How ‘mental health smart’ are you? Analysis of responses to an Australian Broadcasting Corporation News website quiz

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Background: In Australia, 7.3 million people aged between 16-85 years of age will have a mental disorder during their lifetime and mental health knowledge can improve their long term outcomes. Objective: This research examines the knowledge that the Australian public has about mental health and its associations with mental health training, personal experience, age and gender. Method: Data analysis was conducted on 16,783 (64% female) completed “How ‘mental health smart’ are you?” questionnaires from the Australian Broadcasting Corporation News website. Descriptive analysis was conducted, including examination of proportions of correct responses and multivariate logistic regression. Results: The descriptive analysis showed knowledge about depression was highest, while knowledge about anxiety and psychosis were lowest. People who reported experience with their own or friends/family mental health problems had higher odds of answering correctly, as did people who had completed any mental health training. Discussion: Insights in these areas could be used to target future interventions, including increased public awareness campaigns for mental illnesses with lower public health knowledge such as psychosis and anxiety. Examination of the methods used in previous public health awareness campaigns relating to depression could discover effective methods to be applied to anxiety and psychosis campaigns. The results of this study support an increase in the availability of the mental health training such as the Mental Health First Aid course to the Australian public.

Keywords: mental health; mental health literacy; public health awareness; mental health training.

Introduction

In the 2007 National Health and Wellbeing Survey (Australian Bureau of Statistics, 2010), 45% of Australians aged 16-85 years reported they had experienced a mental disorder in their lifetime. Untreated mental disorders can reduce quality of life, cause social isolation and lead to suicide (O'Connor, Martin, Weeks, & Ong, 2014). Early recognition and treatment of mental disorders may improve long-term outcomes;
however, most people don’t seek professional help or delay seeking help for many years (Jorm, 2012; Reavley & Jorm, 2011). Some of the reasons for delay or lack of help-seeking are lack of recognition of their own mental disorder, lack of recognition of the mental disorder by others, lack of knowledge of available help and beliefs about interventions and treatments (Jorm, 2012; Reavley, McCann, Cvetkovski & Jorm, 2014).

Mental health literacy (MHL) has been defined as involving:

“knowledge of how to prevent mental disorders, recognition of when a disorder is developing, knowledge of help-seeking options and treatments available, knowledge of effective self-help strategies for milder problems, and first aid skills to support others developing a mental disorder or in mental health crisis” (Jorm, 2012).

Reavley and Jorm (2011) reported improvements in the MHL of the Australian public from 1995 to 2011, although they noted potential for further improvements. Interventions that have contributed to improving MHL in Australia include community campaigns by organisations such as beyondblue and Mental Health First Aid (MHFA) training (Jorm, 2012; Reavley & Jorm, 2011). MHFA courses aim to teach members of the public how to recognise mental disorders as well as how to respond to and provide support to someone developing a mental illness or in a mental health crisis (Bond, Jorm, Kitchener & Reavley, 2015; Bond, Jorm, Kitchener & Reavley, 2016; Hadlaczky, Hökby, Mkrtchian, Carli, & Wasserman, 2014; Jorm, 2012). A meta-analysis of 15 studies showed that MHFA training improved participants’ knowledge, attitudes and behaviours towards mental illness (Hadlaczky, et al., 2014).

Better MHL in the Australian public is associated with improved long-term outcomes for people with mental illness (Bonabi, et al., 2016). MHL can aid early recognition of mental illness as well as understanding of appropriate treatments, health services and interventions that are associated with increased help-seeking behaviours (Bonabi, et al., 2016; Jorm, et al., 1997; O'Connor, Martin, Weeks, & Ong, 2014). Several other factors contribute to delaying or suppressing help-seeking behaviour including misconceptions and stigma about mental illness, both of which can be reduced with increased MHL in the general population (O'Connor, Martin, Weeks, & Ong, 2014; Thorsteinsson, Loi & Moulynox, 2014).
Previous research has suggested variation in MHL of people depending on sex, age, country of birth, training and personal experience (Gibbons, Thorsteinsson & Loi, 2015; Jorm & Kelly, 2007; Lauber, Nordt, Falcato & Rössler, 2003; Reavley, McCann & Jorm, 2012; Thorsteinsson, Loi & Moulynox, 2014). Variation has also been detected in MHL regarding different disorders with knowledge of depression being higher than knowledge of anxiety and psychosis (Gibbons, Thorsteinsson & Loi, 2015; Reavley & Jorm, 2011; Thorsteinsson, Loi & Moulynox, 2014, 2014). Determining stronger and weaker areas of MHL in the Australian public could highlight effective past interventions and reveal specific topics which could most benefit from future interventions. Similarly, comparing MHL between subgroups of the population could identify where future interventions are most needed.

Aims

This research aimed to assess the MHL of the Australian public and the differences in MHL between sub-groups. MHL was examined across genders, age groups and people with and without experience with mental illness. The MHL of people with no mental health training was compared to people with MHFA training, people with professional mental health training (e.g., doctors, psychologists, nurse) and people with other mental health training.

Methods

Study design

This research is a cross-sectional study involving the analysis of data from the online questionnaire “How ‘mental health smart’ are you?” (Appendix 1), which was available to all members of the public on the Australian Broadcasting Corporation (ABC) News website during Mental Health Week in October of 2015. The questionnaire was adapted from a questionnaire used to evaluate the effectiveness of the Mental Health First Aid course (Bond, et al., 2015). The number of evaluation items was reduced to meet the needs of the ABC, while demographic and exposure questions were added to allow meaningful research to be conducted with the responses.
ABC News online had an average of 3.8 million visitors to their site each week in 2015 (Australian Broadcasting Corporation, 2015, p. 54). A link to the questionnaire was displayed on the ABC News homepage, as well as on any articles related to mental health or illness and there were no exclusion criteria.

Data collection
All data was collected anonymously through the ABC News website. The questionnaire began with fourteen questions designed to assess the MHL of the participant. These were presented as statements about mental health conditions and treatments, and participants were asked to indicate whether they agreed or disagreed with each statement. The correct responses, feedback and links to more detailed information for each item were displayed after the participant had selected their response.

The MHL items were followed by two socio-demographic questions (age group and gender) and three exposure questions (previous mental health training, experience with mental illness in family or friends and personal experience of mental illness).

Participants
There were 27,925 anonymous responders to the questionnaire. Of those, 19,161 (69%) completed all of the 14 MHL items and 16,783 (60%) responded to the entire questionnaire (14 MHL items and five demographic/exposure questions). Unless stated, the remainder of results presented in this report are based only on responses from the 16,783 participants who completed the entire questionnaire. Table 1 shows the number and proportion of participants who completed the entire questionnaire based on their responses to the demographic and exposure questions.

Data analysis
Stata 14 was used to produce the initial summary statistics including the number and proportion of participants who completed each question, all of the MHL items and the entire questionnaire. The proportion of participants that answered each item correctly was calculated for participants who completed only the mental health literacy items and again for participants who completed the entire questionnaire. The number of MHL
items answered correctly was assessed for participants who answered the entire questionnaire and results were examined by responses to each of the demographic and exposure variables.

Responses with any missing mental health literacy items, demographic or exposure variables were dropped and the remaining analyses were performed only on responses with no missing data.

An Item Response Theory (IRT) analysis was conducted to assess whether the MHL items could be reduced to one or more subscales. Based on the IRT, there did not appear to be a strong underlying trait, so the items were analysed as individual binary variables with logistic regression. All logistic regression was performed in Stata 14.

Some variables were re-coded in preparation for the logistic regression. For gender, ‘other’ responses were recoded to missing for the logistic regression analysis, as less than 1% of participants selected this response. For the variables relating to experience with mental illness of a family member or close friend and personal mental illness, ‘don’t know’ responses were recoded to missing, as this information would not have contributed to any useful conclusions.

For each item of the mental health literacy scale, univariate and multivariate analyses were used with the ‘logistic’ command, with confidence intervals of 95% and 99%. Statistical significance was inferred when the 95% confidence interval for the odds ratio excluded 1.

**Ethics**

This research was approved by the University of Melbourne’s Human Research Ethics Committee, ID 1646288.

**Results**

**Correct responses**

The proportion of participants who answered each of the mental health literacy items correctly is shown in Table 2. The items ‘Depression: exercise relieves’ and ‘Unconscious (drugs): lie on side’ were answered correctly by almost all participants (98% and 97% respectively). ‘Anxiety: provoke to recover’ had the least correct responses, with only 41% of participants answering correctly. In general, items related
to depression and substance abuse had higher proportions of correct responses, while items related to anxiety and psychosis had lower proportions of correct responses.

[Table 2 about here.]

**Logistic regression**

Multivariate logistic regression was used to determine the odds of correctly answering each item by each the demographic and exposure variables, after adjusting for the other demographic and exposure variables. Figure 1 shows the odds ratios for correctly responding to each item based on the mental health training participants had received. This showed that participants had higher odds of correctly responding to each of the mental health literacy items with each training option compared to no mental health training. Between items, there was variation for which mode of training provided the best odds. Professional training provided the best odds for ‘Anxiety: provoke to recover’, while MHFA training provided the best odds for ‘Panic: breathe into paper bag’.

There is also variation in how much better the odds are between training methods for each of the items. For example, ‘Aggressive: speak firmly to calm’ doesn’t have much better odds for those with training compared to those without, while ‘Suicide: asking gives the idea’ had much better odds for those with any of the mental health training options compared with no training. ‘Anxiety: provoke to recover’ and ‘Psychosis: family prevent relapse’ have greater odds of being answered correctly for those with professional training compared with those with no training, MHFA training or other mental health training. On the other hand, ‘Depression: exercise relieves’ and ‘Panic: breathe into paper bag’ had the best odds for those with MHFA training.

[Figure 1 about here]

The first two plots of Figure 2 show the odds ratios for correctly responding to each item based on age category compared to the baseline of 15-29 years of age. The third plot shows the odds ratios for correctly responding to each item based on gender, that is, being female compared with male. There is no clear trend across the items for age or gender. There is also large variation across these groups within each of the items.

[Figure 2 about here.]

The first plot of Figure 3 shows the odds ratios for correctly responding to each item for those who have had a family member or close friend who has ever had a mental
illness compared to those who have not. The second plot shows the odds ratios for individuals who have ever had a mental illness compared to those who have not. These plots show the odds ratios are generally better across the items for both types of experience with mental illness, however there is a lot of variation within the groups between items. For example, people with exposure to mental illness through a family member or close friend had higher odds of answering ‘Depression: force seek help’ correctly than they did ‘Depression: exercise relieves’.

There is also variation for each item between the two types of exposure. For example ‘Anxiety: provoke to recover’ is negatively associated with mental illness experience through family or friends, but is positively associated with personal mental illness. On the other hand, ‘Psychosis: family prevent relapse’ is positively associated with mental illness experience through family or friends and negatively associated with personal mental illness.

[Figure 3 about here.]

Discussion

Knowledge about mental health

The responses to this questionnaire showed knowledge of depression was highest, followed by suicide, self-injury and substance abuse; while knowledge about anxiety and psychosis were lowest.

These results are similar to trends of a 2012 survey by beyondblue which found that 58% of people identified depression as a major mental health problem, while only 21% identified schizophrenia/psychosis, 12% anxiety and 11% drug or alcohol abuse (Beyond Blue Ltd, 2014, p. 5). Similar trends were also found in research by Gibbons, Thorsteinsson & Loi (2015) where participants correctly identified depression more than anxiety and schizophrenia in descriptive vignettes.

The high proportions of correct responses for items relating to depression are likely due to the effectiveness of long-term awareness campaigns like that of beyondblue to raise public knowledge of depression (Gibbons, Thorsteinsson & Loi, 2015; Jorm, Christensen & Griffiths, 2005; Reavley & Jorm, 2011; Thorsteinsson, Loi & Moulynox, 2014). The national depression initiative by beyondblue was associated with an increase in knowledge about appropriate ways to seek help and appropriate
types of treatments, as well as suspected improvements in recognition of depression and reduced stigma (Jorm, Christensen & Griffiths, 2005; Jorm & Kelly, 2007). beyondblue began raising awareness of depression in 2000, anxiety in 2011 and suicide prevention more recently which may mean improvements will be revealed in future reviews of knowledge about anxiety and suicide prevention (Beyond Blue Ltd, 2016). Investigation into the differences between the delivery of beyondblue’s depression and anxiety campaigns could provide further insight to improve the efficacy of future campaigns.

While ‘Unconscious (drugs): lie on side’ was related to substance abuse for the purposes of this questionnaire, the recovery position is a commonly known component of standard (physical) first aid knowledge (St John Ambulance Australia (VIC) Inc, 2013). The high proportion of correct response to this item may provide a more accurate indication of physical first aid knowledge than it does of substance abuse related mental health knowledge. If the ‘Unconscious (drugs): lie on side’ item is excluded from the substance abuse category, knowledge of substance abuse is still higher than anxiety and psychosis based on responses to the other items in this questionnaire. This contradicts the findings by beyondblue in 2012 (Beyond Blue Ltd, 2014, p. 5), although their findings related to the identification of substance abuse as a major mental health problem, while this questionnaire looked at knowledge of treatments/reactions.

High proportions of correct responses to items related to suicide and self-injury are likely to be the result of public awareness work. Organisations such as Lifeline (founded in 1963) and Suicide Prevention Australia (founded in 1992) have been working to increase knowledge of how to respond to people at risk of suicide (Lifeline Australia, 2016; Suicide Prevention Australia, 2016).

**Predictors of mental health literacy**

The odds ratio for correctly answering each of the MHL items were better for people who reported having undergone any of the mental health training options compared with no mental health training. Professional training had a significant positive association for thirteen out of the fourteen MHL items which corresponds with previous reports of discrepancies between professional and public mental health knowledge (Jorm & Kelly, 2007). There was a significant positive association for nine out of the fourteen items with MHFA training and for seven out of the fourteen items for other mental health training.
It is important to increase the MHL of the general public as the ability of self, friends and family to identify disorders, knowledge of how to seek help, reduction of misconceptions about treatments and reduction of stigma’s associated with mental illness are key factors in increasing help-seeking behaviours (Jorm & Kelly, 2007).

‘Depression: exercise relieves’ had similar odds ratios for all types of training compared with no training which suggests that the general public is highly aware of the benefits of exercise for depression and specific mental health training is not needed for this topic. ‘Suicide: asking gives the idea’ had the highest odds ratio across all mental health training types compared with no training with MHFA training providing the highest odds ratio for this item. This highlights the lack of public awareness regarding whether or not it is helpful to ask someone if they are having thoughts about suicide and shows the large impact that mental health training can have on this. Increasing this knowledge in the wider Australian public could prevent suicide, which is an important goal of the Australian government and organisations such as Lifeline and beyondblue (Lifeline Australia, 2016; Suicide Prevention Australia, 2016).

There were mixed results regarding the effect of gender. However, more significant positive associations were found for females compared to males. Overall, gender could not be used as a clear predictor of mental health literacy across all items in this questionnaire. Population based studies of gender differences in mental health literacy have found women to have a higher level of mental health literacy compared with men (Cotton, Wright, Harris, Jorm & McGorry, 2006; Kaneko & Motohashi, 2007; Swami, 2012). This questionnaire used a volunteer sample and the selection bias introduced by this self-selection may have moderated the gender affect. Detailed studies of the differences between specific mental health knowledge areas of genders may assist in better targeting campaigns and interventions to appropriate people (Gibbons, Thorsteinsson & Loi, 2015; Reavley, McCann & Jorm, 2012).

Like gender, the odds ratios of correctly answering individual items were significantly different for most items between the baseline age group of 15-29 years of age and the two comparison groups, 30-59 and 60 years of age or older. Also similar to gender, the differences were not consistent across the items, so a statement pertaining to the overall predictive value of age on mental health literacy could not be made based on this data. Of the significant results, there was no clear pattern between age groups for items of related disorders (e.g., items regarding depression or items regarding anxiety). Both of the older age categories had significantly lower odds ratios for items relating to
forcing people to talk or seek help (where the correct answers involved no force) and items relating to showing negative reactions or disapproval to behaviours of mental illness (where the correct answers involved not showing negative reactions or disapproval). Previous research has shown that young adults have a higher level of mental health literacy than older adults and that the strengths and weaknesses in mental health knowledge between age groups vary (Farrer, Leach, Griffiths & Christensen, 2008; Fisher & Goldney, 2003). This may be due factors such as delivery of mental health education being via media more accessible to younger people or higher levels of stigma in older people (Farrer, Leach, Griffiths & Christensen, 2008). The results of this study support previous research, however the volunteer sample and error of measurement with single items to measure aspects of mental health literacy are likely to have moderated the effect of age. Understanding of specific differences in MHL of different age groups could help to increase the effectiveness of MHL campaigns. When experiencing mental health problems, young people are more likely than older people to use informal sources of help such as friends and family (Farrer, Leach, Griffiths & Christensen, 2008; Jorm & Kelly, 2007; Reavley, McCann & Jorm, 2012). This highlights the importance of the ability of family and friends to recognise mental disorders and recommend appropriate help.

Exposure to either mental illness in a family member or friend, or personal mental illness showed mixed associations with increased odds ratios for most items. Previous research presents mixed results with Goldney, Fisher and Wilson (2001) reporting no difference in MHL of people with major depressive disorder, and Lauber, Nordt, Falcato and Rössler (2003) reporting higher MHL for people with a history of mental illness regarding depression but not schizophrenia. Positive associations for those with personal experience with mental illness may be related to advice provided by mental health professionals or the individuals’ own experiences with specific illness or treatments. Positive associations for people with either personal experience with mental illness or experience with mental illness of a family member or friends may stem from direct experience or the increased chance that the individual would have sought information on the relevant illness or symptoms.

**Strengths and limitations of the study**

The most valuable strength of the study was the sample size of 16,783 completed surveys, which gave the analysis very high precision of the parameter estimates. This
was likely due to the wide distribution of the survey on a website which is accessed by many Australians and the study being very short, simple and cross sectional. Being a cross-sectional survey provides information about associations between exposures and outcomes, but cannot be used to infer causality.

The demographic and exposure questions were an optional component at the end of the questionnaire, which meant that participants could drop out prior to completing those questions. Twelve percent of participants who completed the mental health literacy component of the questionnaire did not complete the demographic and exposure questions. Based on the proportion of correct responses to each item, there were not large differences between the group who did not complete demographic and exposure variables and the group who did complete them.

The sample was not representative of the wider Australian population, most clearly shown by the difference in genders of participants, with almost double the number of female participants compared to males. There was also likelihood of bias in unmeasured variables such as education level and other socio-economic factors which are understood to have an effect on mental health literacy (Furnham, Annis & Cleridou, 2014; Galletly, Neaves, Burton, Liu & Denson, 2012). Education and socio-economic factors may have impacted on who had internet access and accessed the ABC News site and, in turn, who participated in the questionnaire. The MHL items used for this research had not been used previously so reliability and validity statistics were not available.

Conclusions and recommendations

Mental illness presents a significant burden to affected individuals and their communities, however; outcomes can be improved with higher MHL of the general public. High levels of MHL can result in earlier recognition of disorders by the affected individual and the people around them, improved knowledge of appropriate treatments and reduce stigma surrounding mental illness.

Examination of public awareness campaigns for depression should be conducted to determine effective techniques of raising MHL. These techniques should be applied to campaigns for other areas of MHL which are currently lagging in public knowledge, such as anxiety disorders and psychosis.
Any form of mental health training is associated with higher levels of MHL. Mental Health First Aid training was associated with higher odds of answering correctly for most items; with significantly larger odds for the item regarding suicidal thoughts. The available of the MHFA course should be increased to the Australian public.

Differences in the specific areas of mental health knowledge between people of different demographics such as gender and age should be explored further to enable more appropriate and effective targeting of campaigns to improve MHL. People affected directly and indirectly by mental illness should have access to accurate information about the relevant disorder and treatments. This may require examination of current practices regarding information provided at professional services.

Acknowledgements

We thank Cathy Johnson, Claudine Ryan, Matthew Liddy and Simon Elvery for their contribution to the development of the questionnaire which this work was based on. We thank the Australian Broadcasting Network for making data from the questionnaire available to the researchers and we are also grateful to the participants who completed the questionnaire.

References


Appendix 1: Questionnaire used for data collection

How ‘mental health smart’ are you?

Mental health problems are incredibly common, yet often poorly understood. How much do you know?

This quiz presents some beliefs or statements about various conditions. For each one, please indicate whether you agree or disagree.

Please note the correct response shown here with each statement did not appear until after the participant had responded.

(1) If a person you think might be depressed does not want to seek help, it is important to force them if you can. Disagree.

(2) Exercise can help relieve depression. Agree.

(3) To recover from anxiety disorders, you have to face situations that provoke your anxiety. Agree.

(4) When dealing with someone who has psychosis (which involves disorganised thinking, and seeing or hearing things that aren't real), it is best not to offer choices about how you can help them because it could add to their confusion. Disagree.

(5) A person with a psychotic illness is less likely to relapse (become ill again after a partial recovery) if they have a good relationship with their family. Agree.

(6) A good way to help a person with a drug or alcohol problem is to let them know that you strongly disapprove of their substance use. Disagree.

(7) It is not a good idea to ask someone if they are feeling suicidal in case you put the idea in their head. Disagree.
(8) If a person is cutting themselves to cope with emotional distress, you should avoid expressing a strong negative reaction to the self-injury. Agree.

(9) It is best to get someone having a panic attack to breathe into a paper bag.
    Disagree.

(10) If someone has a traumatic experience, it is best to make them talk about it as soon as possible. It is best not to try to reason with a person having delusions (false beliefs, for example that they are being persecuted or under the control of outside forces). Disagree.

(11) It is best not to try to reason with a person having delusions (false beliefs, for example that they are being persecuted or under the control of outside forces).
    Agree.

(12) If someone is intoxicated with alcohol, it is not possible to make them sober up more quickly by giving them strong coffee, a cold shower or taking them for a walk. Agree.

(13) If someone becomes unconscious after taking drugs, it is best to lie them on their side rather than on their back. Agree.

(14) If someone who's mentally ill becomes aggressive, they will generally calm down if spoken to firmly. Disagree.

**Socio demographic questions**

Would you be willing to answer a few additional questions about yourself? These questions are optional, answering them will allow an analysis of which groups of Australians require greater mental health knowledge.
Which age group do you belong to?
15-17; 18-19; 20-24; 25-29; 30-34; 35-39; 40-44; 45-49; 50-54; 55-59; 60-64; 65-69;
70-74; 75+

Have you ever done any mental health training?
Professional training (e.g., psychologist, nurse, doctor); Mental Health First Aid course;
Other; None

What is your gender?
Female; Male; Other

Has anyone in your family or close circle of friends ever had mental health problems?
Yes; No; Don’t know

Have you ever had mental health problems?
Yes; No; Don’t know

Do you need to talk to someone?
Lifeline on 13 11 14
Kids Helpline on 1800 551 800
MensLine Australia on 1300 789 978
Suicide Call Back Service on 1300 659 467
Tables and figures

Table 1.

Number and proportion of participants who completed the questionnaire by responses to the demographic and exposure questions.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5,965</td>
<td>35.5</td>
</tr>
<tr>
<td>Female</td>
<td>10,666</td>
<td>63.6</td>
</tr>
<tr>
<td>Other</td>
<td>152</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Age category</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-29</td>
<td>5,290</td>
<td>31.5</td>
</tr>
<tr>
<td>30-59</td>
<td>9,432</td>
<td>56.2</td>
</tr>
<tr>
<td>60 or more</td>
<td>2,061</td>
<td>12.3</td>
</tr>
<tr>
<td><strong>Mental health training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>11,445</td>
<td>68.2</td>
</tr>
<tr>
<td>MHFA course</td>
<td>1,237</td>
<td>7.4</td>
</tr>
<tr>
<td>Professional training</td>
<td>2,149</td>
<td>12.8</td>
</tr>
<tr>
<td>Other</td>
<td>1,952</td>
<td>11.6</td>
</tr>
<tr>
<td><strong>Family / friend mental illness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>2,174</td>
<td>13.0</td>
</tr>
<tr>
<td>Yes</td>
<td>13,508</td>
<td>80.5</td>
</tr>
<tr>
<td>Don't know</td>
<td>1,101</td>
<td>6.6</td>
</tr>
<tr>
<td><strong>Personal mental illness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>6,135</td>
<td>36.6</td>
</tr>
<tr>
<td>Yes</td>
<td>9,036</td>
<td>53.8</td>
</tr>
<tr>
<td>Don't know</td>
<td>1,612</td>
<td>9.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16,783</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 2.

The proportion of responders answering each of the mental health literacy items correctly.

<table>
<thead>
<tr>
<th>Item</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression: exercise relieves</td>
<td>98%</td>
</tr>
<tr>
<td>Unconscious (drugs): lie on side</td>
<td>97%</td>
</tr>
<tr>
<td>Aggressive: speak firmly to calm</td>
<td>87%</td>
</tr>
<tr>
<td>Depression: force to seek help</td>
<td>85%</td>
</tr>
<tr>
<td>Suicide: asking gives the idea</td>
<td>85%</td>
</tr>
<tr>
<td>Psychosis: family prevent relapse</td>
<td>77%</td>
</tr>
<tr>
<td>Self-injury: avoid negative reaction</td>
<td>75%</td>
</tr>
<tr>
<td>Intoxicated: coffee, shower, walk</td>
<td>74%</td>
</tr>
<tr>
<td>Substance use: disapproval helps</td>
<td>74%</td>
</tr>
<tr>
<td>Trauma: force to talk asap</td>
<td>68%</td>
</tr>
<tr>
<td>Panic: breathe into paper bag</td>
<td>67%</td>
</tr>
<tr>
<td>Psychosis: choices confuses</td>
<td>61%</td>
</tr>
<tr>
<td>Delusions: don’t reason with</td>
<td>54%</td>
</tr>
<tr>
<td>Anxiety: provoke to recover</td>
<td>41%</td>
</tr>
</tbody>
</table>
Figure 1. Odds ratios for answering each mental health literacy item correctly with different types of mental health training compared to the baseline of no mental health training. The odds ratios are presented on a logarithmic scale with the 95% confidence intervals. These odds ratios are after adjustment for age category, gender, mental illness of family/friends and personal mental illness.

Figure 2. Odds ratios for answering each mental health literacy item correctly with different age categories and gender compared to the baseline of no 15-29 years of age and male. The odds ratios are presented on a logarithmic scale with the 95% confidence intervals. These odds ratios are after adjustment for mental health training, age category (gender plot only), gender (age plots only), mental illness of family/friends and personal mental illness.

Figure 3. Odds ratios for answering each mental health literacy item correctly with different types of experience with mental illness compared to the baseline of no experience with mental illness. The odds ratios are presented on a logarithmic scale with the 95% confidence intervals. These odds ratios are after adjustment for mental health training, age category, gender, mental illness of family/friends (personal mental illness only) and personal mental illness (family/friends mental illness only).