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Suicide literacy predicts the provision of more appropriate support to people experiencing psychological distress

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Highlights

- People rarely recommend professional help to distressed friends or acquaintances
- Suicide literacy led to appropriate recommendations to people who were suicidal
- Unexpectedly, suicide literacy led to fewer recommendations of professional help overall
- Stigma may be a barrier to effectively supporting others in distress

Suicide literacy predicts the provision of more appropriate support to people experiencing psychological distress

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Abstract

Mental health literacy has been hailed as a public health priority to reduce stigma and increase help seeking. We examined the effect of suicide literacy on the type of help provided to those experiencing suicidal ideation. A community sample of 363 Australians were randomly assigned to read one of three messages from a member of their social network (the target). The target reported symptoms consistent with either (1) subclinical distress, (2) clinical depression, or (3) suicidal ideation. Participants were most likely to recommend social support and least likely to recommend professional help. Suicide literacy interacted with the target's presentation, such that participants with higher suicide literacy who considered a suicidal target were less likely to recommend self help or no action, and more likely to recommend professional help. Suicide literacy was also associated with lower suicide stigma, and unexpectedly, this indirectly predicted more reluctance to recommend professional help. Overall, results indicated that the relationship between mental health literacy, stigma, and provision of help is not straightforward. While suicide literacy was associated with greater sensitivity to a person's risk of suicide, it also predicted fewer recommendations for professional help overall, partly due to the stigma associated with seeking professional help.

Keywords: mental health literacy, mental health stigma, help seeking, social support, depression.

Suicide literacy predicts the provision of more appropriate support to people experiencing psychological distress

1. Introduction

Mental health literacy (MHL) refers to the accurate knowledge that a layperson possesses regarding mental illness. This includes the signs, symptoms, and particularly, effective treatments, for common disorders; depression, suicide, and schizophrenia have received the greatest attention in the literature to date (Jorm et al., 2006). MHL has been touted as an important public health initiative with the potential to reduce stigma, increase help seeking, and ultimately contribute to improved mental health in the community (Corrigan et al., 2014; Jorm, 2012). Empirical support for these claims has been mixed (see for example, Schomerus et al., 2012), but a recent meta-analysis of 15 studies found that MHL training led to enhanced mental health knowledge, improved attitudes towards mental illness, and increased a person's willingness to provide help to people with mental illness (Hadlaczky et al., 2014). The process through which MHL might lead to these outcomes is not entirely established, but it is logical that people who are better able to recognise mental illness symptoms, and who are better informed about available treatments, will have more positive attitudes towards help seeking (Gulliver et al., 2012).

One of the benefits often attributed to MHL is that it enables people to provide more appropriate and targeted support to members of their social networks who experience mental illness symptoms. For instance, in a review of MHL interventions, Kelly and colleagues (2007) argued that adults with good MHL would be more likely to notice the early signs of mental illness in a young person, and to seek help on their behalf. Similarly, a review of help seeking for mental illness found that young people perceived stigma and poor mental health literacy to be barriers to help seeking (Gulliver et al., 2010). By contrast, having social support and being encouraged to seek help were seen to be facilitators of help seeking. Among people who have sought professional help for mental health, over 75% had someone recommend it, and this was associated with more positive expectations about

mental health services (Vogel et al., 2007). This highlights a theme throughout the research on MHL, which is that one of its most important potential benefits is that people will (a) provide more appropriate social support to their friends and family who experience symptoms of mental illness, and (b) facilitate entry into formal professional care for friends and family when this is indicated.

However, evaluations of MHL have rarely examined whether increased MHL (e.g. via a training program) is associated with the provision of more appropriate advice or support to people in need (Kelley et al., 2007). Instead, research has primarily focused on participants' anticipated help-seeking themselves, if they were to experience an issue similar to what they have considered in a vignette (e.g., Calear et al., 2014a; Goldney et al., 2001; Taylor-Rodgers and Batterham, 2014). The few studies that have considered the provision of help and support to others have focused on self-reported variables, such as confidence in providing help and frequency of providing help (e.g., Kitchener and Jorm, 2006; Svensson and Hansson, 2014). One large population study (Rossetto et al., 2014) investigated the kinds of support that people spontaneously suggested for six people experiencing a mental illness described in a vignette (one of whom was suicidal). This study found that the quality of responses by Australian participants was typically poor and inappropriate, despite other studies suggesting an increase in MHL literacy in the Australian community over the last 25 years (e.g., Reavley and Jorm, 2011). Therefore, while the evidence suggests that MHL generally leads to more positive attitudes towards providing (unspecified) help to others, it is not yet clear whether MHL predicts the actual frequency or specific type of help a person provides.

This is important because self-presentational biases are more likely to affect self-reported subjective variables like willingness, confidence or frequency of providing help. It is also the case that people with psychological distress report that the type of help they receive from social networks is not always beneficial (Eagles et al., 2003). Specifically, a person might believe they are being helpful by making recommendations for self help or no action,

such as to “wait it out”, “get some exercise”, or “think positive”, but these are unlikely to be beneficial, particularly to someone experiencing clinically significant symptoms or a suicidal crisis. By contrast, the untested assumption has often been that the kind of help that people with good MHL provide to friends and family is appropriate and consistent with the evidence base, for instance, social support, or facilitating a person to access professional support. However, to date no one has examined whether MHL actually affects how people engage with friends and family who are experiencing psychological distress. The aim of this study is to examine the specific help recommendations that people make when confronted with a distressed friend or acquaintance, and whether this is affected by the severity of the distress as well as a person’s MHL.

1.1 The current study

This experiment focused on suicide literacy and prevention, because suicide is one of the greatest contributors to the burden of disease associated with mental illness (Ferrari et al., 2014; Vigo et al., 2015). Furthermore, it is well-established that people experiencing a suicidal crisis often reach out to their friends and family, and in many cases such contact may prove to be a critical point of intervention to prevent such a crisis from culminating in a suicide attempt (Eagles et al., 2003; Handley et al., 2012). Indeed, friends and family members of people who completed suicide reported in a qualitative study that many of the warning signs were ambiguous and they had often felt unsure of how to intervene (Owens et al., 2011). This highlights the importance of examining the type of help that is recommended to a friend or family member in suicidal crisis and the role of suicide literacy in supporting appropriate recommendations.

In the current study, we therefore explore how suicide literacy affects peoples’ recommendations and support provided to a friend experiencing a suicidal crisis, compared to other kinds of psychological distress. Specifically, we utilise an experimental design in which participants considered a message from a member of their social network who reports

a recent relationship breakdown and symptoms taking the form of (1) subclinical distress, (2) moderate symptoms consistent with clinical depression, or (3) suicidal ideation.

Our primary prediction was that suicide literacy would moderate the nature of help or support participants recommended, such that people high in suicide literacy would be more likely to recommend professional support to a person experiencing a *suicidal crisis* (H1) but more likely to recommend informal help (self help, H2; and social support, H3) to a person experiencing *subclinical symptoms*. By contrast, we expected that people low in suicide literacy would be less responsive to a person's specific presentation, providing recommendations of self help, social support, and professional help at similar frequencies across all three conditions.

2. Method

2.1 Participants and Design

363 participants were recruited via two strategies. First, 232 participants were recruited using an existing participation pool of community members (offered a financial incentive) and undergraduate students (offered course credit as an incentive). Second, to increase the population representativeness of the sample, 131 participants aged 25 and over were recruited using a nation-wide market research panel and received a financial incentive. Informed consent was provided by all participants and the study was approved by the ethical review board at the authors' universities. As this survey was administered as part of a broader study that included a cross-cultural component, people were only eligible to complete the survey if they were citizens of Australia and Caucasian. Table 1 presents full descriptive statistics of the sample and correlations.

2.2 Procedure

Participants were randomly assigned to view one of three targets who described psychological distress. In all conditions, the target ("Alex") provided the context of a recent breakup of a romantic relationship and the messages were of approximately the same

length. The three conditions varied in the severity of symptoms described as follows: (1) in the *subclinical distress* condition, the target reported symptoms such as "feeling so upset" and "crying a lot"; (2) in the *clinical depression* condition, the target reported symptoms consistent with clinical depression such as "I feel worthless", and "I don't feel like eating"; or (3) in the *suicide ideation* condition, the target made statements consistent with acute suicide risk, such as saying "nothing matters" and "I can't do this anymore". An example of the target presentation (from the suicidal ideation condition) is provided in Figure 1. Full materials are provided in the supplementary appendix.

The targets were presented using a medium that mimicked a social messaging app. This mode of presentation was chosen because social messaging is an increasingly dominant medium of communication, with studies suggesting that time spent communicating via social media has now outstripped face-to-face communication among people aged under 40 (Hall, 2018).

2. 3 Measures

2.3.1 Recommendations for support. After reading the message from the target, participants were asked to rank order their top three recommendations they would most likely provide in this situation, first if the target was a close friend, and then again if the target was an acquaintance. Specifically, participants were given the instructions: "Imagine the first thing you said to Alex was: 'I am so sorry to hear that you're having a tough time.' If you were an acquaintance/close friend of Alex, what advice would you give next?" The recommendation that participants ranked *first* was recoded into three dichotomous variables:

(1) Recommendations for professional help. This indicated whether participants suggested any of the five kinds of professional help: Go and see your doctor, Get psychological counselling, Get prescription medication, Call the Suicide Helpline, and Go to the Hospital. Participants received a value of 1 if they ranked any of these five responses first when the target was *either* a close friend or acquaintance, otherwise they received a value of 0.

(2) Recommendations for informal social support. This included: Spend time with people close to you. Participants received a value of 1 on this variable if they ranked this response first when the target was *either* a close friend or acquaintance, otherwise they received a value of 0.

(3) Recommendations for self-help or no action. This included: Time will solve everything, Keep yourself busy, and Try hiking or some light exercise. Participants received a value of 1 if they ranked any of these three responses first when the target was *either* a close friend or acquaintance, otherwise they received a value of 0.

2.3.2 Suicide literacy. The Short form of the Literacy of Suicide Scale (LOSS) was included (Calear et al., 2014b). Participants were asked 12 questions about suicide, and could indicate whether the statement was "True", "False", or "I don't know". Four of the statements were true (e.g., "There is a strong relationship between alcoholism and suicide.") and eight were false (e.g., "Talking about suicide always increases the risk of suicide."). This scale was scored by giving participants 1 point for each correct answer and 0 point for each incorrect or "I don't know" answer. The scale ranged from 0 to 12.

2.3.3 Manipulation check. A manipulation check was included to see if participants were aware of the more severe symptoms described by the target in the suicidal ideation condition, compared to the other conditions (adapted from Burns and Rapee, 2006). That is, we expected the majority of participants to be able to discern the higher levels of psychological distress in the target, even if they were not aware (1) that this indicated suicide risk or (2) what an appropriate form of support might be. Participants were asked three questions about the perceived psychological distress of the target, both if the target was a close friend and if the target was an acquaintance, for a total of six items ($\alpha = 0.86$). Each was measured on a five point scale from (1) Not at all to (5) Very much. The questions were as follows: "If you were an acquaintance/close friend of Alex, how worried would you be about Alex?", "If you were an acquaintance/close friend of Alex, how much unpleasant emotion do you think Alex would feel in this situation?" and "If you were an

acquaintance/close friend of Alex, do you think the unpleasant emotions would interfere with Alex's overall well-being?".

2.3.4 Demographic and exploratory variables.

Suicide stereotypes were measured using the short form of the Stigma of Suicide Scale (SOSS; Batterham et al., 2013a). This was included to measure positive and negative stereotypes about people who are suicidal. The scale includes 16 adjectives such as "brave", "pathetic", and "lost", and participants were asked to rate how much they agree with each description of people who take their own lives (suicide) on a five point scale from (1) strongly disagree to (5) strongly agree. Factor analysis supported the three factor solution as reported in the literature, such that participants' perceptions were best described in terms of (a) a negative, stigmatised stereotype (eight items, e.g., "cowardly", $\alpha = 0.95$), (b) an isolated, depressed stereotype (four items, e.g., "disconnected", $\alpha = 0.92$) and (c) a glorified or normalised stereotype (four items, e.g., "strong", $\alpha = 0.90$). After the factor structure was confirmed, each subscale was calculated based on the mean of the items from that subscale.

Contact with suicide was measured using three questions, each with response options of "Yes " and "No". These were "Have you ever attempted suicide?", "Has anyone close to you (e.g., family member or friend) ever attempted suicide?", and "Has anyone close to you (e.g., family member or friend) ever died from suicide?". A suicide contact variable was created by summing the number of affirmative responses, and ranged from 0 to 3 (Holmes et al., 1999).

Depression symptoms were measured using the Patient Health Questionnaire-9 (PHQ9; Kroenke et al., 2001). The nine items ($\alpha = 0.90$) assess the severity of depression symptoms (as outlined in the DSM-IV, APA, 2000) that a person has experienced in the preceding two weeks.

Finally, participants provided their age, gender, ethnicity, and highest level of education.

3. Results

3.1 Manipulation check

Condition did not predict suicide literacy or any of the demographic variables, supporting the effectiveness of randomisation. The overall mean of suicide literacy was 7.56 (*SD* = 2.30), which is highly similar to the norms for the scale established by Batterham and colleagues (2013b) with 1405 Australian adult participants (*M* = 7.65, *SD* = 2.47).

To assess whether the manipulation succeeded in communicating differential levels of symptom severity, we examined participants' awareness of the target's distress by conducting an univariate ANOVA predicting the index of perceived psychological distress from experimental condition. The results indicated a significant difference, $F_{omnibus}(2, 360) = 8.33$, $p < 0.001$, $\eta^2 = 0.04$. Planned comparisons between conditions indicated that participants perceived the target with suicidal ideation to be significantly more distressed than the target with clinical depression symptoms, $t(241) = -3.14$, $p = 0.002$, Cohen's $d = 0.48$, and the target with subclinical symptoms, $t(242) = -3.77$, $p < 0.001$, $d = 0.40$. However, the targets with clinical and subclinical symptoms were not perceived significantly differently from one another, $t(242) = 0.77$, $p = 0.444$.

3.2 Suicide literacy affects help seeking recommendations

Participants did tend to show some consistency in their recommendations to friends and acquaintances, with significant and positive correlations for recommendations of professional help ($r = 0.55$, $p < 0.001$), self help or no action ($r = 0.36$, $p < 0.001$), and social support ($r = 0.40$, $p < 0.001$). McNemar's chi square test was used to compare the distribution of help recommendations provided to friends versus acquaintances. Recommendations for professional help did not differ between friend (11.8%) and acquaintance (13.5%), $p = 0.405$. However, participants were significantly more likely to

recommend informal social support to a friend (56.2%) than to an acquaintance (47.1%), p = 0.002. Conversely, participants were significantly less likely to recommend self help or no action to a friend (31.7%) than to an acquaintance (39.1%), p = 0.012. The distribution of recommendations to a friend versus an acquaintance is displayed in Figure 2. These were the only differences found between recommendations made to a friend versus an acquaintance, and importantly, these patterns were not moderated by condition or suicide literacy. Therefore, the analyses that follow utilise a dichotomous score for each type of help, where participants received a score of 0 if they did not recommend it first to either friend or acquaintance, and a score of 1 if they recommended it first to either friend or acquaintance.[1]

3.2.1 Recommendations to seek professional help (H1). On average, across the three conditions, only 17.6% of participants recommended professional help to a target. To evaluate whether target presentation and suicide literacy affected the likelihood of recommending professional help, a binary logistic regression analysis was conducted. The dependent variable was whether participants recommended professional help. The independent variables were added in three steps. Step 1 added condition (two dummy coded variables), Step 2 added suicide literacy, and Step 3 added their interaction (one vector for each dummy coded condition variable).

Step 1 indicated that there was no main effect for target presentation, $\chi^2(2) = 2.23$, p = 0.327, Nagelkerke R^2 = 0.01. People were just as likely to recommend professional help to targets experiencing subclinical distress, clinical depression, or suicidal ideation.

Step 2 indicated that there was a main effect for suicide literacy, $\chi^2(2) = 8.13$, p = 0.004, Nagelkerke R^2 = 0.05. This was however a *negative* relationship, such that suicide literacy predicted a lower likelihood of recommending professional help, B = -0.16, p = 0.004, Odds Ratio (OR): 0.85. This effect was such that a person 1 *SD* below the mean on suicide literacy was more than twice as likely to recommend professional help as a person who was 1 *SD* above the mean.

Step 3 indicated that this main effect was qualified by a significant interaction with target presentation, $\chi^2(2) = 8.90$, $p = 0.012$, Nagelkerke $R^2_{change} = 0.09$. One of the interaction vectors was significant (B = 0.34, $p = 0.014$, OR: 1.41). This interaction, consistent with H1, is presented in Figure 3. People with low suicide literacy were least likely to recommend professional help when the target reported suicidal ideation (compared to a target who reported subclinical distress or clinical depression), while people with high suicide literacy were most likely to recommend professional help in this condition.

3.2.2 Recommendations for self help or no action (H2). Self help or no action was a more common recommendation provided to targets, with 50.1% of participants making this recommendation to a target. A binary logistic regression analysis was conducted to investigate the effects of target presentation and suicide literacy on the likelihood of recommending self help or no action (with the same steps and predictors as for the analysis of professional help above).

Step 1 indicated that there was a marginally significant main effect for target presentation, $\chi^2(2) = 5.59$, $p = 0.061$, Nagelkerke $R^2 = 0.02$. One of the condition vectors was significant, B = -0.59, $p = 0.022$, OR: 0.55. This effect was such that participants were less likely to recommend self help or no action when the target reported suicidal ideation compared to when the target reported clinical depression or subclinical distress.

Step 2 indicated that there was a marginally significant main effect for suicide literacy, $\chi^2(1) = 3.45$, $p = 0.063$, Nagelkerke $R^2 = 0.03$. Suicide literacy was marginally associated with a reduced likelihood of recommending self help or no action to targets (B = -0.09, $p = 0.061$, OR: 0.92).

Step 3 indicated that the addition of the interaction term between target presentation and suicide literacy marginally improved the model, $\chi^2(2) = 5.47$, $p = 0.065$, Nagelkerke $R^2 = 0.05$. One of the interaction vectors was significant (B = -0.25, $p = 0.025$, OR: 0.78). This interaction, consistent with H2, is presented in Figure 4. People with low suicide literacy

recommended self help or no action at comparable levels across all conditions, whereas people with high suicide literacy were less likely to recommend self help or no action specifically when the target reported suicidal ideation.

3.2.3 Recommendations to seek informal social support (H3). Informal social support help seeking was the most common recommendation provided to targets, with 66.9% of participants making this recommendation to a target. A binary logistic regression analysis was conducted to investigate the effects of target presentation and suicide literacy on the likelihood of recommending social support (with the same steps and predictors as for the analyses of professional and self help above).

Step 1 indicated no significant main effect for target presentation, $\chi^2(2) = 2.47$, $p = 0.291$, Nagelkerke $R^2 = 0.01$. This suggested that people were equally likely to recommend social support to targets experiencing subclinical distress, clinical depression, and suicidal ideation.

Step 2 indicated that there was a significant main effect for suicide literacy, $\chi^2(1) = 6.61$, $p = 0.010$, Nagelkerke $R^2 = 0.03$. People with high suicide literacy were more likely to recommend social support (B = 0.13, $p = 0.011$, OR: 1.13).

Step 3 indicated no significant interaction effect, $\chi^2(2) = 0.61$, $p = 0.734$, Nagelkerke $R^2 = 0.04$. The greater tendency for people with high suicide literacy to recommend social support therefore did not differ across target presentations, and this was inconsistent with H3.

3.2.4 Sensitivity analyses. The regression analyses to assess H1, H2, and H3 were also repeated adding to the model the covariates of age, gender, education, depression symptoms, and suicide contact. This analysis conservatively investigated whether the effect of suicide literacy was attributable to one of these other factors. The findings were robust to the addition of these extra control variables, with the same pattern of effects replicated for all the analyses, although these relationships were marginally significant in some cases. The

most important covariate was age, with older participants being more likely to recommend professional help (B = 0.05, $p < 0.001$; OR: 1.05), and less likely to recommend self help or no action (B = -0.02, $p = 0.014$, OR: 0.98) or social support (B = -0.02, $p = 0.029$; OR: 0.98).

3.3 Follow up analysis: Why are people with high suicide literacy less likely to recommend professional help?

To investigate the unexpected finding whereby people high in suicide literacy were less likely to recommend professional help overall, we conducted a follow up moderated mediation analysis. Specifically, we noted (see Table 1) that suicide stigma was positively associated with recommending professional help, and negatively associated with suicide literacy, and hypothesised that therefore stigma might explain the reduced tendency of people with high suicide literacy to recommend professional help to individuals experiencing psychological distress.

The following moderated mediation (see Figure 5) demonstrates this. Specifically, suicide literacy was found to predict reduced professional help recommendations both directly ($\beta = -0.30$, $p < 0.001$), and indirectly via reduced stigma ($\beta = -0.08$, CI: -0.10, -0.03). However, this relationship was only present when the target was non-suicidal. When the target was suicidal, both the indirect and direct paths from suicide literacy to professional help recommendations were non-significant. Although this model was exploratory, in that it was conducted to investigate an unexpected finding, it supports the interpretation that people with high suicide literacy tend to be more hesitant to recommend professional help to others because such recommendations are often driven by, and are associated with, stigma towards suicidal people. However, this tendency disappears when people with high suicide literacy are presented with a suicidal target – presumably because in this circumstance their concern for the target's safety and their belief in the utility of professional help overrode their concern about stigma.

4. Discussion

This study examined how people respond to psychological distress in their social networks by randomly assigning participants to respond to one of three messages which varied in the nature of symptoms described: subclinical distress, clinical depression, or suicide ideation. Overall, participants were more likely to recommend social support and less likely to recommend self help or no action to a close friend, compared to an acquaintance. Participants who considered the target with suicidal ideation tended to believe the target was experiencing more distress, and were generally less likely to recommend self help or no action (compared to targets with subclinical distress or clinical depression).

Unexpectedly, recommendations for professional help were low overall, and negatively (rather than positively) associated with suicide literacy. However, suicide literacy was associated with providing recommendations for support that were more sensitive to a person's circumstances, which was consistent with Hypotheses 1 and 2. Specifically, people with high suicide literacy were more likely to recommend informal social support to targets across all three conditions, and when specifically responding to the suicidal target, were less likely to recommend self help or no action and more likely to recommend professional help than in the other conditions.

The unexpected negative relationship between suicide literacy and recommendations of professional help was further investigated by examining suicide stigma as a possible explanation. Specifically, in this sample, suicide stigma was positively associated with recommendations of professional help to people experiencing psychological distress. This was unexpected, given that suicide stigma has often been reported as a barrier to one's own help seeking (Gulliver et al., 2010). However, it was consistent with findings of Calear and colleagues (2014a), who found that although suicide stigma was associated with less positive attitudes towards help seeking in general, it was *positively* associated with intention to seek help from a psychiatrist or psychologist. We propose that the positive link between stigma and professional help recommendations was because, unlike seeking support for

oneself, recommending to a friend or acquaintance that they seek professional help may be a fraught and challenging social interaction, which may easily be perceived as stigmatising. Indeed, Owen and colleagues (2011) found that *fear of jeopardising their relationship* was often reported as a barrier to recommending professional help among the friends and family of people who had completed suicide. Our finding suggest that people with higher suicide literacy may be more conscious of the stigmatising 'baggage' of a recommendation to seek professional help, and thus more selective about when to make it.

This interpretation was supported by the moderated mediation model, which found that people with high suicide literacy were inhibited in providing recommendations of professional help by their lower suicide stigma, except when the target was suicidal. In other words, when confronted with the warning signs of suicidality, people with higher suicide literacy noticed these signs and were able to overcome their hesitancy to recommend professional help. This tendency also resulted in people with higher suicide literacy making fewer recommendations of self help or no action to suicidal targets.

4. 1 Theoretical and Practical Implications

This is not the first study to find mixed effects of mental health literacy (MHL). For example, an intervention to increase MHL among a sample of people with depression did not affect symptom severity or reported help seeking (Jorm et al., 2003), and another study found that MHL did not predict beliefs about unpredictability and danger of depressed people (Wang and Lai, 2008). One review also found that MHL did not lead to reductions in stigma when education focused on the biological model of mental illness (Schomerus et al., 2012). Similarly, a recent meta-analysis of MHL interventions found that MHL training had no consistent effect on stigma or attitudes towards help seeking, despite more positive attitudes towards providing help to others (Lo et al., in press). This contrasts with a previous review by Hadlaczky and colleagues (2014), which found benefits of MHL for knowledge, stigma, and willingness to help, as well as studies showing other benefits, such as increased willingness to pay for suicide prevention programs (Sueki, 2017). In integrating these contrasting

findings, we suggest that future work evaluating MHL should focus on understanding which aspects of mental health knowledge are helpful in challenging stigma and facilitating help seeking. Furthermore, it will be important to identify what kind of support is actually provided to people experiencing psychological distress, and not simply rely on self-report measures of willingness, confidence, or frequency of support provision.

Efforts to improve MHL, and particularly suicide literacy, show promise in increasing peoples' capacity to distinguish between different types of psychological distress. In this study, suicide literacy was associated with making more recommendations of informal social support, perhaps because of their higher confidence in their capacity to provide such support (Kitchener and Jorm, 2006). It is also the case that drawing on social support has been demonstrated to be an appropriate and evidence-based form of intervention for a wide range of mental health presentations (e.g., Cruwys et al., 2014; Handley et al., 2012; van Orden et al., 2010), and so the fact that MHL led people to make this recommendation more often is promising. When considering a suicidal target specifically, suicide literacy was associated with making greater recommendations for professional help and fewer recommendations for self help or no action.

What was more concerning, however, was the general tendency for people with higher suicide literacy to make fewer recommendations of professional help. This is not consistent with the content of mental health literacy training, where it is common to specifically discuss the social difficulty of recommending professional help and ways to overcome this difficulty (Kitchener and Jorm, 2002). Based on these findings, it seems possible that such discussions may backfire, with people becoming more tentative about recommending professional help due to the perceived social costs (e.g., to their relationship with the person experiencing distress, or because of the stigma associated with seeking professional help). Future research might compare different kinds of MHL training and their impact on the provision of support.

4.2 Strengths and Limitations

The strengths of this study were its large and diverse community sample and its experimental design. Another strength was that this study asked participants to choose what they would actually say to a person experiencing psychological distress, rather than relying on self-report measures of confidence, frequency, or likelihood of providing support – all of which are subject to self-presentational biases. However, the study was not without limitation. Most importantly, suicide literacy was measured rather than manipulated, and so the findings are not directly attributable to the effect of specific MHL programs (e.g., Mental Health First Aid). The unexpected relationships between suicide literacy, suicide stigma, and professional help recommendations would benefit from replication, preferably in an experimental design.

4.3 Conclusions

This study has found that, when confronted with a friend or acquaintance experiencing psychological distress, people are more likely to suggest social support, self help, or no action, rather than professional help. Unexpectedly, suicide literacy was associated with lower odds of recommending professional help overall, a finding which a mediation model suggested was because of the stigma associated with such recommendations. On the other hand, suicide literacy was associated with more appropriate support recommendations specifically to a person reporting suicidal ideation, such that recommendations of professional help increased and recommendations of self help or no action decreased. Suicide literacy also predicted more recommendations of social support across all conditions. The takeaway message is that mental health literacy is not a one-size-fits-all solution, and that the stigma of help seeking remains a significant barrier to people not only accessing, but also recommending, appropriate support to individuals experiencing psychological distress.

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Conflicts of Interest

None.

Table 1. *Descriptive statistics and correlations*

		M	*SD*	Range	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.	Age	29.15	14.89	17-67 years	-										
2.	Gender (male = 1; female = 2)	*Male*	*33.5%*		**-0.31***	-									
		Female	*67.5%*												
3.	Education	*Year 10 or less*	*6.8%*		**0.20***	**-0.20***	-								
		Year 12	*59.4%*												
		Cert or Diploma	*18%*												
		Bachelor degree	*12.4%*												
		Postgrad degree	*3.4%*												
4.	Depression symptoms (PHQ9)	8.36	6.40	0-27	**-0.25***	**0.12***	0.06	-							
5.	Contact with suicide	0.73	0.91	0-3	0.08	0.06	0.00	**0.19***	-						
6.	Suicide stereotypes- stigma	1.77	0.88	1-5	**0.27***	**-0.35***	**0.23***	**-0.10***	**-0.20***	**-**					
7.	Suicide stereotypes - isolated	4.08	0.81	1-5	**-0.16***	0.07	-0.04	0.03	-0.02	-0.06	-				
8.	Suicide stereotypes - normalisation	2.21	0.94	1-5	**0.18***	-0.09	0.08	**0.15***	**0.10***	0.04	**-0.22***	-			
9.	Suicide literacy	7.56	2.31	0-12	**-0.24***	0.06	-0.03	**0.10***	**0.12***	**-0.37***	**0.16***	**-0.15***	-		
Likelihood of recommending:														-	
10.	Professional help	0.18	0.38	0-1	**0.29***	-0.00	**0.10***	-0.05	-0.00	**0.14***	-0.09	**0.18***	**-0.16***		
11.	Self help or no action	0.50	0.50	0-1	**-0.20***	**0.12***	-0.07	**0.12***	-0.06	0.04	0.01	-0.04	-0.10	**-0.23***	-
12.	Social support help	0.67	0.47	0-1	-0.08	-0.04	-0.02	0.03	0.04	**-0.13***	0.04	-0.04	**0.14***	**-0.35***	**-0.36***

Note. $N = 363$. *$p < 0.05$

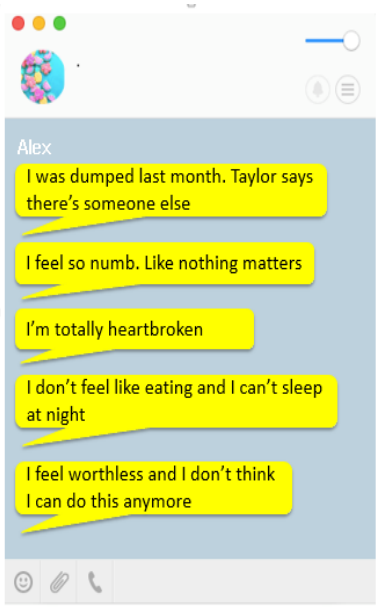

Figure 1. An example of how the information about the target was presented in the context of a social messenger platform (this is the suicidal ideation condition).

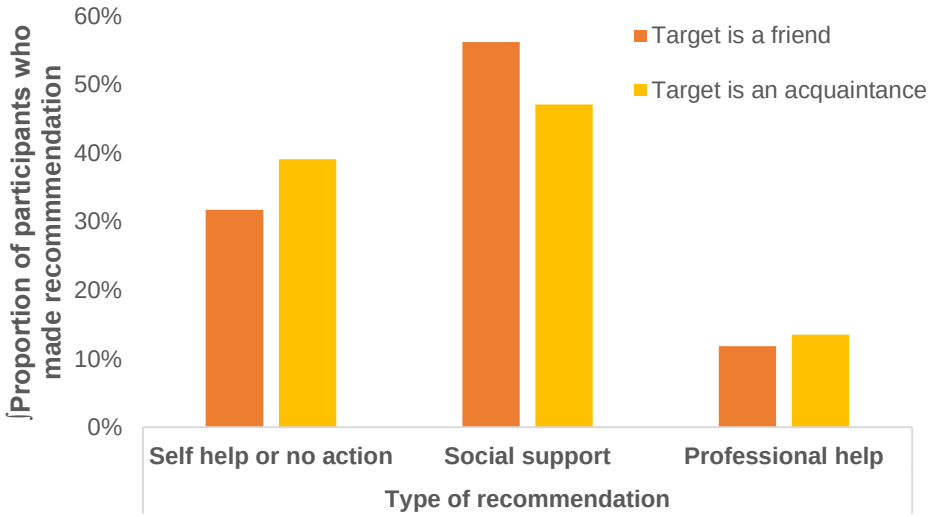

Figure 2. Participants were more likely to recommend social support and less likely to recommend self help or no action to a friend, compared to an acquaintance.

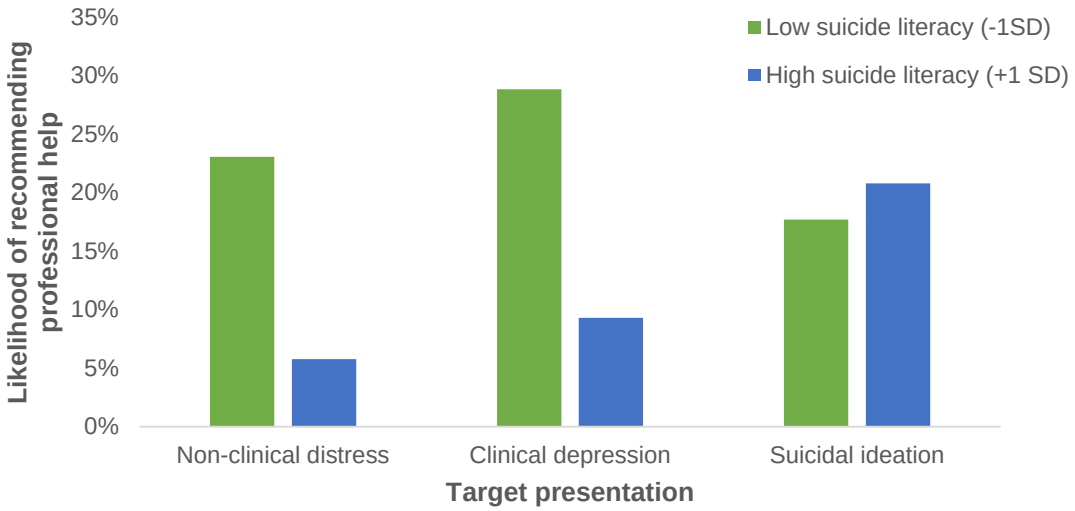

Figure 3. Likelihood of recommending professional help is affected by the interaction of target presentation and participant suicide literacy.

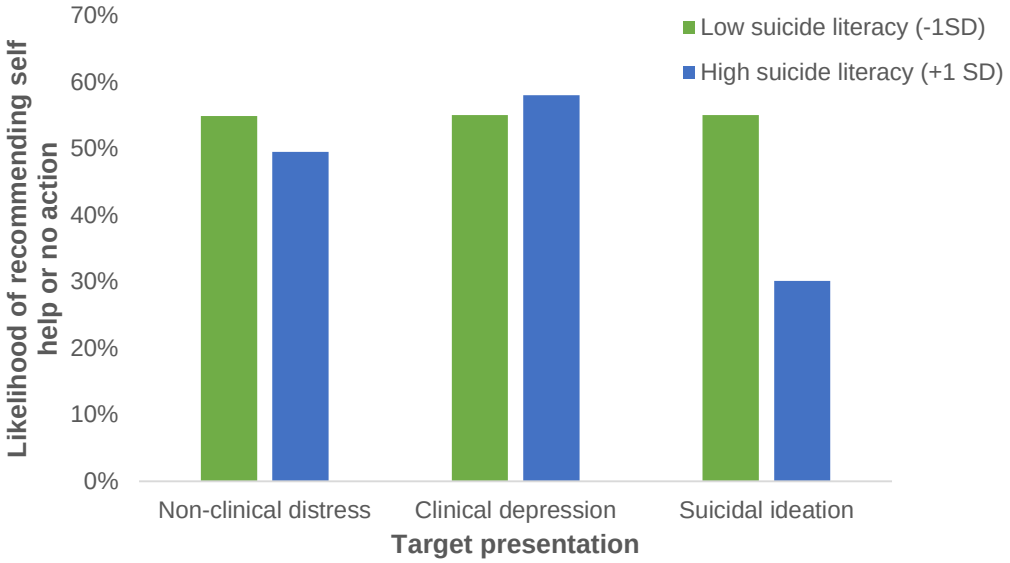

Figure 4. Likelihood of recommending self help or no action was lowest when participants with high suicide literacy considered target with suicidal ideation.

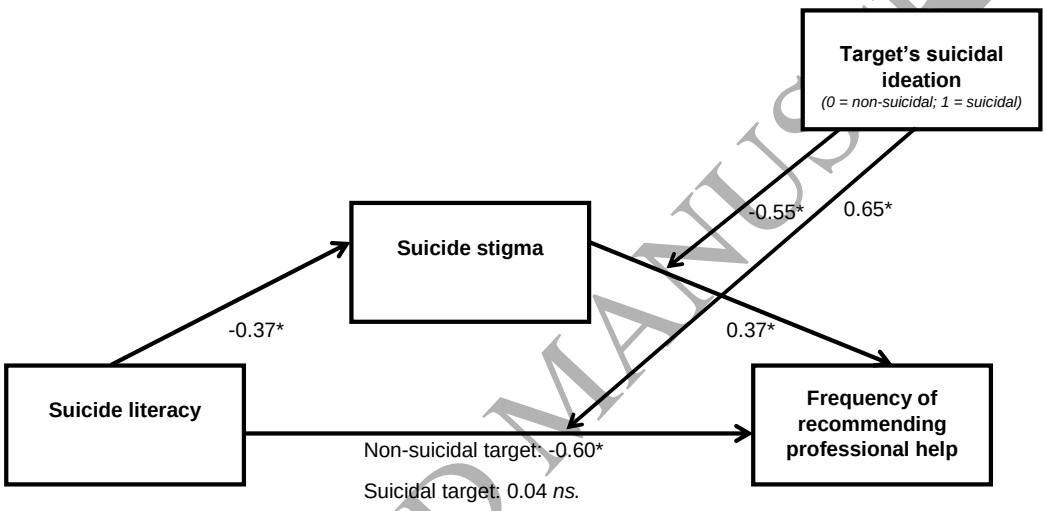

Figure 5. Suicide literacy predicts reduced recommendations to seek professional help indirectly via reduced stigma. However, this is only true when the target is non-suicidal. (Summary of Hayes PROCESS model 15; indirect effects estimated with 2000 bootstrapped samples).

Note. $N = 363$. *$p < 0.05$

Indirect effect of suicide literacy on frequency of recommending professional help is significant when target is non-suicidal: 0.13*, CI: 0.29, -0.01

Indirect effect of suicide literacy on frequency of recommending professional help is non-significant when target is suicidal: 0.07, CI: -0.13, 0.31.

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Footnotes

[1] Several other coding schemes were trialled, including (1) analyzing friend and acquaintance recommendations separately, (2) assigning points based on which position in the ranking system a participant placed each response, and (3) a sum score (0-2) of the first recommendations made to each target. The core results (H1, H2, and H3) were found to be robust across these different calculations and thus the simple binary measure was retained for the main analyses.