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A WEB-BASED DECISION AID TOOL FOR DISCLOSURE OF A MENTAL HEALTH CONDITION IN THE WORKPLACE: A RANDOMISED CONTROLLED TRIAL

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ABSTRACT

Objectives

Making decisions about disclosing a mental illness in the workplace is complicated. Decision aid tools are designed to help an individual make a specific choice. We developed a web-based decision aid (READY) to help inform decisions about disclosure for employees. This study aimed to examine the efficacy of this tool.

Method

We conducted an RCT with recruitment, randomisation and data collection all online. Participants had access to the intervention for two weeks. Assessments occurred at baseline, post-intervention, and six weeks follow up. The primary outcome was decisional conflict. Secondary outcomes were stage and satisfaction of decision-making and mental health symptoms.

Results

107 adult employees were randomised to READY (n=53) or the control (n=54). The sample was predominantly female (83.2%). Participants using READY showed greater reduction in decisional conflict at post-intervention ($F(1,104) =16.8, p = <.001$) ($d=0.49$, CI=0.1-0.9), and
follow-up \(F(1,104) = 23.6, p = <.001\) \((d=0.61, CI=0.1-0.9)\). At post-intervention the READY group were at a later stage of decision making \(F(1,104) = 6.9, p=0.010\) which was sustained, and showed a greater reduction in depressive symptoms \(F(1,104) = 6.5, p=0.013\). 28% of READY users disclosed, and reported a greater improvement in mental health than those who did not disclose.

**Conclusions**

READY provides a confidential, flexible, effective tool to enhance employee’s decision making about disclosure. Its use led to a comparative improvement in depressive symptoms compared to the current information provided by a leading mental health NGO, without apparent harm. READY seems worth evaluating in other settings and, if these results are replicated, scaling for wider use.

**Trial registration number**

(ANZCTR): ACTRN12618000229279.

**Key Messages**

1. What is already known about this subject?
   - Deciding whether or not to disclose a mental illness in the workplace is often complicated, with different considerations for each individual.
   - Often individuals need to disclose their mental illness to receive reasonable adjustments.
   - Decision aid tools are designed to help individuals make a specific and deliberate choice and are widely used to inform decisions about medical treatment options.

2. What are the new findings?
   - This trial demonstrated that READY, the first online disclosure decision aid tool for employees, reduced decisional conflict regarding disclosure of a mental illness compared to the provision of standard information about disclosure and its consequence.
   - Use of the program resulted in people being at a later stage of decision making, being more satisfied with their decision and less depressed at follow up, with no indication of psychological harm.

3. How might this impact on policy or clinical practice in the foreseeable future?
   - READY provides a confidential, flexible, effective online tool to enable employees to make an informed decision about which disclosure option is best for them.
   - The decision aid allows individuals to consider an active disclosure before an event occurs, allowing employees to take control of their decision-making.
INTRODUCTION
Deciding whether or not to disclose a mental illness in the workplace is often complicated, with individualised considerations [1]. Within the workplace context, disclosure is defined as the process in which an employee informs their employer of their disability [2]. Under many countries’ equalities legislation, individuals need to disclose to receive reasonable adjustments [3].

Interpersonal factors such as discrimination and stigma can affect employee’s disclosure decision-making [4]. Employers prefer potential employees make disclosures during recruitment [5] despite consistent evidence showing that employees may be seen as less employable [6]. As a result, employees fear discrimination [7], worry about being a burden on others, being seen as weak [8], or not being hired or promoted [9]. A recent Australian survey found that over half of those who had experienced discrimination report not being hired because of their mental illness [10], and a global survey showed that employees were reluctant to disclose out of fear of job loss [11]. Employees who had disclosed reported limited knowledge of symptoms, stigma and discrimination, limited managerial support, and perceived negative consequences were barriers to their disclosure [12].

The literature on disclosing mental health conditions in the workplace has often focussed on the outcomes or predictors [13], rather than the process. Whether to disclose at all, how much to disclose (partial or full), and whom to disclose to, draws on three identified styles of selective, indiscriminant, or broadcasting disclosure [14]. The timing is important as concealment itself can be a major stressor [15], and sometimes, a forced decision may be precipitated by symptom severity or impairment [6]. A recent study [16] indicated that employees generally start from a position of non-disclosure, often only moving to a position of disclosure when symptoms are no longer concealable.

Decision aid tools are designed to help individuals make a specific and deliberate choice, and are widely used to facilitate decisions about medical treatment options. A systematic review showed that decision aids for people facing treatment or screening decisions produced less decisional conflict, higher knowledge, a more active role in decision-making, and increased risk perception [17]. In the mental health context, the CORAL RCT [18] showed a paper-
based decision aid tool for people with a severe mental illness in secondary care services reduced disclosure decisional conflict when seeking employment and tangible employment benefits.

We developed a web-based decision aid tool (READY) to help facilitate disclosure decisions for individuals in current employment. This study aimed to examine the efficacy of READY in reducing decisional conflict, the primary outcome, compared to the online disclosure information provided by a leading mental health charity, at post-intervention and six weeks follow up. Secondary outcomes were the effect on the stage and satisfaction of decision-making and mental health.

METHODS

Design
A parallel arm randomised controlled trial (RCT) was conducted. Participants had open access to READY or online disclosure information for two weeks. Assessments occurred at baseline, post-intervention, and six weeks post-baseline.

Recruitment, randomisation, and data collection were all internet-based.

Participants
The target population was employed adults, any gender, aged 18 to 65 years, with a self-identified mental health condition, who had not previously disclosed mental ill-health to their current employer.

Participants were excluded if they did not have access to reliable Internet, a valid email address, or if they reported poor English fluency.

This study was approved by the University of Sydney Ethics Review Board: 2017/740, and registered in the Australian New Zealand Clinical Trials Registry (ANZCTR): ACTRN12618000229279.
Recruitment, Informed Consent and Randomisation

Recruitment occurred between 8th November 2017 and 25th February 2018 through many channels: emails to people on a mental health research register, a pop up in a mental health treatment App (HeadGear), and via Facebook advertisements. These invited people to visit the study website.

The website provided an online version of the participant information statement and consent form, which was available for download. After completing the informed consent process online, participants completed the baseline questionnaires (socio-demographic, outcome and moderator measures) on the study website before being randomised. Automatic computerised randomisation was triggered within the website when eligible participants completed the baseline assessment. The allocation was set at a 1 to 1 ratio, and the procedure allowed for full replication.

Intervention

The content of READY was developed in an iterative fashion based upon currently available disclosure materials [18] and guided by an international expert group. The content of READY was tested in focus groups with employees who had disclosed mental ill-health in the workplace and key occupational decision makers [12] to identify influencing factors. The wording of the tool scored a Flesch-Kincaid Grade level of 6.6, which is understandable by the average 11 year old [19].

The final program (READY) was based around seven self-guided modules which enabled the user to consider potential consequences of (non)disclosure, weighing advantages and obstacles, their needs and values, timing and process of disclosing while reflecting on past disclosures, and providing the user with an interactive summary their responses. Each module was designed to take approximately five to ten minutes to complete. The program was carefully worded to avoid promoting any specific decision as the “correct” one. Users needed to complete each interactive module to be able to move to the next module. Multiple logins were available.

Control condition
The control group were given access to a visually similar website with four modules that contained information about disclosure rights and responsibilities, laws, and legislation based on content from the HeadsUp website, an Australian website aimed at workers with mental health conditions, hosted by the country’s largest mental health NGO, beyondblue. This website has been publicly available since 2014, and a recent international review of guidelines that manage workplace mental health conditions highly rated the website for quality and comprehension [20], and it was awarded the Best Online Learning and Education Resource at the Digital Industry Association of Australia Awards 2014 with 146,000 unique views within the first year [21]. Permission was obtained to use the content from the HeadsUp website. Users again had to complete each module to be able to move to the next.


Program procedures
Following allocation, the program (READY or Control) was available to the participant for two weeks. If no login took place within four days of randomisation, an automated reminder email was sent, followed by a phone call two days later by the lead researcher. Participants received the post-intervention questions when they finished their final module, or at two weeks after allocation. They completed the online follow-up questionnaires four weeks later. Participants who did not complete online follow up and had provided contact details were called once by the lead researcher to complete these over the phone.

Measures

Socio-demographic measures
Participants self-reported demographic information: gender, age, relationship status, and indigenous background.

Study-specific questions measured the participant’s workplace relationships such as, “Do you feel you have a good relationship with your boss” with dichotomous “Yes or No” answers. Workplace sector was assessed by asking participants to select from 15 options. Participants self-reported diagnosed mental health conditions with multiple options provided and a
provision of a free text box. We classified schizophrenia and bipolar as “severe mental disorder” and all others as “common mental disorder”.

Primary Outcome Measure

The primary outcome was change in decisional conflict post-intervention. Decisional conflict was measured using the 10-item Decisional Conflict Scale Low Literacy version (DCS) [22] (α=.86), measuring self-reported uncertainty, the level that they feel informed, clarity of values, whether they feel supported and effective decision-making. Participants responded: Yes = 0, Unsure = 2, and No = 4 on a Likert scale to each question, the scores were summed and transformed into a 0-100 scale as per the user manual, (no decisional conflict =0, extremely high decisional conflict =100).

Secondary Outcome Measures

Stage of Decision Making (SDM), a five-question scale to measure individual readiness to engage in decision making [23]. Participants selected their stage of decision making from “I have not yet thought about the options” = 0 to “I have already told my employer” = 5.

Decisional dissatisfaction was measured with two items stating “do you expect to stick with your decision?” and “are you satisfied with your decision?” with responses ranging from Yes = 0, Unsure = 2, and No = 4 on a Likert scale.

Stress was measured using the Perceived Stress Scale (PSS-10) (α=.91) [24]. Total scores range from 0 to 40, those scoring over 20 were considered “highly stressed”.

Depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9) [25] (α=.84) as a continuous variable, and “depression” was defined using the standard cut point (≥11). The presence of suicidal ideation was assessed with question 9 (no vs. any).

Potential Moderators

Discrimination and stigma over the last 12 months were measured with the Discrimination and Stigma Scale (DISC-12) [26], comprised 32 questions, rated on a four-point Likert scale.
An overall score was generated using a binary score for each item, with higher values indicating greater experience of stigma and discrimination [27].

Bullying was measured with one question from the Negative Acts Questionnaire-Revised (NAQ-R) (α=.90), [28]: “Have you been bullied at work?” along with a definition, then coded into Yes=1, No=0.

Resilience was measured with the six-item Brief Resilience Scale (BRS) [29] (α=.86), assessing the ability to bounce back or recover from stress. Those scoring over 15 were considered to have low resilience.

**Sample Size**

The sample size was based on the effect size in the CORAL study [18] which had a between-group effect size of hedge’s $g= 0.69$ (95% CI 0.21 to 1.17, $p=0.005$) for mean difference in change in decisional conflict. A sample of 34 per arm would give 80% power to detect a smaller 0.4 effect size, allowing for a potential drop-out rate of 33% [30], the target sample size was 46 participants per condition.

**Statistical Analysis**

All data were analysed with SPSS version 24.0. Adequacy of randomisation was assessed by comparing baseline characteristics of the intervention and control groups using t-tests for continuous and Chi-squared for binary measures. Attrition was assessed comparing the post-intervention characteristics of the dropouts and the completers to determine any apparent differences.

Primary analyses were undertaken on an intention-to-treat basis, including all eligible participants randomised. Last Observation Carried Forward (LOCF) was used to handle the missing data, providing a conservative estimate of treatment effect if data are missing at random (MAR).

The main analysis of efficacy compared READY and the control on outcome measures at post-intervention and follow-up using between-subjects analysis of covariance (ANCOVA) with baseline scores as covariates. Cohen’s $d$ with 95% confidence intervals (CIs) was
calculated by comparing the change in means of READY and the control at each time point. According to Cohen, \( d=0.2 \) can be considered small, \( d=0.5 \) a medium effect and \( d=0.8 \) a large effect [31].

Univariate effects of the intervention and control and their interaction with baseline mental health and workplace factors were examined using between-subjects ANCOVAs adjusting for the relevant baseline variables (i.e., discrimination).

Univariate effects of the program groups and the interaction of severe mental disorders and common mental disorders on primary and secondary outcome measures were examined using between-subject ANOVAs.

Finally, the number of participants that disclosed (based on the SDM questionnaire) in each arm was reported along with any association with change in depression or stress scores at 6-week follow up.

**Results**

A total of 177 individuals completed online screening for eligibility. Of those, 56 (31.6%) were excluded, primarily because they had already disclosed their mental health condition in their workplace (n=46). A further 14 did not complete the baseline assessment, leaving 107 participants randomised. The study flow is illustrated in Figure 1.

**Figure 1. Consort Flow of Participants.**

The average age of the participants was 34.3 (SD=12.1) years. The sample was predominately female (83.2%), not married (61.7%), not of Aboriginal or Torres Strait Islander descent (97.2%). Many were employed in a social and community services industry (30.8%). The majority reported having a good relationship with their boss (71.0%) and colleagues (81.3%). One quarter had experienced discrimination when at work (27.1%), and 72% anticipated discrimination at work. Almost half (41.1%) had experienced bullying. Most participants had low resilience (61.7%), were depressed (\( \geq 11 \) on PHQ-9) (71.0%) and highly stressed (\( > 20 \) on PSS-10) (84.1%) and had a diagnosed common mental health disorder
(74.8%) (Table 1). There were no baseline differences between the intervention and active control arms (Table 1).

There were no differences between the intervention and control in decisional conflict, decisional dissatisfaction, stage of decision making or stress scores at baseline although the intervention group had higher levels of depressive symptoms (Table 2).

Table 1. Baseline Characteristics overall and by Intervention type

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>All participants (n=107)</th>
<th>READY (n = 53)</th>
<th>Control (n=54)</th>
<th>difference between groups t-test or $x^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-demographic Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, m (SD)</td>
<td>34.3 (12.1)</td>
<td>34.2 (11.7)</td>
<td>34.4 (12.6)</td>
<td>$p = 0.926$</td>
</tr>
<tr>
<td>Gender (Male), n (%)</td>
<td>18 (16.8)</td>
<td>10 (18.9)</td>
<td>8 (14.8)</td>
<td>$p = 0.533$</td>
</tr>
<tr>
<td>Married or de facto n (%)</td>
<td>41 (38.3)</td>
<td>22 (41.5)</td>
<td>19 (35.2)</td>
<td>$p = 0.547$</td>
</tr>
<tr>
<td>Aboriginal, n (%)</td>
<td>3 (2.8)</td>
<td>2 (3.8)</td>
<td>1 (1.9)</td>
<td>$p = 0.501$</td>
</tr>
<tr>
<td><strong>Work Sector</strong></td>
<td></td>
<td></td>
<td></td>
<td>$p = 0.527$</td>
</tr>
<tr>
<td>Social &amp; community services, n (%)</td>
<td>33 (30.8)</td>
<td>15 (28.3)</td>
<td>18 (33.3)</td>
<td></td>
</tr>
<tr>
<td>Service &amp; manufacturing, n (%)</td>
<td>15 (14.0)</td>
<td>6 (11.3)</td>
<td>9 (16.7)</td>
<td></td>
</tr>
<tr>
<td>Healthcare &amp; emergency services, n (%)</td>
<td>19 (17.8)</td>
<td>7 (13.2)</td>
<td>12 (22.2)</td>
<td></td>
</tr>
<tr>
<td>Economy, IT &amp; trade, n (%)</td>
<td>16 (15.0)</td>
<td>10 (18.9)</td>
<td>6 (11.1)</td>
<td></td>
</tr>
<tr>
<td>Hospitality, n (%)</td>
<td>10 (9.3)</td>
<td>7 (13.2)</td>
<td>3 (5.6)</td>
<td></td>
</tr>
<tr>
<td>Other government agencies, n (%)</td>
<td>14 (13.1)</td>
<td>8 (15.1)</td>
<td>6 (11.1)</td>
<td></td>
</tr>
<tr>
<td><strong>Workplace Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Relationship with boss, n (%)</td>
<td>76 (71.0)</td>
<td>35 (66.0)</td>
<td>41 (75.9)</td>
<td>$p = 0.260$</td>
</tr>
<tr>
<td>Good Relationship with colleagues, n (%)</td>
<td>87 (81.3)</td>
<td>45 (84.9)</td>
<td>42 (77.8)</td>
<td>$p = 0.344$</td>
</tr>
<tr>
<td>Experienced discrimination, (%)</td>
<td>29 (27.1)</td>
<td>14 (26.4)</td>
<td>15 (27.8)</td>
<td>$p = 0.874$</td>
</tr>
<tr>
<td>Anticipated discrimination, n (%)</td>
<td>77 (72.0)</td>
<td>41 (75.9)</td>
<td>36 (67.9)</td>
<td>$p = 0.357$</td>
</tr>
<tr>
<td>Experienced workplace bullying, n (%)</td>
<td>44 (41.1)</td>
<td>21 (39.6)</td>
<td>23 (42.6)</td>
<td>$p = 0.755$</td>
</tr>
<tr>
<td><strong>Mental Health Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Resilience, n (%)</td>
<td>66 (61.7)</td>
<td>31 (58.5)</td>
<td>35 (64.8)</td>
<td>$p = 0.554$</td>
</tr>
<tr>
<td>Depression, n (%)</td>
<td>76 (71.0)</td>
<td>40 (75.5)</td>
<td>36 (66.7)</td>
<td>$p = 0.395$</td>
</tr>
<tr>
<td>High Stress, n (%)</td>
<td>90 (84.1)</td>
<td>43 (81.1)</td>
<td>47 (87.0)</td>
<td>$p = 0.403$</td>
</tr>
<tr>
<td><strong>Self-reported Diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
<td>$p = 0.868$</td>
</tr>
<tr>
<td>Common Mental Disorders</td>
<td>80 (74.8)</td>
<td>40 (75.5)</td>
<td>40 (74.1)</td>
<td></td>
</tr>
<tr>
<td>Severe Mental Disorders</td>
<td>27 (25.2)</td>
<td>13 (24.5)</td>
<td>14 (25.9)</td>
<td></td>
</tr>
</tbody>
</table>

Footnote: Severe mental disorder: schizophrenia, bipolar, psychosis. Common mental disorder: – all other diagnoses
Overall, 24 (22.4%) of participants at post-intervention, and 62 (57.9%) at follow-up did not provide outcome data, with no differential attrition between the control group (post-intervention n=42, follow-up n=20) and READY (post-intervention n=41, follow-up n=25). Twenty-six participants completed the outcome data over the phone, 15 from the intervention group, and 11 from the control group, the remaining participants completing the self-assessment online. There was no association of any of the baseline characteristics with the completeness of data, supporting the MAR assumption for the LOCF analysis.

Of the 53 who started the READY program, 49 (92.5%) attempted at least one module, and 25 (47.2%) completed all seven modules. On average participants in the intervention group completed 3.9 (SD=3.2) modules. 51 (94.4%) of the control arm attempted at least one module, and 48 (88.9%) completed all of the four modules. On average, the control group completed 3.7 (SD=1.1) modules.

**Primary Outcome – Decisional Conflict**

Participants in the READY arm showed greater reduction in decisional conflict at post-intervention \(F(1,104) =16.8, p = .001\), which was sustained at follow up \(F(1,104) =23.6, p = .001\) compared to the control arm. Moderate between arm effect sizes were observed at post-intervention \((d=0.49, CI=0.1-0.9)\) and at follow-up \((d=0.61, CI=0.2-1.0)\) (Table 2, and Figure 2).
Table 2. Change in decision, stress and depression measures throughout the trial (ITT sample n=107)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>READY (n=53)</th>
<th>Control (n=54)</th>
<th>ANCOVA* F(1,104)</th>
<th>Cohen's d (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Decisional Conflict</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>59.1 (25.4)</td>
<td>67.6 (21.1)</td>
<td>-</td>
<td>-</td>
<td>0.061</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>-28.9 (30.9)</td>
<td>-15.5 (23.6)</td>
<td>16.84</td>
<td>0.49 (0.10-0.87)</td>
<td>0.000**</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-32.5 (30.8)</td>
<td>-15.7 (23.9)</td>
<td>23.59</td>
<td>0.61 (0.22-1.00)</td>
<td>0.000**</td>
</tr>
<tr>
<td><strong>Secondary Decision Dissatisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>4.3 (1.5)</td>
<td>3.7 (2.1)</td>
<td>-</td>
<td>-</td>
<td>0.144</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>0.0 (1.3)</td>
<td>0.4 (2.1)</td>
<td>0.40</td>
<td>0.23 (-0.15-0.61)</td>
<td>0.531</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-2.1 (2.6)</td>
<td>0.0 (2.8)</td>
<td>7.52</td>
<td>0.78 (0.38-1.17)</td>
<td>0.008*</td>
</tr>
<tr>
<td><strong>Stage of Decision Making</strong></td>
<td></td>
<td></td>
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<tr>
<td>Baseline</td>
<td>1.8 (0.8)</td>
<td>1.7 (0.7)</td>
<td>-</td>
<td>-</td>
<td>0.642</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>0.7 (1.0)</td>
<td>0.3 (0.9)</td>
<td>6.88</td>
<td>0.42 (0.03-0.80)</td>
<td>0.010*</td>
</tr>
<tr>
<td>Follow-up</td>
<td>1.2 (1.3)</td>
<td>0.3 (0.9)</td>
<td>23.59</td>
<td>0.81 (0.41-1.20)</td>
<td>0.000**</td>
</tr>
<tr>
<td><strong>Depression (PHQ-9)</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>16.4 (7.3)</td>
<td>13.6 (5.7)</td>
<td>-</td>
<td>-</td>
<td>0.034*</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>-0.5 (4.3)</td>
<td>0.6 (2.9)</td>
<td>1.10</td>
<td>0.29 (-0.08-0.68)</td>
<td>0.297</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-1.9 (5.0)</td>
<td>0.7 (3.6)</td>
<td>6.46</td>
<td>0.59 (0.21-0.98)</td>
<td>0.013*</td>
</tr>
<tr>
<td><strong>Stress (PSS-10)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>25.3 (6.6)</td>
<td>23.9 (5.0)</td>
<td>-</td>
<td>-</td>
<td>0.208</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>-0.4 (2.8)</td>
<td>0.5 (1.9)</td>
<td>2.53</td>
<td>0.38 (-0.01-0.76)</td>
<td>0.115</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-1.1 (3.9)</td>
<td>-0.1 (3.0)</td>
<td>1.34</td>
<td>0.29 (-0.09-0.67)</td>
<td>0.250</td>
</tr>
</tbody>
</table>

Footnote: measures are reported as LOCF=Last Observation Carried Forward, m=mean, SD=Standard Deviation, ANCOVA= Analysis of Covariance, a= controlling for baseline scores, ITT=Intention to Treat, PHQ-9=Patient Health Questionnaire-9, PSS-10=Perceived Stress Scale, *=<0.05, **=<0.001, Post-Intervention=immediately post intervention use, Follow-up=six-weeks post baseline.

Figure 2. Mean and standard errors in decisional conflict over the course of the trial

Secondary Outcomes

At post-intervention, the READY group were at a later stage of decision making than the control group \((F(1,104) =6.9, p=0.010)\) with a moderate effect size of \((d=0.42, CI=0.3-0.8)\).

This effect increased at follow-up \((F(1,104) =23.6, p=<.001)\) with a large effect \((d=0.81, CI=0.4-1.2)\). Decisional dissatisfaction was also reduced in the intervention arm (relative to control) at follow-up \((F(1,104) =7.5, p=0.008)\) with a large effect \((d=0.78, CI=0.4-1.2)\).

Depression (PHQ-9) scores were reduced in the intervention arm compared to the control
\(F(1,104) = 6.5, p = 0.013\) with a moderate effect \((d = 0.59, CI = 0.2-1.0)\) at follow-up, but not immediately post-intervention. There was no effect on stress (Table 2 and Sup Figure 1).

**Supplementary Figure 1. Mean and standard errors in secondary outcome scores at all time points**

There was greater decisional conflict at baseline in those who were highly stressed, those who had experienced bullying, had a bad relationship with their boss, or a bad relationship with their colleagues but this was not associated with depression, low resilience, anticipated or experienced discrimination at baseline. The comparative efficacy of READY was increased in those with low resilience (resilience \(X\) arm interaction) \(F(3,103) = 4.4, p = 0.038\).

There was no interaction between common or severe mental disorders and program arm efficacy on any outcome measures.

**Impact of Using READY**

Of the completers who provided follow-up data \((n=25\) intervention and \(n=20\) in control figure 1), seven \((28\%)\) of the READY group disclosed their condition and none in the control arm. As disclosure was only seen in those who used READY the results below only consider the intervention group. Disclosure was associated with a greater reduction in both depression and stress than non-disclosure (Table 3).

**Table 3. Change in Depression and Stress scores at follow-up in disclosed vs. non-disclosed in those who used READY**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Disclosed (n=7)</th>
<th>Non-disclosure (n=18)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>m (SD)</td>
<td>m (SD)</td>
<td>m (95% CI)</td>
</tr>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression (PHQ-9)</td>
<td>19.3 (5.6)</td>
<td>15.2 (8.1)</td>
<td>4.1 (-2.8 – 11.0)</td>
</tr>
<tr>
<td>Stress (PSS-10)</td>
<td>26.4 (4.4)</td>
<td>24.3 (7.2)</td>
<td>2.2 (-3.9 – 8.2)</td>
</tr>
<tr>
<td><strong>Follow-up Change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression (PHQ-9)</td>
<td>-8.5 (5.4)</td>
<td>-3.5 (2.3)</td>
<td>5.0 (0.5 – 9.5)</td>
</tr>
<tr>
<td>Stress (PSS-10)</td>
<td>-9.8 (3.3)</td>
<td>-3.2 (2.2)</td>
<td>6.6 (2.6 – 10.6)</td>
</tr>
</tbody>
</table>

Footnote: \(m=\)mean, \(SD=\)Standard Deviation, \(PHQ-9=\)Patient Health Questionnaire-9, \(PSS-10=\)Perceived Stress Scale, \(*=<0.05, \)Follow-up=six-weeks post baseline.
DISCUSSION

This trial demonstrated that READY, the first online decision aid tool for employees, significantly reduced decisional conflict regarding disclosure of a mental health condition compared to a provision of standard information and that this was sustained at follow up. Use of the program resulted in people being at a later stage of decision making, being more satisfied with their decision and less depressed at follow up, indicating no psychological harm. These results are consistent with previous research on the effectiveness of providing decision aid tools for health-related decisions [32].

The efficacy of READY was unaffected by whether participants had a common or severe mental disorder. This finding is interesting, given that those with severe mental illness’ often have additional factors to consider such as higher rates of unemployment, underemployment, poorer vocational outcomes and negative societal stereotypes [33, 34] suggesting that disclosure decision-making options may be more difficult.

Although the tool was not developed to lead to one particular decision, be it disclosure or not, one-quarter of those using READY who completed follow-up measures decided to disclose, whereas none of those in the control arm did. Of those who disclosed, 86% reported satisfaction with this decision. While READY facilitated the disclosure decision, seemingly low rates of actual disclosure were reported. We have no idea of what the optimum disclosure rate is given all of the known barriers and we observed no disclosure in the control arm. This suggests that a decision aid tool may facilitate the decision, but cannot address all barriers to disclosure, such as workplace support or culture. The low rates may also have been due to the short follow-up period of six weeks. We might have seen a higher rate of disclosure if participants had adequate time to meet with their managers to disclose formally.

There was a significant reduction in depression and stress in those who disclosed compared to those who didn’t. Although only seen in a small sample, this suggests two possible inferences. First, deciding to disclose might reduce depression and stress symptoms in employees, and accords with a recent Australian survey that showed that receiving support when disclosing is more common than expected [35]. Second, participants who recovered
from their depression then decided to disclose. The latter may be less likely as the disclosure has been reported as more common when individuals are experiencing greater symptoms [36, 37] or when there is a need [16], and less common when they display fewer symptoms [38].

The level of resilience influenced the impact of READY on decisional conflict, suggesting that those who have low resilience may benefit the most from a structured online decision aid tool.

Surprisingly, discrimination was not associated with higher decisional conflict scores at entry, nor did they induce differential decreases in decisional conflict, contradicting previous research from CORAL [18].

**Strengths and limitations**

This study had several strengths. The online decision aid tool was co-created with experts and end users and compared with an active control. Being a completely online intervention, READY maximises confidentiality which was previously reported as a barrier to disclosure [12]. The literacy requirements of the tool were set at an appropriate level as some disclosure information is legalistic and requires high levels of literacy. For instance, the information provided from the NGO's website in the control arm had a reading age of 17.7 years, this may have enhanced the comparative efficacy of READY [39].

This study had some limitations. Although attrition was low for an internet-delivered intervention [30], we used a conservative analytic method (LOCF) that likely underestimated any effects. Women and those working in social and community services were over-represented, potentially limiting generalisability of the results. However, not surprising as higher participation and interest from women is not uncommon when help-seeking for mental health conditions [40]. Lastly, the lead researcher conducted reminder phone calls to participants, possibly affected blinding, although randomisation arm was not visible.

**Implications and future directions**

READY reduced decisional conflict and facilitated decision making among employees. There was no indication that the tool led to harm. Future studies should evaluate the long-term
effectiveness, and potential adaptation for culturally and linguistically diverse workplaces, in younger working adults and male-dominated workplaces.
Funding

This study was developed in partnership with beyondblue with donations from the Movember Foundation.

Declaration of Interests

ES, NG, SBH, RAC & IC all received funding by beyondblue and Movember Foundation via a grant to run this study. CH & IH have none.

Author Contribution

ES, NG, CH & SBH contributed the conception and design of the work. ES, IC & NG completed the analyses and interpretation of the data and initial draft of this work. All authors revised the work critically, added to the interpretation of the data and added important intellectual content and reviewed the final draft.
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