

## Online Cognitive Behavioural Therapy Training for Therapists: Outcomes, Acceptability, and Impact of Support

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The objectives of the present study were to assess the effects of online cognitive behavioural therapy (CBT) training for therapists on measures of CBT knowledge, skills, confidence, and utilisation; to determine what differences might exist between a group supported by regular telephone contact and an independent group who undertook online training without additional support; and to determine the acceptability of CBT online training among rural and remote mental health professionals. Mental health practitioners were randomly allocated to a supported training group (six sessions of 15-min support) or an independent group. They undertook a 12-week online CBT training program. The two groups showed similar gains on an objective test of knowledge of CBT, and on self-report measures of knowledge, skills, confidence levels, and utilisation of skills. However, the supported training group had a significantly higher program completion rate than the independent group. Participants evaluated the program favourably. The results suggest that online CBT training represents a promising and cost-effective approach to training the mental health workforce, and may be particularly attractive for those who live in regional, rural, and remote communities. A challenge is to determine the most cost-effective ways to enhance program completion rates and trainee skills.

**Key words:** CBT training; online CBT training; psychotherapy training; rural workforce; therapist skill development; therapist training.

### What is already known on this topic

- 1 Cognitive behavioural therapy (CBT) has established itself as a leading evidence-based psychological therapy, with a considerable literature supporting its efficacy, particularly for anxiety disorders and depression.
- 2 The evidence base for the effectiveness of CBT therapist training has lagged behind the treatment literature.
- 3 Online CBT training represents a promising approach to training therapists, particularly those who live in rural and remote regions, and have difficulty accessing training. The evidence base for the effectiveness of online CBT training is currently small.

### What this paper adds

- 1 This study contributes to a small but growing literature suggesting that online CBT training can make a positive difference to CBT knowledge, skills, and confidence.
- 2 Providing a minimal level of human support to trainees (15 min every fortnight for six sessions) appears to increase program completion rates.
- 3 It is suggested that online CBT training is an important addition to enhancing the capacity to train CBT therapists, particularly those who live in rural and remote communities. However, for best results, it probably needs to be blended with other forms of learning.

## Introduction

Cognitive behavioural therapy (CBT) has established itself as a leading evidence-based psychological therapy, with a considerable literature supporting its efficacy, particularly for anxiety disorders and depression (Butler, Chapman, Forman, & Beck, 2006; Tolin, 2010). CBT has been endorsed by governments and peak mental health organisations internationally. It is a treatment of choice for the Australian government-funded Better Access program (Department of Health and Ageing, 2011), and is endorsed by the Royal Australian and New Zealand College of

Psychiatrists clinical practice guidelines (Royal Australian and New Zealand College of Psychiatrists Clinical Practice Guidelines Team for Depression, 2004). In the UK, the National Institute of Clinical Excellence (NICE) guidelines recommend CBT as a front-line intervention for both anxiety disorders and depression (NICE, 2009, 2011).

The evidence base for the effectiveness of CBT therapist training has lagged behind the treatment literature. There are few evidence-based guidelines for deciding how to design a training program (Beidas & Kendall, 2010; Herschell, Kolko, Baumann, & Davis, 2010; Rakovshik & McManus, 2010; Sholomskas et al., 2005), and only recently have researchers started to ask: What types of training are most effective for training which skills (Bennett-Levy, 2006; Bennett-Levy, McManus, Westling, & Fennell, 2009; Bennett-Levy et al., 2001), in which people (Westbrook, Sedgwick-Taylor, Bennett-Levy, Butler, & McManus, 2008), with what type of support (Mannix et al., 2006), under which conditions (Cucciare, Weingardt, & Villafranca, 2008), and in what

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combinations of training strategies (Bennett-Levy et al., 2009; Cucciare et al., 2008)?

Although clinical psychology training in Australia includes an emphasis on CBT (Kazantzis & Munro, 2011), those providers of psychological therapy who are not clinical psychology graduates may have had little opportunity to do formal training in CBT. Hence, there is clearly a need to find effective ways to disseminate CBT to the wider Australian mental health workforce. This need is most acute in rural communities (Bennett-Levy & Perry, 2009; Ellis & Philip, 2010) where cost, distance, and access to training and supervision are limiting factors. For instance, data from the government's Better Access program indicate that rural therapists tend to be less well qualified (Department of Health and Ageing, 2008). Rural services can also experience considerable difficulty recruiting and retaining mental health staff (Buykx, Humphreys, Wakeman, & Pashen, 2010). Furthermore, there are significantly higher suicide rates in rural/remote regions, suggesting that rural practitioners may often have to deal with severe mental health problems (Kilkkinen et al., 2007). One strategy to address the above problems is to provide better training and supervision for rural practitioners (Kowalenko, Bartik, Whitefield, & Wignall, 2003; Stagnitti, Shoo, Reid, & Dunbar, 2005). Distance learning (Hills, Robinson, Kelly, & Heathcote, 2010), including online CBT training (Bennett-Levy & Perry, 2009; Weingardt, Cucciare, Bellotti, & Lai, 2009), can make a significant contribution to this goal.

Recognition of the need for online CBT training in Australia is evident from the provision in 2011 of a CBT fundamentals online training program developed by the Australian Psychological Society (APS), in conjunction with Occupational Therapy Australia and the Australian Association of Social Workers. This 10-hr, ten module program has been made available to a large number of participants. It currently awaits evaluation.

Over the last decade, online learning has become one of the fastest growing developments in professional education and training (Means, Toyama, Murphy, Bakia, & Jones, 2010). Despite this, the evidence base for the value of online CBT training has been confined to a handful of overseas studies (Dimeff et al., 2009; Granpeesheh et al., 2010; Sholomskas et al., 2005; Silverman & Kurtines, 2004; Weingardt et al., 2009; Weingardt, Villafranca, & Levin, 2006; Westbrook, McManus, Clark, & Bennett-Levy, 2012). These studies show participants making gains in knowledge, skills, and confidence. In one study, online training was shown to be more effective than the provision of training manuals without further support, and as effective as a face-to-face workshop (Sholomskas et al., 2005). Some of the pedagogical advantages of online training include standardisation of content; access at any time, any place, and any pace; availability of demonstrations of therapy by experienced clinicians in greater depth than can be achieved in workshops; and the ability to access online content repeatedly to reinforce learning (Bennett-Levy & Perry, 2009; Dimeff et al., 2009).

The present study is the first Australian study to evaluate the acceptability and outcomes of online CBT training. Here, we report Phase I of a two-phase study. The focus of our research program is how best to maximise the effectiveness of

online training. There were three major aims for the present study:

- 1 To assess the effects of online training on an objective measure of CBT knowledge and on self-report measures of knowledge, skills, confidence, and utilisation.
- 2 To determine what differences might exist between a group supported by regular telephone or Skype contact and an independent group left to manage without additional support. By analogy with the online therapy literature with patients, where guided self-help tends to produce better outcomes and greater completion compared with unguided self-help (Klein & Proudfoot, 2010; Titov, Andrews, Choi, Schencke, & Johnston, 2009), one of the prime purposes was to investigate whether brief human support might produce better outcomes than "unguided" online training. Previous studies of online training have not examined this issue.
- 3 To determine the acceptability of CBT online training among Australian mental health professionals.

Our hypotheses, derived from previous online CBT training (Sholomskas et al., 2005; Weingardt et al., 2009; Westbrook et al., 2012) and online therapy studies (Klein & Proudfoot, 2010; Titov et al., 2009), were the following:

*Hypothesis 1.* The provision of online CBT training will result in improvement in CBT knowledge in all trainees (both groups), and self-reported changes in ratings of knowledge and skills in action, confidence levels, and the number of CBT skills utilised.

*Hypothesis 2.* Compared with the independent group, the supported training group will show greater enhancement in knowledge, skills, confidence, and utilisation of CBT skills, and be more likely to complete the program.

*Hypothesis 3.* The program will be acceptable to both groups.

## Materials and Methods

### Recruitment, Screening, and Selection of Participants

Participants for the study were recruited via advertisements and flyers in professional journals, and via information about the online research posted on the University Centre for Rural Health's CBT website (<http://www.cbtraining.com.au>).

The following selection criteria were applied:

- 1 Currently practicing in a counselling role, with at least 1-year experience in a counsellor and/or mental health role;
- 2 Having a relevant degree (psychology, social work, counselling, medicine) or be completing a degree (e.g., employed as counsellor and in final year of a social work degree), and/or having appropriate professional qualifications (e.g., nursing);
- 3 Having a broadband connection (min 5 mbps);
- 4 Having facilities to use Skype (or phone, if necessary) for supported training sessions;
- 5 Having the time and workplace support to do the course; and
- 6 Priority for selection into the study was given to applicants living in regional, rural, and remote Australia, as grant funding conditions of the Department of Health and Ageing. Figure 1 flow chart illustrates the recruitment and selection process.

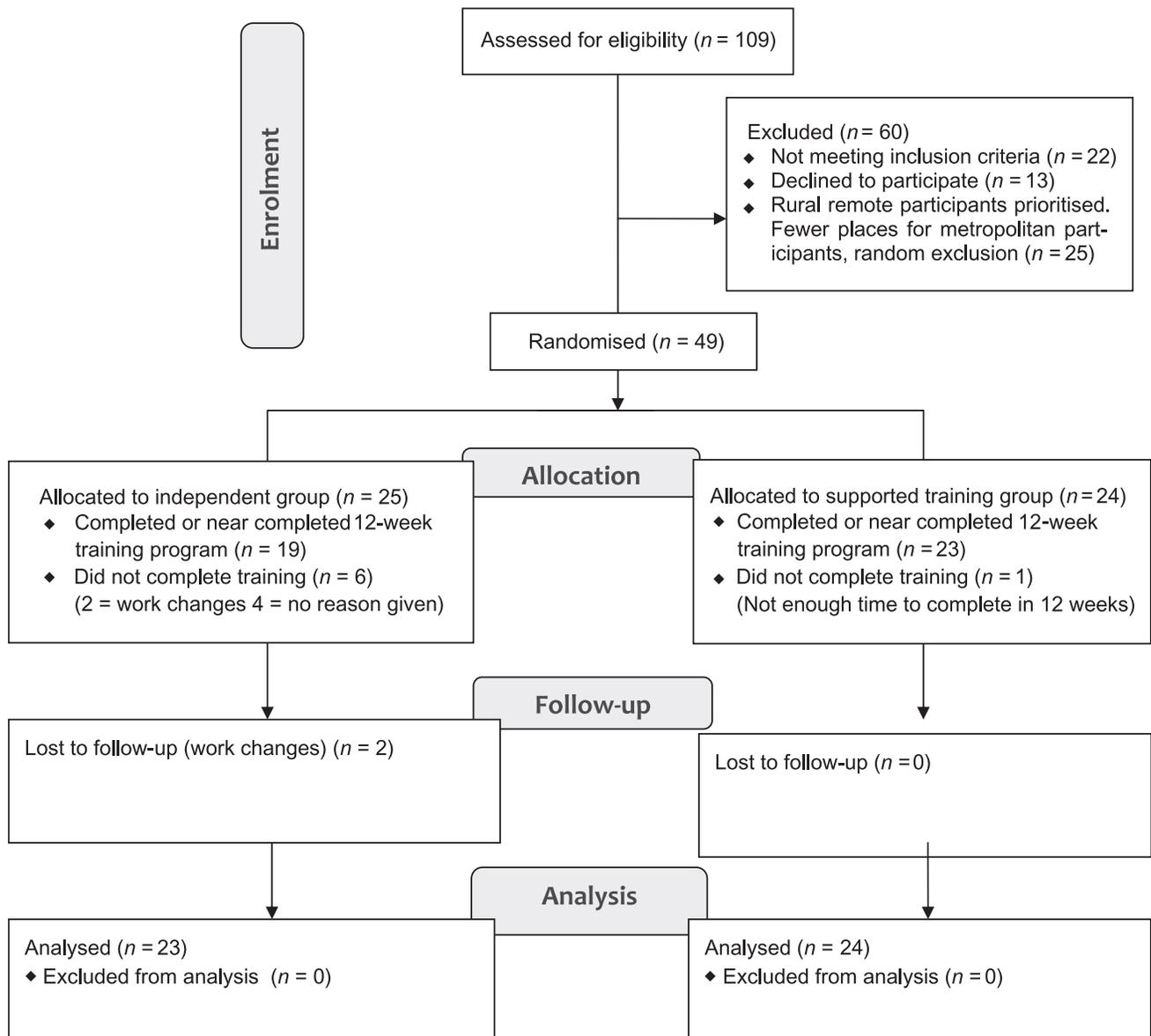


Figure 1 Flow Chart for Trainee Selection.

**Participant Characteristics**

Participant characteristics are listed in Table 1. There were no significant differences between groups on any of the key variables (age, gender, location, profession, and previous CBT training).

**Study Design**

To determine whether brief support made a difference to online training completion rates and to objective and self-reported outcome measures, a supported training group was compared with an independent (training-as-usual) group. There was random allocation to groups (no stratification by age or gender). Supported training was modelled on “low intensity guided self-

help” for Internet-based therapy (Klein & Proudfoot, 2010; Lovell, 2010; Titov et al., 2009). It constituted a minimal intervention: 15 min a fortnight delivered six times by telephone or Skype over the 12-week period (90 min total). The primary purpose of supported training was to keep trainees on track, to provide encouragement, to problem-solve any difficulties with the program, and to answer any questions about CBT that arose in the program. A clear distinction was made between supported training and supervision. Clinical supervision was not provided, and specific cases were not discussed.

**Procedures**

The study was approved by the University of Sydney Ethics committee in June 2010 (Protocol No. 12891).

**Table 1** Participant Characteristics

|  | Supported training group (n = 24) | Independent group (n = 25) |
|--|-----------------------------------|----------------------------|
| Gender   |                                   |                            |
| Female   | 20                                | 20                         |
| Male   | 4                                 | 5                          |
| Age  |                                   |                            |
| Mean (standard deviation)                                    | 46.2 (10.7)                       | 45.6 (10.2)                |
| Location (population)  |                                   |                            |
| Small rural towns (< 10,000)                                 | 3                                 | 7                          |
| Rural towns (10–49,999)                                      | 8                                 | 7                          |
| Regional centres (50,000+)                                   | 6                                 | 5                          |
| State capital cities   | 7                                 | 6                          |
| Professional Background                                      |                                   |                            |
| Psychologist   | 12                                | 15                         |
| Social worker  | 7                                 | 5                          |
| Nurse  | 1                                 | 3                          |
| Counsellor   | 4                                 | 1                          |
| Doctor   | 0                                 | 1                          |
| Attended any previous cognitive behavioural therapy training | 13                                | 14                         |

### Online training

Participants were given access to *PRAXIS CBT for Common Mental Health Problems* (<http://www.praxiscbtonline.co.uk>), an online CBT training program developed in the UK by Northumberland Tyne and Wear NHS Trust, and accredited by Newcastle University, UK.

PRAXIS is a structured, step-by-step introductory online CBT program. It features 30 modules that typically take 30–60 min each to complete. These are focused on CBT skills in the context of depression, panic disorder, agoraphobia, and generalised anxiety disorder. PRAXIS is text- and video-based, and uses several illustrative case examples and quizzes. A key element is regular video demonstrations by experienced therapists. Learners progress through the course at their own pace, whether in the work or home setting.

Participants were given access to PRAXIS for \$440 (a \$200 discount) for 12 weeks for the purposes of the research, and were then given online access for a further 8 months once all the outcome and follow-up questionnaires had been collected.

### Supported training group

Fifteen-minute support sessions for the 24 supported training group trainees were provided by the third author (HP), an experienced clinical psychologist with extensive CBT experience. Sessions were scheduled every 2 weeks. Most took the full 15 min. Thirteen participants received their support through telephone, and 11 via Skype. Skype was the recommended medium for support, but a number of participants were not allowed to access Skype at work. A total of 133 support sessions were conducted (average 5.5 sessions); some participants finished the program before the sixth session, others were ill and missed one session. Explicit guidelines for supported training were developed and documented, one for trainers and another

for trainees. These guidelines reinforced that the purpose of supported training was to support participants' progress with PRAXIS and to address any CBT or IT questions. Case supervision was not provided.

### Measures

The study used the following measures:

#### 1 Completion Rates

PRAXIS CBT automatically logs the modules that participants complete; hence, it was possible to determine completion rates. On the basis of these data, participants were divided into four groups: completers, near-completers, non-completers, and dropouts. Completers completed the entire program (40/49 trainees); near-completers (2/49) completed more than 70% of the modules; non-completers completed less than 50% of the modules (5/49); and dropouts did not start the program (2/49).

#### 2 Cognitive Behavioural Therapy Questionnaire (CBT-Q)

The CBT-Q is a 20-item, multiple choice questionnaire assessing CBT knowledge, adapted from a previously developed CBT knowledge questionnaire (Myles, Latham, & Ricketts, 2003).

#### 3 CBT Knowledge Questionnaire

#### 4 CBT Skills Questionnaire

#### 5 CBT Confidence Questionnaire

Questionnaires 3, 4, and 5 were specifically developed by the authors to provide a comprehensive list of CBT formulation and skills-based questions that could accurately reflect participants' learning from PRAXIS. Therefore, no normative data were available. The 27 questions were a tailor-made adaptation and extension of a 13-item, self-report CBT skills questionnaire previously developed by one of the authors (Bennett-Levy & Beedie, 2007). Participants were required to rate their conceptual knowledge of the item (self-rated CBT knowledge), their skills-in-action (self-rated CBT skills), and their self-rated confidence for each of the 27 items. For example, the skills scale asked participants to rate their level of skills-in-action for the following:

Qu.5. Socialising/educating a client into the cognitive model;

Qu.10. Creating an agreed problem list;

Qu.15. Using Socratic questioning in your therapeutic work;

Qu.20. Using behavioural methods (exposure, behavioural experiments); and

Qu.25. Using relapse prevention strategies.

#### 6 CBT Skills Utilisation Questionnaire

Participants were asked whether they had used the 27 skills in any of their last five sessions with clients. Yes or No responses were required.

#### 7 PRAXIS Feedback Questionnaire

Participants were asked to rate their experience of the program and to provide qualitative feedback about its strengths and weaknesses. Participants in the supported training group were also asked to rate their experience of supported training, and to add any comments they might have.

The CBT-Q and the self-rated measures were administered on three occasions: in the week before starting the program, in the week after the end of the program, and at 4-week follow-up.

The PRAXIS Feedback Questionnaire was administered once in the week following the program.

## Results

Table 2 shows the mean scores on the test of CBT knowledge (the CBT-Q), and self-ratings of conceptual knowledge, skills-in-action, confidence, and utilisation of CBT skills over the three assessments. There were two significant differences in the pre-training measures favouring the independent group, which had higher confidence levels pre-training (means: supported group = 4.45, independent group = 5.37;  $t = 2.7$ ,  $df = 45$ ,  $p = .01$ ) and higher pre-training CBT utilisation scores (means: supported group = 12.79, independent group = 15.08;  $t = 2.2$ ,  $df = 47$ ,  $p = .04$ ). There were no significant differences in any of the measures at post-training and at 4-week follow-up.

Table 3 reports the one-way repeated measures analyses of variance, which demonstrate significant changes over time on all five performance measures (all significant at  $p < .001$ ). Participants in both groups improved their performance scores from pre-program to post-program and follow-up. The only significant group by time interaction occurred for the confidence measure. The supported training group started from a slightly lower base than the independent group to achieve similar (improved) confidence levels after training (for means, see Table 2)  $F(1.57, 65.96) = 4.32$ ,  $p = .025$ .

To determine whether program completion was higher in the supported training group compared with the independent group, completion data were combined to form two groups: completers + near-completers ( $n = 42$ ) versus dropped out + completed little ( $n = 7$ ). The supported training group was more likely to finish or very nearly finish (96%) than the independent group (76%) ( $\chi^2 = 3.93$ ,  $df = 1$ ,  $p < .05$ ).

**Table 2** Mean Scores and SD for the Supported Training and Independent Groups on Measures of CBT Knowledge, Skills, Confidence, and Utilisation of CBT at Pre-program Assessment, Post-program Assessment and 4-Week F/U

| Measure                | Supported training group |           | Independent group |           | <i>t</i> -test— <i>df</i> in brackets, and significance | Effect size ( <i>r</i> ) |
|------------------------|--------------------------|-----------|-------------------|-----------|---|--------------------------|
|                        | <i>M</i>                 | <i>SD</i> | <i>M</i>          | <i>SD</i> |   |                          |
| CBT-Q (Knowledge) Pre  | 9.75                     | 2.92      | 11.04             | 2.76      | $t = 1.6$ (47), <i>ns</i>                               | 0.23                     |
| CBT-Q (Knowledge) Post | 12.92                    | 2.78      | 13.35             | 3.02      | $t = 0.5$ (45), <i>ns</i>                               | 0.07                     |
| CBT-Q (Knowledge) F/U  | 12.71                    | 2.48      | 12.96             | 2.89      | $t = 0.3$ (45), <i>ns</i>                               | 0.04                     |
| Knowledge pre          | 4.48                     | 1.65      | 5.20              | 1.30      | $t = 1.6$ (42), <i>ns</i>                               | 0.24                     |
| Knowledge post         | 6.85                     | 1.12      | 7.20              | 0.99      | $t = 1.1$ (43), <i>ns</i>                               | 0.17                     |
| Knowledge F/U          | 7.20                     | 1.02      | 7.57              | 1.20      | $t = 1.1$ (43), <i>ns</i>                               | 0.17                     |
| Skills pre             | 4.23                     | 1.55      | 4.66              | 1.20      | $t = 1.0$ (42), <i>ns</i>                               | 0.15                     |
| Skills post            | 6.17                     | 1.39      | 6.42              | 0.87      | $t = 0.7$ (43), <i>ns</i>                               | 0.11                     |
| Skills F/U             | 6.60                     | 1.24      | 7.13              | 1.19      | $t = 1.5$ (43), <i>ns</i>                               | 0.22                     |
| Confidence pre         | 4.45                     | 1.32      | 5.37              | 1.04      | $t = 2.7$ (45), $p = .01$                               | 0.37                     |
| Confidence post        | 6.62                     | 1.19      | 6.88              | 1.01      | $t = 0.8$ (43), <i>ns</i>                               | 0.04                     |
| Confidence F/U         | 6.90                     | 1.03      | 7.20              | 1.19      | $t = 0.9$ (44), <i>ns</i>                               | 0.13                     |
| Utilisation of CBT pre | 12.79                    | 3.48      | 15.08             | 3.87      | $t = 2.2$ (47), $p = .04$                               | 0.31                     |
| Utilisation post       | 17.96                    | 4.77      | 16.56             | 6.35      | $t = 0.9$ (47), <i>ns</i>                               | 0.13                     |
| Utilisation F/U        | 18.13                    | 6.79      | 18.20             | 6.85      | $t = .04$ (47), <i>ns</i>                               | 0.01                     |

Note. *SD* = standard deviation; CBT = cognitive behavioural therapy; CBT-Q = Cognitive Behavioural Therapy Questionnaire; F/U = follow-up.

**Table 3** Repeated Measures General Linear Model ANOVA results comparing performance measures over time and between groups

| Measure                     | <i>df</i> model | <i>df</i> residual | <i>F</i> | <i>p</i> | Partial <i>Eta</i> -squared |
|-----------------------------|-----------------|--------------------|----------|----------|-----------------------------|
| CBT-Q (time)                | 1.97            | 88.79              | 32.3     | .000     | .459                        |
| CBT-Q (time by group)       | 1.97            | 88.78              | 2.1      | .121     | .069                        |
| Knowledge (time)            | 1.59            | 60.39              | 104.9    | .000     | .770                        |
| Knowledge (time by group)   | 1.59            | 60.39              | 0.5      | .567     | .013                        |
| Skills (time)               | 1.75            | 66.62              | 109.6    | .000     | .791                        |
| Skills (time by group)      | 1.75            | 66.62              | 0.2      | .780     | .004                        |
| Confidence (time)           | 1.57            | 65.96              | 175.4    | .000     | .828                        |
| Confidence (time by group)  | 1.57            | 65.96              | 4.3      | .025     | .097                        |
| Utilisation (time)          | 1.67            | 78.47              | 12.1     | .000     | .259                        |
| Utilisation (time by group) | 1.67            | 78.47              | 2.1      | .136     | .023                        |

ANOVA = analysis of variance; CBT-Q = Cognitive Behavioural Therapy Questionnaire.

**Table 4** Acceptability of Online Training. Percentage of Respondents Who Endorsed Either Agree (A) or Strongly Agree (SA) (or Disagree (D) + Strongly Disagree (SD) for Negatively Worded Items) on a 5-point Likert—Like Agreement Scale ( $n = 49$ )

| Program satisfaction items                                    | Overall % | Independent group % | Supported group % |
|---|-----------|---------------------|-------------------|
| 1. PRAXIS CBT was easy to use.                                | 96        | 96                  | 96                |
| 2. The information was well laid out.                         | 89        | 83                  | 95                |
| 3. It was easy to move from one section/part to another.      | 92        | 91                  | 92                |
| 4. The information was at too low a level (D + SD).           | 72        | 83                  | 63                |
| 5. The information was at too high a level (D + SD).          | 92        | 91                  | 92                |
| 6. The exercises were at too low a level (D + SD).            | 87        | 70                  | 54                |
| 7. The exercises were at too high a level (D + SD).           | 83        | 83                  | 83                |
| 8. The explanations were clear.                               | 98        | 96                  | 100               |
| 9. The video examples were of good quality.                   | 89        | 83                  | 96                |
| 10. There were enough examples.                               | 87        | 96                  | 79                |
| 11. The method of delivery encouraged engagement in learning. | 85        | 87                  | 83                |
| 12. I would recommend PRAXIS to a colleague.                  | 92        | 87                  | 96                |
| 13. The program met my needs.                                 | 83        | 74                  | 92                |

Note. Chi-square analyses showed that there were no significant differences in satisfaction ratings between the supported training group and the independent group.

Since the validity of self-report measures is sometimes questioned, the study's self-report data were correlated with the CBT-Q, an objective test of CBT knowledge. The CBT-Q was significantly correlated both with self-reported conceptual knowledge ( $r = .31, p < .05$ ) and confidence ( $r = .48, p < .001$ ). The associations between the CBT-Q and self-rated skills and utilisation of CBT, while positive, did not attain statistical significance.

Program characteristics, including the program design and content, proved highly acceptable to a large majority of participants who were very likely to recommend the program to others (see Table 4). The value of the 15-min support sessions was almost unanimously endorsed by the supported training group. Most of the independent group reported that they would have liked this option.

## Discussion

To our knowledge, this is the first study of online therapist training in the literature to compare different levels of support for the delivery of online CBT training. An independent learning group (online training-as-usual) was compared with a supported group who received 15 min of trainer support every 2 weeks (90 min total).

Online training was associated with significant improvements in performance. Both the independent group and the supported training group conditions led to statistically significant gains in CBT knowledge, and self-reported gains in knowledge, skills, confidence, and utilisation of CBT immediately after the program and at 4-week follow-up. Thus, Hypothesis 1 which predicted performance improvements in all participants was supported.

There were significant differences between the independent group and the supported training group in program completion rates. Whereas around a quarter (6/25) of the independent group failed to complete the program, only 4% (1/24) of the

supported training group failed to complete/near complete. There was no difference between the groups in gains in knowledge, skills, and confidence, apart from a small interaction effect on the confidence measure at immediate post-training, which appears to have been a function of the supported training group starting from a significantly lower confidence level at pre-training. Hypothesis 2 was, therefore, partially supported. The supported training group had better completion rates but did not show greater gains on the outcome measures.

The online CBT training program was rated as highly acceptable by trainees; Hypothesis 3 was, therefore, supported.

The results of this study suggest the value of supported online facilities for providing ready access to training in evidence-based therapies for the rural and remote health workforce, a group who have historically had fewer opportunities for this type of professional development (Bennett-Levy & Perry, 2009). Online CBT training can be supplied at a fraction of the cost of its face-to-face equivalent. Greater access for rural and remote practitioners may contribute to better mental health outcomes for rural residents.

A major implication of our study arises from the impact of support on completion rates for online training. This mirrors the observation that support or guidance improves motivation and engagement for patients accessing online therapy (Klein & Proudfoot, 2010). Although our sample is relatively small, previous online therapist training studies have found non-completion rates around 25%, similar to our independent group (Dimeff *et al.*, 2009; Weingardt *et al.*, 2009). Just as support or guidance appears to result in enhanced outcomes for patients in online therapy, the results of the present study, which resulted in just one non-completer (4%) in the supported training group, suggest the value of adding support for CBT trainees.

For Australia, there are immediate practical implications, particularly with respect to large-scale programs such as the federally funded roll-out of the APS CBT online training program,

which has so far provided online CBT training for up to 4,000 mental health professionals. Significant non-completion rates over such large participant numbers would incur substantial cost-efficiency penalties, suggesting that data on ways of enhancing completion rates are worth obtaining. If individualised support makes such a significant difference in program completion rates, should this be provided? At what cost? What are the effects of other strategies to enhance completion rates, such as the award of continuing professional development points by the APS, or compulsory participation in discussion forums?

Importantly, the supported training group in our study received a particular model of support that was (1) quite minimal, (2) regular, (3) provided by an experienced CBT therapist, and (4) was definitely not clinical supervision. At this stage, we do not know which of these factors are critical. Does the level of experience of the “supporter” matter? Would the provision of clinical supervision further enhance the impact of online training, as we might predict from previous research (Milne, 2009)? How important is the human element? Could regular automated support (e.g., reminder emails every 2 weeks) be enough?

Another important issue for trainers and researchers to consider is that, despite the self-reported increase in therapist skills in the present study, there are several reasons to suggest that the impact of online training on CBT *skills* is likely to be more limited than for CBT *knowledge*. Training theory makes a clear distinction between declarative knowledge (facts, information) and procedural skills (skills-in-action) (Bennett-Levy, 2006; Bennett-Levy & Thwaites, 2007). It is suggested that declarative knowledge can easily be acquired through reading, lectures, and modelling (Bennett-Levy et al., 2009); however, skill development requires the opportunity to practice skills in role plays, in supervision, or by trying them out on oneself (Bennett-Levy, 2006; Bennett-Levy et al., 2009; Fairburn & Cooper, 2011; Mannix et al., 2006; Milne, 1982; Sholomskas et al., 2005). Hence, studies that have demonstrated CBT training effectiveness routinely include role play and supervision as core components of their programs (Mannix et al., 2006; Simons et al., 2010; Westbrook et al., 2008).

Although the online therapy training literature is relatively sparse, we suggest that the current generation of online therapy training, which lacks two-way interactivity and the opportunity for “live” skills practice and feedback, is valuable for building knowledge and confidence, but may have limitations for skills development without further opportunity for practice and supervision. “First generation” online training is probably best embedded within a blended learning approach (Cucciare et al., 2008). Blended learning models may involve the addition of face-to-face workshops and/or clinical supervision, which have been shown to enhance the impact of online training (Sholomskas et al., 2005).

Looking to the future, advances in web-based technologies mean that it may soon be possible to offer “second generation” online CBT training: real-time “live” online training with video demonstrations, online breakout rooms, and capacity to view trainee role plays at distance. Potentially, rural and remote practitioners could come together in virtual environments to share a variety of CBT training experiences in what have become

known as “online communities of practice” (Wenger, White, & Smith, 2009). This could lead to radical new models of therapist training where distance is no object and where the knowledge/skills gap of “first generation online training” can be traversed.

The present study has been the first study designed to start mapping the parameters of effective support for online training. It has several limitations. First, it may be that the study was underpowered, and that with a larger sample size, differences between groups on the performance outcome measures might have been evident. Second, it would clearly be desirable to measure actual skills, rather than rely on self-report. Although there is evidence from this and other studies (Bennett-Levy & Beedie, 2007) that self-report correlates positively with objective performance measures, some authors have questioned the validity of self-reports, especially among novice trainees (Brosan, Reynolds, & Moore, 2008). Third, in the absence of suitable self-report measures in the literature, the questionnaires used in our study were specifically designed to assess learning from PRAXIS. At the present time, there are no psychometric or normative data available for these questionnaires. This is a limitation of the study since we cannot know whether comparable changes might have been found in test–retest data for groups of naïve—or highly trained—therapists. Future research should aim to standardise self-report measures of CBT competency.

Future studies should focus on identifying the parameters of support effects, ranging from low-cost “scaffolding” options such as automated supported and moderated discussion forums, to high-cost options such as clinical supervision, in order to determine the most cost-effective model. Future studies should also address how online programs can be most effectively blended with other modes of training (Cucciare et al., 2008; Fairburn & Cooper, 2011), including “second generation” live online training and Internet-based communities of practice.

In summary, the main findings from this study are that online training represents a promising and cost-effective approach to training the mental health workforce, and may be particularly attractive for those who live in regional, rural, and remote communities. The type of support offered can crucially affect completion rates, and therefore the cost-effectiveness of training. Providing minimal but regular input from one experienced psychologist proved to be cost-effective given the increased completion rates of the supported group. We need to determine the most cost-effective ways to offer online training in order to enhance program completion rates and trainee skills in the provision of evidence-based interventions.

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