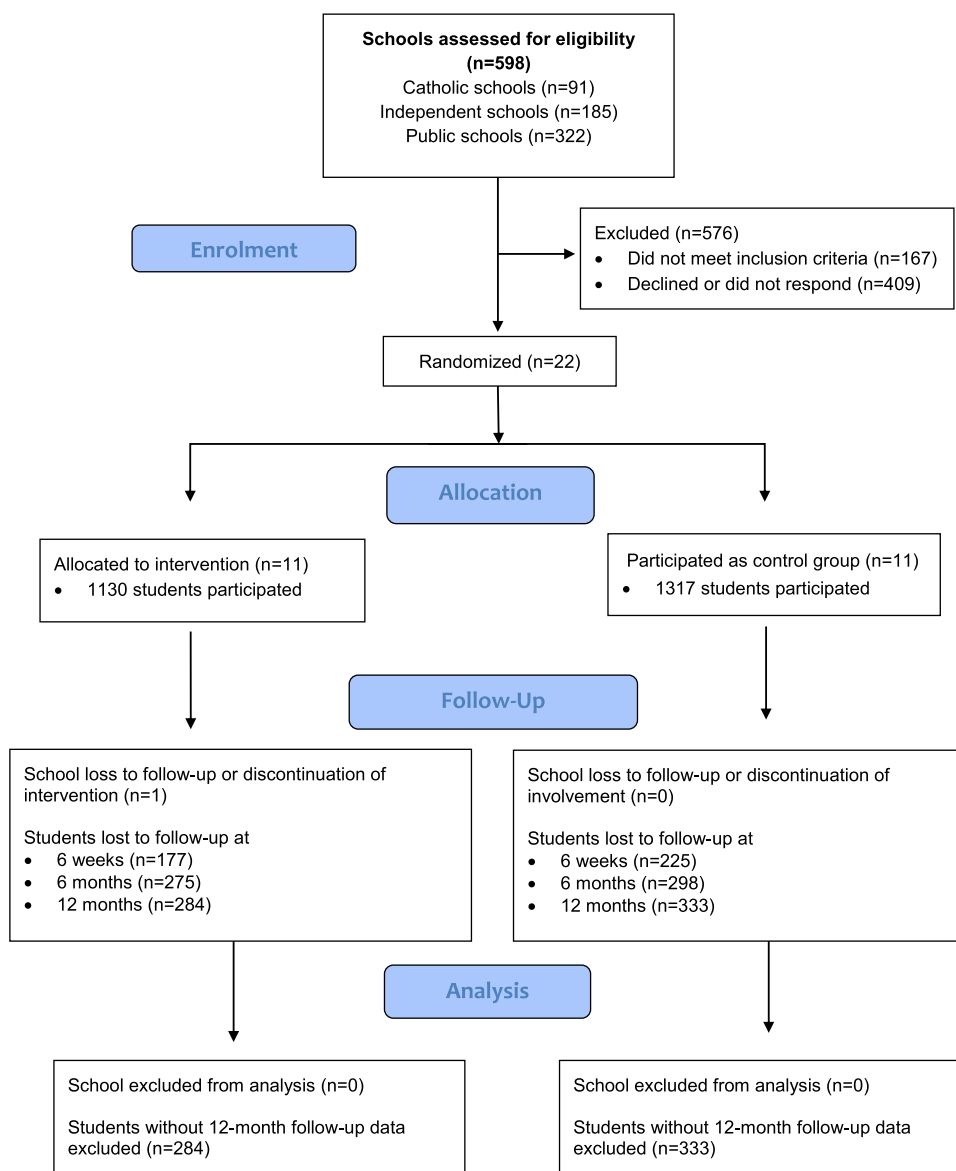


Fig. 1. CONSORT flow diagram of progress through the phases of the MAKINGtheLINK trial.

change from baseline between intervention and control groups at 6 weeks=1.19, CI=0.89–1.8,  $p = 0.24$ ; OR at 6 months=1.16, CI=0.87–1.54  $p = 0.32$ ; OR at 12 months=1.17, CI=0.89–1.54,  $p = 0.27$ ).

### 3.3. Confidence to assist a peer to seek professional help

At all four time points, approximately 50–75% of participants reported that they were confident ('confident' or 'very confident') that they could help a peer seek professional help for depression, with less than 10% reporting that they were not confident. The intervention group demonstrated a greater change (increase) in confidence from baseline at 6 weeks and 6 months, compared to the control group. Specifically, the change from baseline to 6 weeks in odds of responding higher on the scale (more confident at any dichotomization) was 1.71 times greater in the intervention group compared to control (CI=1.37–2.13,  $p < 0.001$ ), and to 6 months was 1.45 times greater in the intervention group (CI=1.11–1.90,  $p = 0.006$ ). There was a trend towards greater change (increase) in confidence at 12 months, however this did not reach significance (OR=1.44, CI=1.01–2.17,  $p = 0.05$ ).

Participants were slightly less confident that they could help a peer seek professional help for alcohol misuse, with approximately 43–70% reporting that they were confident and less than 10% reporting that they were not confident. The intervention group demonstrated a greater increase in confidence from baseline at 6 weeks, compared to the control group (OR=1.71, CI=1.37–2.13,  $p < 0.001$ ). This effect did not appear to persist at the other time points (OR at 6 months=1.12, CI=0.87–1.43,  $p = 0.37$ ; OR at 12 months=1.27, CI=0.93–1.73,  $p = 0.14$ ).

### 3.4. Psychological barriers to help-seeking

For both depression and alcohol misuse, the mean response to items on the BASH-B at all four time points was between 3 ('somewhat disagree') and 2 ('somewhat agree'), indicating that participants did not strongly endorse (or reject) the 11 barriers identified in the questionnaire. The change in scores from baseline was not significantly different between groups at 6 weeks, 6 months, or 12 months, for either problem type (Table 4).

**Table 1**  
School and student characteristics of the control and intervention groups.

Level	Control	Intervention
<b>School characteristics</b>	11	10
Government	7	6
Catholic	2	3
Independent	2	1
Boys only	1	2
Girls only	2	2
Mixed sex	8	6
ICSEA, mean (SD)	1034 (81)	1024 (55)
<b>Student characteristics</b>		
Number of students	1317	1130
Age (years), mean (SD)	14.8 (0.4)	15.0 (0.5)
Sex (Female)	673 (51.2%)	558 (49.5%)
English as main language spoken at home	1038 (79.7%)	1007 (89.2%)
Depression score, median (IQR)	1.0 (0.0, 5.0)	2.0 (0.0, 6.0)
Anxiety score, median (IQR)	1.0 (0.0, 4.0)	2.0 (0.0, 4.5)
Stress score, median (IQR)	2.0 (0.0, 6.0)	2.0 (0.0, 7.0)
Previously sought help – any	601 (47.2%)	531 (48.1%)
Previously sought help – depression	214 (16.9%)	218 (19.9%)
Previously sought help – stress or anxiety	426 (33.6%)	397 (36.1%)
Previously sought help – alcohol and/or drug	36 (2.9%)	34 (3.1%)
Alcohol consumption in student's lifetime		
None	799 (64.9%)	612 (55.9%)
Once or twice	197 (16.0%)	212 (19.4%)
3–5 times	106 (8.6%)	109 (10.0%)
6–9 times	60 (4.9%)	67 (6.1%)
10–19 times	28 (2.3%)	48 (4.4%)
20–39 times	21 (1.7%)	20 (1.8%)
40+ times	21 (1.7%)	27 (2.5%)

### 3.5. Missing analysis

Analysis of baseline measures for participants with missing data by their intervention status showed that the intervention group had higher proportion of missing data among those for whom English was the first language, those who reported previous help-seeking behaviour for stress and depression, and those who reported alcohol use in their lifetime (see Supplementary material Table 1). Analysis of a best case scenario where all those with missing data would have sought help resulted in an OR of 0.94 (95% CI: 0.67–1.33,  $p = 0.73$ ) and for a worst case scenario an OR of 1.02 (95% CI: 0.71–1.47,  $p = 0.90$ ).

## 4. Discussion

This study sought to examine the efficacy of the MAKINGtheLINK intervention in promoting help-seeking for depression and alcohol misuse. The primary outcome measure was actual help-seeking behaviour at 12 months post-intervention and no difference in overall help-seeking

was observed between intervention and control participants at this follow-up. However, while the level of help-seeking did not change, there was a significant difference in the quality of help-seeking sought among participants who received the intervention. Specifically, in the intervention arm there was an increase in overall help-seeking from formal help sources compared to informal help sources, with an increase in formal help-seeking evident for depression, and for stress and anxiety. In terms of secondary outcomes, the intervention did not impact participants' self-reported likelihood of seeking help for similar problems to those described in the vignettes, or their perceived barriers to seeking professional help. However, the intervention was associated with a significant increase in confidence to help a peer seek professional help for both depression and alcohol misuse at the 6-week follow-up. This increase was maintained at the 6-month follow-up for depression, but not for alcohol misuse.

Greater help-seeking from formal help sources among intervention participants suggests that MAKINGtheLINK improves the quality of help-seeking among adolescents experiencing mental health problems. As noted, past research has found that informal help sources may lack the knowledge and ability to provide effective support to young people, highlighting a need to direct adolescents away from seeking help from peers and untrained adults and towards trained professionals. However, in the context of these findings, it is somewhat surprising that the intervention was not associated with an increased perceived likelihood of seeking help, or with a reduction in perceived barriers to help-seeking. Potentially, the problems described in the vignettes may not have reflected the specific issues that young people in the sample sought formal help for, leading to a discrepancy between their attitudes towards seeking help and their actual behaviours. Another possibility is that their experiences with seeking help were negative, as previous research examining this cohort found that even the help sources that scored highest on measures of helpfulness (teachers and health professionals) were generally considered unhelpful [29]. Alternatively, when faced with a hypothetical scenario, young people may react differently compared to when they are actually in need of help. In this regard, it is worth noting that this cohort identified self-reliance as the strongest barrier to help-seeking [29], for both problem types, suggesting that adolescents are likely to resist outside help if they believe they can solve their problems on their own. As such, they may be confident that they can help others seek professional help, and seek help for their own real-world issues when needed, but nonetheless resist the idea of relying on others when presented with a scenario they are not personally experiencing.

While there was no difference in overall help-seeking between the intervention and control groups, it is important to note that one-third of all participants in both arms reported seeking help during the 12-month follow-up period. Arguably, this is a relatively high rate of help-seeking, given that we recruited a community sample and the rate of past-year mental health problems among Australian

**Table 2**  
Help-seeking from all sources by participants in the control and intervention groups.

	Intervention	Control	Odds ratio Intervention versus control	95% CI	$p$	ICC
Overall						
Sought help	243 (29.3%)	271 (28.5%)	1.00	0.70–1.42	0.99	0.02
Did not seek help	586 (70.7%)	680 (71.5%)				
Depression						
Sought help	120 (14.5%)	118 (12.4%)	1.21	0.86–1.69	0.28	0.001
Did not seek help	709 (85.5%)	834 (87.6%)				
Stress and anxiety						
Sought help	232 (28.0%)	252 (26.4%)	1.04	0.74–1.47	0.73	0.002
Did not seek help	597 (72.0%)	703 (73.6%)				
Alcohol or drugs						
Sought help	15 (1.8%)	16 (1.7%)	1.12	0.37–3.37	0.84	0.001
Did not seek help	814 (98.2%)	935 (98.3%)				

**Table 3**

Of those students who sought help, comparison between intervention and control in formal help-seeking; odds of formal versus informal help-seeking compared between study groups.

	Intervention	Control	Odds ratio intervention versus control	95% CI	<i>p</i>
<b>Overall</b>					
Formal	109 (44.7%)	83 (30.9%)	1.81	1.19–2.75	0.005
Informal	135 (55.3%)	186 (69.1%)			
<b>Depression</b>					
Formal	64 (53.3%)	41 (35.3%)	2.09	1.19–3.67	0.01
Informal	56 (46.7%)	75 (64.7%)			
<b>Stress and anxiety</b>					
Formal	93 (40.1%)	70.0 (28.0%)	1.72	1.17–2.54	0.006
Informal	139 (59.9%)	180 (72.0%)			

**Table 4**

Perceived barriers to seeking help for depression and alcohol misuse.

Time	<i>N</i>	Control (M, SD)	<i>N</i>	Intervention (M, SD)	Estimated difference in mean change from baseline, intervention -control	95% CI	<i>P</i>
<b>Depression</b>							
Baseline	1298	2.35 ± 0.58	1118	2.31 ± 0.58			
6 weeks	1194	2.36 ± 0.59	1006	2.27 ± 0.63	−0.04	−0.11 to 0.04	0.33
6 months	1110	2.32 ± 0.59	922	2.27 ± 0.60	−0.001	−0.05 to 0.05	0.98
12 months	1065	2.32 ± 0.59	931	2.23 ± 0.61	−0.04	−0.11 to 0.03	0.27
<b>Alcohol misuse</b>							
Baseline	1274	2.31 ± 0.62	1102	2.24 ± 0.62			
6 weeks	1173	2.32 ± 0.64	990	2.22 ± 0.67	−0.002	−0.10 to 0.09	0.97
6 months	1105	2.28 ± 0.63	893	2.22 ± 0.66	0.02	−0.040 to 0.08	0.54
12 months	1052	2.27 ± 0.63	925	2.19 ± 0.64	0.01	−0.07 to 0.08	0.83

adolescents and young adults has previously been estimated at approximately 25% [30]. It is therefore possible that the majority of those experiencing problems actively sought help, regardless of whether or not they received the intervention. Potentially, a high rate of help-seeking could reflect the impact of recent high-profile campaigns aimed to increase awareness of mental health problems and improve mental health literacy, particularly in relation to depression [31,32]. However, it is also important to note that most participants who sought help did so for depression or anxiety; conversely, the total number of participants seeking help for alcohol and other drug problems was relatively low. This raises the possibility that there may be additional barriers to asking for help for substance use issues during adolescence. In a previous study of high school-age students, we identified three overlapping themes reflecting barriers or enablers to help-seeking for substance use problems: approachability, confidentiality and trustworthiness, and expertise [31]. Future studies may wish to explore these in more detail, including whether they can be addressed via school-based intervention programs.

Utilising a randomised controlled study design, this trial of MAKINGtheLINK was designed to provide robust evidence of the program across a large representative sample of students from multiple high schools. To date, few trials have been conducted to formally test the effectiveness of similar programs, and to our knowledge MAKINGtheLINK is the first to show actual changes in help-seeking behaviour over the subsequent 12 months, as opposed to merely help-seeking intentions. In particular, the shift to formal help sources is a key finding given the increasing prevalence of anxiety and depressive disorders throughout adolescence and early adulthood, and research demonstrating that prompt treatment is essential in reducing the long-term impact of early onset mental health problems [1]. Given that many young people experiencing mental illness do not access health services, [4, 30] such findings highlight the importance of MAKINGtheLINK in addressing low rates of formal help-seeking among young people. The increase in confidence to help a peer seek

professional help is also an important finding. Given that past research has demonstrated that only 25–35% of adolescents would recommend their peers seek professional help for mental health problems, [6,11] there is a clear need for strategies that facilitate appropriate helping behaviour amongst young people.

A number of limitations are important to note. First, the study relied on participants' self-reported help-seeking behaviours (as well as self-reported beliefs and attitudes regarding help-seeking), which may be subject to bias. Second, while a broad range of schools were included, results may not generalise to other contexts, or to other age groups. Third, the gender of the peer described in the vignette was fixed (i.e., it did not vary according to participant gender). This may have influenced participants' reported likelihood of seeking help, confidence to help a peer, and perceived barriers to help-seeking, as recipient gender has been found to influence the mental health first aid actions taken by young people [32]. Fourth, as noted above, the hypothetical scenarios described in the vignettes may not reflect how adolescents respond to real-life situations. Finally, the effect of the intervention on confidence lessened over time, and should be interpreted with caution in light of the lack of impact of the intervention on likelihood or perceived barriers to seeking help. Future research may wish to assess confidence in more detail, and if findings are replicated, should investigate ways in which confidence can be increased long-term, as well as examining whether this translates into a change in actual behaviour.

In summary, the results demonstrate that while the rate of help-seeking overall remained unchanged, participation in the MAKINGtheLINK program effectively increases formal help-seeking behaviour amongst young people. In doing so, it is likely to equip adolescents with the knowledge and skills to not only support their peers, but also themselves. These findings highlight the value of providing skills-based wellbeing programs to young people within the school setting, and indicate that MAKINGtheLINK makes a significant contribution to existing early intervention and prevention efforts.

## Declaration of competing interest

All authors have completed the ICMJE uniform disclosure form at [www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf). All authors with the exception of Dr Jorm declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; and no other relationships or activities that could appear to have influenced the submitted work. Dr Jorm declares conflict of interest on the basis that his salary was while working on the project was covered by an NHMRC Senior Principal Research Fellowship.

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## Transparency declaration

The lead author (the manuscript's guarantor) affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

## Ethical approval and informed consent

Ethical approval was obtained from Monash University Human Research Ethics Committee (2013000141), the Department of Education and Early Childhood Development Victoria (2013\_001939), and the Catholic Education Office (GE13/0009). An opt-in consent process was used for the first five schools recruited in 2013, whereby students returned consent forms signed by their parent/guardian. To increase the number of students participating, ethical approval was sought and granted to change the process of obtaining consent to a passive/opt-out process, which was applied to schools recruited from 2014 onwards (see [13] for further details). Parents/guardians were informed of their child's participation via the school newsletter and could withdraw consent in writing via email or letter. Students were required to give verbal consent to participate.

## Access to data

All authors, external and internal, had full access to all of the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

## Data sharing

Due to ethics agreements associated with the trial, participant data is not available to external sources.

## Trial registration

The trial was registered with the Australia and New Zealand Clinical Trials Register (ANZCTR) on the 27th of February 2013 (registration number ACTRN12613000235707).

## Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.eclinm.2019.11.018.

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