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Patient reported self-help strategies and the perceived benefits for managing sub-threshold depressive symptoms: a nested qualitative study of Australian primary care attendees

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Ethical approval

Ethical approval was granted from the University's Human Research Ethics Committee (ID1543648).

Competing interests

We declare we have no conflicts of interest.

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Data availability

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Authors' contributions

JG, SD and AKT conceived the study and led on development of the protocol and study documents with support from SF and VJP. AKT conducted data collection. All authors were involved in analysis and writing, and all authors approved the final publication.

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Patient reported self-help strategies and the perceived benefits for managing subthreshold depressive symptoms: a nested qualitative study of Australian primary care attendees

Abstract

Background

Subthreshold depression is common in primary care, but there is little information about the self-help strategies that patients use and the perceived benefits of these.

Aim

This study sought to elicit the self-help strategies that primary care attendees identified as beneficial for the self-management of subthreshold depressive symptoms and the implications for general practitioners.

Method

Semi-structured telephone interviews were conducted with 14 people (April-May 2017) from the Target-D randomized controlled trial (RCT). Target-D investigated whether using a patient-centred clinical prediction tool and an e-health platform to match mental health management options to prognosis was beneficial for improving depressive symptoms at 3 months compared to usual care. Interviews were thematically analysed to identify self-help strategies and their perceived benefits.

Results

Four overarching domains for the self-management strategies were identified: social, cognitive, behavioural and restorative. Interviewees reported using strategies across multiple domains, which included undertaking enjoyable, immersive activities, that provided relief from automatic negative thoughts and had a perceived cognitive benefit. Differences in perceived sense of

1 agency were noted around the self-regulation of mood, which indicated more explicit direction to
2 patient-identified self-help management strategies by general practitioners for some may be of
3 benefit in routine care.

4 **Conclusion**

5 Some of the reported self-management strategies aligned with evidence-based approaches such
6 as physical activity and mindfulness for symptom management. These findings can inform low
7 intensity interventions within stepped care models for mental health in primary care, social
8 prescribing models and, help to guide the management of patients by GPs for subthreshold
9 depression.

10

11

12 **Keywords**

13 Self-help strategies, self-management, subthreshold depressive symptoms, patient reported
14 outcomes, primary care, stepped care, mental health

15

16 **What is known about this topic?**

17 *Subthreshold depression is common in primary care attendees.

18 * Stepped care models for mental health advocate for the right level of treatment and
19 management matched to the severity of needs.

20 * It remains somewhat unclear if, how and when, a GP should intervene with people with
21 subthreshold depressive symptoms in primary care.

22 **What this paper adds?**

23 *Patients reported beneficial self-help strategies to self-manage mood related symptoms across
24 four domains: social, physical, cognitive and restorative.

25 *The most commonly employed self-help strategies were those within the social and physical
26 domains. This indicates that GPs could adopt simple and effective patient reported self-help
27 management strategies to provide additional care for people who are identified as meeting the
28 criteria of subthreshold depressive symptoms.

29 *Despite these reported self-management strategies and their benefits, there is a limited evidence
30 base for the effectiveness of self-help management strategies for subthreshold depressive
31 symptoms.

32

33

1 **Introduction**

2 Primary care systems globally face the challenge of how to allocate resources to deliver
3 clinically and cost-effective care for improvements to mental health outcomes. In conjunction
4 with this, there is the need to ensure that these resources are tailored for individuals in terms of
5 their goals, preferences and needs. Person-centred, tailored management approaches are at the
6 forefront of health systems more generally, and such approaches are relevant to the effective
7 implementation of stepped care approaches, collaborative care and other community-based
8 mental health care models (Department of Health, 2015; van Straten, Hill, Richards, & Cuijpers,
9 2015). However, the implementation of stepped care models that encompass supportive tools for
10 general practitioners to identify mental health needs and provide matched interventions and
11 management approaches, is complicated by contextual and systems factors. This includes
12 evidence-based gaps in rigorously designed and tested e-health platforms that facilitate needs
13 identification and matched management options, and adequate attention to the socio-technical
14 integration issues into practice settings.

15 An additional factor is the ability to detect clinically significant differences from interventions in
16 subthreshold populations. One recent web-based guided self-help intervention (employing
17 cognitive behavioural therapy and problem solving therapy) delivered at the population level
18 reported good effect for prevention of major depression disorder (MDD) in people with
19 subthreshold depression (Buntrock et al., 2016). Another trial testing the efficacy of
20 collaborative care for subthreshold depression in people aged 65 years and older showed
21 significant differences at four months (Gilbody et al., 2017). These studies indicate that care for
22 subthreshold depression is important to consider.

23 In the primary care setting, depression is particularly prevalent (Herrman et al., 2002) and it is
24 defined by marked heterogeneity, differences in explanatory models for causes and the
25 subsequent treatment and management options (Kokanovic et al., 2013). For a large proportion
26 of people, the symptoms experienced do not meet the diagnostic criteria for depression which
27 leaves many people falling into what is termed subthreshold depression (Rodriguez, Nuevo,
28 Chatterji, & Ayuso-Mateos, 2012; Rucci et al., 2003; Vuorilehto, Melartin, & Isomets, 2005).
29 Subthreshold depression is usually defined by someone receiving a score between 5-9 on the
30 Patient Health Questionnaire 9 (PHQ-9) and is also referred to in the literature as experiencing
31 mild depressive symptoms (Kroenke, Spitzer, & Williams, 2001). The cutoffs for depression
32 categories include mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20-27)

1 and these have been widely adopted in primary care settings. A PHQ-9 score of 10 and above
2 has been shown to have good specificity and sensitivity for major depression (Ell et al., 2008;
3 Littlewood et al., 2015), while Kroenke (2001) reported that scoring 0-4 on PHQ-9 indicated
4 minimal to no symptoms and a <1/25 chance of developing further depression. Therefore, a
5 PHQ9 score of 5-9 can be reasonably used to indicate that an individual has subthreshold
6 depression.

7 Prevalence estimates of subthreshold depression in primary care do vary depending on the
8 definition applied (from 1% to 17% in the community and 3% to 10% in primary care settings)
9 (Rodriguez et al., 2012). Some evidence indicates that subthreshold depression is approximately
10 twice as common as major depressive disorder (Goldney, Fisher, Dal Grande, & Taylor, 2004;
11 Rucci et al., 2003), which has a lifetime prevalence of 2-21% worldwide with higher rates
12 documented in European countries (Gutiérrez-Rojas, Porrás-Segovia, Dunne, Andrade-González,
13 & Cervilla, 2020). Subthreshold depression is associated with functional impairment, reduced
14 quality of life, and an increased risk of future major depression (Davidson et al., 2015; Judd et
15 al., 1998; Lee et al., 2019). People experiencing subthreshold depression have been identified as
16 frequent attenders to primary care, and they account for between 10% to 35% of a general
17 practitioner's (GP's) workload (Wagner et al., 2000; Wong et al., 2018), people in this group
18 also have reported more days out of work than people without depressive symptoms (Pietrzak et
19 al., 2013; Wagner et al., 2000).

20

21 Currently international guidelines for best practice management of subthreshold depression such
22 as those from the National Institute of Clinical Excellence (NICE UK), suggest that with active
23 monitoring up to 70% of cases can resolve spontaneously (Pietrzak et al., 2013). Where
24 subthreshold symptoms remain unresolved, guidelines provide advice that GPs ought to
25 prescribe individually facilitated self-help (based on cognitive behaviour therapy CBT
26 principles), computerised CBT, or Internet CBT (iCBT) support programs, structured physical
27 activity programs, group based peer support for people with chronic physical health problems,
28 and non-directive counselling at home (Watzke et al., 2020). Antidepressants are not
29 recommended for subthreshold depression except where symptoms have persisted for two years
30 or more (National Institute for Health and Clinical Excellence, 2009). All prescribed
31 interventions are recommended to be reviewed within six weeks in any case and if there is no

1 change following first line low intensity interventions, then, guidance indicates a step-up
2 approach and transition to the interventions that may be delivered for moderate depression.

3

4 Despite this existing clinical guidance and the current focus in primary care mental health on
5 stepped care models and collaborative care, it remains somewhat unclear about if, and when, a
6 GP should intervene with people with subthreshold depressive symptoms. One study found that
7 of people with subthreshold depression 33% wanted professional help for their symptoms, while
8 40% did not (van Zoonen et al., 2015). Half of those who did not want professional intervention
9 said they preferred, and felt able, to solve their own problems. Several studies have found that
10 many people, especially those with low level symptoms, preferred to rely on their own self-help
11 strategies (Morgan, Jorm, & Mackinnon, 2012; van Zoonen et al., 2015). However, evidence is
12 limited for the effectiveness of these self-help strategies in the absence of a clinical diagnosis of
13 depression (Morgan & Jorm, 2008). Furthermore, research has tended to examine the frequency
14 of use and perceived benefits of self-management strategies during an episode of major
15 depressive disorder or in its immediate aftermath (see e.g., (Roos van Grieken, Kirkenier,
16 Koeter, Nabitz, & Schene, 2015; Rosa van Grieken, van Tricht, Koeter, van den Brink, &
17 Schene, 2018)) but this has not focused on use and benefit in the management of subthreshold
18 depression.

19

20 The aim of this nested qualitative study was to address this gap and identify patient-reported self-
21 help strategies for subthreshold depressive symptoms, and to determine the perceived benefits of
22 these strategies in the self-management of subthreshold depression. The findings provide further
23 support for benefits in symptom management of low intensity interventions, which are currently
24 suggested for use by GPs in stepped care for mental health care.

25

26

27 **Method**

28

1 **Design**

2 A qualitative interview study nested within a stratified individual randomised controlled trial
3 (RCT) was conducted. Participants were recruited from Target-D, an RCT that investigated
4 whether a person-centered, e-health platform matching depression care to symptom severity
5 prognosis could improve depressive symptoms relative to usual care at 3-month follow-up
6 (Chondros et al., 2018; Gunn et al., 2017). Full details of the RCT are available elsewhere (Gunn
7 et al., 2017); briefly, the intervention was an e-health platform accessed in the GP waiting room,
8 comprising symptom feedback, individual priority-setting, and prognosis-matched management
9 options (online self-help, online guided psychological therapy, or nurse-led collaborative care)
10 delivered for three months. Participants were randomly allocated to receive either a) symptom
11 feedback and matched management options, or b) usual care. Ethics approval was granted from
12 the University's Human Research Ethics Committee (ID1543648), the trial is completed and the
13 outcomes have been published separately (Fletcher et al., 2021).

14

15 **Participants and Sampling**

16 The Target-D RCT was conducted in 14 general practices in a metropolitan Australian city
17 (2016-2017). Practices were identified through a research education network at the University
18 where the trial was administered. Eligibility criteria were: seeing more than 50 adult patients per
19 day, agreement for research assistants to conduct eligibility screening in the waiting room,
20 provision of a private area for the delivery of the intervention and, the majority of GPs
21 consenting to be involved in the trial. Adults aged 18-65 years old were eligible if they reported:
22 current depressive symptoms (≥ 2 on the 2-item version of the Patient Health Questionnaire
23 [PHQ-2] (Arroll et al., 2010)); no self-reported change to antidepressant medication in the past
24 month; had access to the Internet; and sufficient written English to follow an Internet-based
25 cognitive behavioural therapy (iCBT) program. Patients reporting current use of antipsychotic
26 medication or currently receiving psychological therapy (online or face-to-face) were ineligible.
27 Randomisation occurred after participants provided informed consent and completed baseline
28 measures (including the items required for the diamond clinical prediction tool for depressive
29 symptom severity) (Chondros et al., 2018). This was all integrated within the Target-D platform
30 that was hosted on a purpose-built website.

31

32 The nested qualitative study was conducted with Target-D participants recruited from the first
33 seven practices that had enrolled in the RCT. Eligibility for the nested study was based on
34 Target-D trial participants meeting the above criteria and reporting a score of ≥ 5 and ≤ 9 on the 9-

1 item version of the Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001) at entry to the
2 RCT. These cut offs were selected as they delineate the published range for subthreshold
3 depression; scores lower than 5 indicate no depressive symptoms, while scores of ≥ 10 indicate
4 probable major depression (Arroll et al., 2010). Participants were further required to have
5 completed the 3-month intervention phase of the RCT so as not to influence behaviour in those
6 allocated to the usual care comparison group. Under these criteria, 226/645 (35%) Target-D
7 participants already recruited to the RCT at the time of the nested qualitative study were
8 identified as having subthreshold depressive symptoms. In the final study, a total of 1,868
9 Target-D participants were recruited to the whole trial.

10
11 To recruit participants to the nested qualitative study, individuals were identified using a random
12 number generator and approached in batches of five. This staggered approach ensured random
13 identification of participants and as interviews were conducted before each batch of five were
14 approached, it enabled consideration of emergent themes to guide collection of data until no new
15 patterns emerged. The eligible Target-D participants were telephoned and invited to a telephone
16 interview; if they consented they were invited to do the interview during that telephone
17 conversation or at time more suitable. Figure 1 shows the recruitment process.

18
19 <Insert Figure 1 Here>

20
21 Interviews were conducted with participants from both trial arms; the interviewer and authors
22 were blinded to which arm a participant had been randomised to. This was to minimise bias and
23 to identify whether participants in the intervention arm introduced in an unprompted way the use
24 of the recommended iCBT program that was delivered for that arm.

25 26 **Data Collection**

27 Interviews took place between April and May 2017. Interested participants were contacted by an
28 author by telephone at an agreed time. The aim of the study was explained prior to participants
29 providing verbal consent. The interviews were conducted by the first author, audio-recorded and
30 transcribed. A semi-structured, open-ended topic guide was developed based on a review of the
31 existing self-help and self-management literature for mild depression. The interview guide was
32 designed to elicit information about self-help strategies, medication use, perceptions of self-help
33 as treatment, and the role of the GP in recommending such strategies. Pilot testing of the
34 interview guide was completed with the first two participants. As no changes were identified in

1 the piloting, the two pilot participants' transcripts were included in the final study sample for
2 analysis. Field notes were kept by the interviewer to document emerging themes iteratively and
3 to consider the relationship of these themes with each other. Participants received a AU\$10
4 voucher to thank them for taking part.

5

6 **Analysis**

7

8 Braun & Clarke's stages for thematic analysis was used (Clarke & Braun, 2013). Following data
9 familiarisation, two authors analysed interviews and assigned codes to patient descriptions of
10 their self-help strategies to treat and self-manage their mood, and the perceived benefits. This
11 also included gathering patient views on role of GPs in formally prescribing self-help strategies.
12 These codes were reviewed and four domains were identified to organise the descriptions of the
13 strategies according to the themes of the perceived benefits. A third author checked transcripts
14 for agreement of codes, themes and domains and developed the schematic description.
15 Participants received a written summary (e.g. short community report) of the research findings at
16 the end of the study.

17

18 **Findings**

19

20 **Participant characteristics**

21 Fourteen participants were interviewed, of twenty-five who agreed to take part (see Figure 1).
22 Further attempts to recruit the additional eleven people who had initially agreed to the interview
23 were made, but they did not return telephone calls within the study timeframe. Tables 1 to 3
24 provide details on the interviewee demographics, clinical and health service use characteristics
25 for the nested qualitative study.

26

27 <Insert Tables 1 to 3 Here>

28

29 Interviews were conducted between 134 and 269 days after participants had enrolled in the RCT
30 (median = 231). The 14 interviewees' ages ranged from 25 years to 60 years old and 64% (9/14)
31 were female (Table 1). The reported duration of depressive symptoms was on average ten years
32 and of the 14 interviewees, five (36%) disclosed they used antidepressants for mood
33 management (Table 2). Three out of the five (60%) had taken antidepressants for more than two

1 years and the majority scored reasonably high (40%) in mental health self-efficacy. Table 3
2 shows the self-reported health services used for mental health management. Five of the 14 (36%)
3 had seen a psychologist or counsellor in the last twelve months and five of the 14 (36%) also
4 reported seeing a GP and five (36%) a physiotherapist.

5
6

7 **Patient-reported self-help strategies**

8

9 A range of self-help strategies were identified by interviewees as being beneficial for self-
10 management of depressive symptoms and moods. Once the strategies were identified, these were
11 organised into four main domains according to the benefits that interviewees described: social,
12 cognitive, behavioural, and restorative. The prominent themes related to the benefits discussed
13 by interviewees were noted within each domain and the strategies documented in a schematic
14 representation in Figure 2. For the social domain the benefits reported from these self-help
15 strategies were in relation to themes of connection and bonds, while for the cognitive domain
16 themes related to the benefits of keeping the mind focused. For the strategies that were reported
17 in the physical domain, the benefits were discussed within themes of modification of one's
18 behaviour and, for the restorative domain, the themes of being with oneself in a way that could
19 generate calm were seen to be benefits produced by those strategies.

20

21 <Insert Figure 2 Here>

22

23 It is important to note that not all strategies described within Figure 2 were given equal weight
24 by interviewees. Of the four domains, social and behavioural related strategies were the most
25 prominent ones that interviewees reported drawing on. The prominence of these two domains is
26 reflected in the darker shading within the Figure while the other two domains are lighter.

27

28 **The perceived benefits of self-help strategies for subthreshold depression**

29 *“Talking probably helps regulate my emotional state and the craft just helps me relax somewhat*
30 *and allows me to... I suppose, allow my brain to just calm down a bit so that I can process things*
31 *afterwards a bit better. But, no I don't think of it as a treatment because when I stop, the things*
32 *are still there...so it doesn't really treat the issue, but it helps me refill my reservoirs of*
33 *resilience so that I can continue on.”(F, 42)*

1

2 In the above quote, the self-help reported strategies shared by the interviewee fit with social
3 domains and serve to illustrate how talking was identified as a clear strategy for emotional
4 regulation. This was supported by additional craft activities to calm the brain and while the craft
5 was not perceived as the treatment, it provided a relaxing effect that could lead to the benefits of
6 “refilling the reservoirs of resilience to continue on”. Other interviewees shared strategies that
7 they felt reduced their feelings of isolation. These strategies clearly fit within the social domain
8 and referred to talking with family and friends (particularly those who had had similar
9 experiences) as their self-management:

10

11 *“My wife is very supportive... When I do feel down we normally can talk about it. After we*
12 *talked about it... it’s like a great weight was lifted off my shoulders or out of my head, you know,*
13 *that type of feeling.” (M, 56)*

14

15 These strategies of talking with family and friends, hanging out and being around others, were
16 preferred strategies to those of engaging in formal psychological supports. The benefits of
17 talking, socialising or being-with family and friends provided important social connection and
18 bonding which was also found through pets. One interviewee described this as follows:

19

20 *“I’ve got horses. They tend to calm me... They seem to know what you need and when you need*
21 *it, which is amazing.” (F, 30)*

22

23 In contrast to strategies within the social domains, those reported in the restorative domain
24 included using rituals or hobbies that provided the benefits of connecting to oneself and re-
25 focussing inward to self-manage mood related symptoms. The restorative domain and the
26 strategies that interviewees described enabled depressive or mood symptoms to be overshadowed
27 by the enjoyment of the task at hand. The strategies within the restorative domain included
28 meditation and mindfulness to restore strength and focus on oneself in a distinctively different
29 way to those outlined within the cognitive domain:

30

31 *“I think I’ve been a bit more conscious of needing to take time out, sitting quietly doing some*
32 *meditation... It’s a time of rest, I suppose, you’re resting the mind.” (M, 51)*

33

1 Strategies that involved using one's hands benefitted interviewees by "letting go of a particular
2 headspace...[where] putting your whole energy and your heart and soul into something [could]
3 bring a sense of satisfaction" (F, 51). The self-help strategies were used for mental distraction
4 that could facilitate time for oneself to enjoy crocheting, jewellery making or working on cars
5 and playing music. Other strategies that provided benefits were gardening, reading, and learning
6 a language.

7
8 *"It's nice to be able to create something, to see the reward at the end that you've spent that time*
9 *learning to do something and you've actually achieved it. And with practice you get better."* (F,
10 47)

11
12 While a small number of the interviewees described strategies within the cognitive domain (e.g.
13 positive thinking and goal setting or CBT) as beneficial, those strategies appeared to be less
14 prominent as self-help strategies than those outlined within social or behavioural domains.
15 Strategies such as exercise were seen to be very important in the physical domain, for example,
16 one interviewee noted that, "being active is such a huge thing and it boosts all your serotonin
17 levels and gets your blood flowing" (M, 25). Even though some interviewees were not actively
18 exercising to manage their mood, almost all who did mention this agreed that it was a positive
19 self-help strategy.

20
21 Surprisingly few people described the internet as a source for self-help strategies and where it
22 was described it was mostly used in conjunction with meditation, mindfulness, and to aide in
23 sleep. Other healthy lifestyle behaviours such as changes in diet or improved sleep hygiene were
24 less frequently reported to be beneficial. Two interviewees did comment that alcohol helped
25 them relax and one suggested that smoking offered a current coping strategy for their stress.
26 These behavioural domain strategies were said to provide benefits in terms of the modification of
27 behaviours to self-manage.

28
29 All interviewees seemed to be aware of the possible benefits of engaging in a self-help strategy
30 for improved mood, but not all of these strategies were deliberately employed with the intent to
31 improve mood. Those who demonstrated intent (as reflected by their knowledge and awareness
32 that intentional engagement in the strategy could improve their mood) tended to attribute their
33 low mood to factors they could modify and express a sense of control over these:

1 “Definitely now if I am feeling down I do try and do something to actively combat it. Normally I
2 try and find what the thing is first, like what triggered it. If I can figure that out, then, I can put
3 *logic together and I feel a lot better. But if I can’t then I’ll go out to the shed and start working*
4 *on the car, or do something else to combat it, because I know once it snowballs it gets worse.”*
5 (M, 37)

6
7 Self-help strategies were viewed as being effective in managing low mood, readily accessible
8 and immediate. A reported value of adopting self-help strategies was the idea that they provided
9 individuals with immediate benefit. As one interviewee indicated, “it means I can deal with it
10 straight away, I don’t have to, sort of, hold on and wait till I see a therapist or a counsellor, I can
11 try and deal with it myself” (F, 29). This was further illustrated by references to making “a
12 choice to take my phone out or bring the dog around the back...something to break the train of
13 thought” (M, 28).

14

15 There were some interviewees who were aware of the potential benefits of self-help strategies in
16 improving mood but they did not actively describe putting any self-help strategies into practice.
17 In these instances, interviewees often attributed depressive symptoms to factors outside their
18 control (e.g. domestic violence, familial conflict):

19 *“I don’t know if it treats it, I think it’s a fact of life that everyone feels low sometimes, you know.*
20 *... I don’t know if it’s a treatment but it’s a way of dealing with the situation.”* (M, 28)

21 For these interviewees self-help strategies were seen to be able to prevent mood decline, but they
22 could not fix the underlying cause.

23 After unblinding, the four domains were reviewed again alongside the strategies and there were
24 no identified differences in strategies mentioned between participants from the intervention and
25 comparison arms. Those in the intervention arm showed no marked difference in use of the
26 online self-help program (iCBT) as a strategy, the four mentions of apps and online support
27 largely related to meditation and mindfulness apps.

28

29 **How and when GPs should intervene**

1 Ten of the fourteen interviewees had mentioned having had at least one consultation with a GP that
2 focused on their depressive symptoms. Of the three interviewees whose GPs discussed self-help with
3 them, the GP focused primarily on behavioural strategies such as exercise.

4 *“I’m going back a few years now but they did. I think they said gentle exercise, yeah.”* (M, 51)

5 *“Some sort of gave tips like avoid alcohol, drugs, smoking. Things like that. Try and exercise. But,*
6 *ah, not a lot of in-depth tips, I suppose. I generally think they hand it to a psychologist.”* (M, 25)

7 Although most interviewees reported that GPs did not usually suggest self-help strategies to manage
8 their symptoms, they were open to this and saw GPs playing a role in making recommendations for
9 strategies.

10 *“I think I would appreciate a doctor or a therapist or whoever saying ‘before we put you on a*
11 *serious drug, sort of thing to fix it, how about seeing if you can do some more exercise or sitting*
12 *quietly and getting yourself into a positive spot’. Um, I would be very positive towards someone*
13 *saying that to me.”* (M, 51)

14 Interviewees agreed that encouraging self-help strategies would be a valuable way to help improve
15 mental health and well-being. However, they stressed that GPs should adopt a tailored approach that
16 can take into account individual preferences.

17 *“I wouldn’t commit to something that actively needed to be done if I didn’t think it would fit into my*
18 *lifestyle, because I know that I probably wouldn’t do it if I had to do it outside my lifestyle.”* (F, 42)

19 **Discussion**

20 A range of self-help strategies were reported by this group of primary care attendees as
21 beneficial and these were organised into four overarching domains: social, behavioural, cognitive
22 and restorative. The strategies and benefits that were identified bore some similarities to those
23 identified in a 2009 Delphi study (Morgan & Jorm, 2009). Physical activity, immersion in
24 enjoyable activities (which in some cases included socialising with friends and family), and
25 hobbies and rituals were the most frequently used strategies with notable perceived benefit. In
26 terms of immersion activities these were mainly used as a strategy for distraction from negative
27 thinking and mood related symptoms. The value of distraction is supported by early
28 experimental studies which suggested that distraction is an effective self-management technique
29 for people with non-clinical depression (Morgan & Jorm, 2008).

30

1 Although most interviewees had discussed their depressive symptoms with a GP, few reported
2 discussion of self-help strategies as a management approach. In previous studies, patients have
3 reported little expectation for GPs to make enquiries and support subthreshold depression
4 management (Backenstrass, Joest, Rosemann, & Szecsenyi, 2007). This has been linked to the
5 tension between patients seeing their condition as requiring management and the potential for
6 over diagnosis of normative distress. Consistent with prior research for those who do discuss
7 self-help strategies with a professional, the content of those discussions appeared to focus on
8 lifestyle activities such as exercise, sleep, and decreasing use of drugs or alcohol (Morgan &
9 Jorm, 2008). That study also identified a number of self-help strategies that were considered
10 helpful by a majority of patients but a minority of professionals. In this light, it is perhaps not
11 surprising that our interviewees mostly supported the idea that GPs could prescribe self-help
12 strategies as a possible management tool for subthreshold depression, however, the
13 personalisation of these strategies was still seen to be a challenge (e.g. how to tailor self-help
14 strategies to match with individual mental health needs and existing lifestyle practices).

15

16 **Strengths and limitations**

17 The findings from this nested qualitative study should be interpreted in light of the participants
18 being recruited through an existing RCT; the trial may have primed participants to think more
19 consciously about ways to improve their mental health and therefore people may have had more
20 strategies to share (although participants in the interview study were unaware if they were in the
21 control or intervention arms of the trial). We could not determine if anyone had previously
22 received a MDD diagnosis and whether this may have primed them regarding strategies. People
23 in the intervention arm received information about an online self-help program (iCBT), but this
24 did not appear to have been explicitly mentioned as a strategy that was used within the
25 interviews. It is possible that further interviews may have identified more intervention
26 participants who engaged with the online program and therefore may have referred more often to
27 iCBT or online programs as self-help strategies. While all authors were blinded to intervention
28 status, the sample may not be representative of the broader population of people with
29 subthreshold depression in terms of use and perceived benefits of self-help strategies because
30 they agreed to participate in a trial. It is also worth noting that our sample, and that of the larger
31 trial from which it was drawn, was relatively young and predominantly Caucasian. It is possible
32 that people of different ages or from diverse cultural backgrounds, or for Aboriginal and Torres
33 Strait Islander people that there may be different explanatory models for depression held and
34 therefore self-management strategies for subthreshold depression may be expressed differently.

1
2 Although no diagnostic instrument exists specifically for subthreshold depression, we believe
3 that the operationalisation of the PHQ-9 to identify people with subthreshold depression was
4 robust. PHQ-9 scores of 10 and above are sensitive and specific for identifying major depressive
5 disorder (Arroll et al., 2010). Since we used an upper limit of nine as a cut off in our sample it
6 was unlikely that there would be any participants with major depression included in this sub-
7 study. Independent analysis by three researchers mitigated against bias of perspectives, with
8 good agreement with the wider team about the self-help strategies that were expressed, the
9 associated domains and the benefits articulated by interviewees. An additional strength is that the
10 researchers had different backgrounds (a research psychologist, applied ethicist, medical student,
11 GP, and primary care researcher), thereby offering a variety of perspectives on the data. Self-
12 help strategies appeared to provide many interviewees in our study with ways to cope and self-
13 manage with their subthreshold depressive symptoms. These practices and strategies warrant
14 further examination for benefits and effectiveness at prevention of increased severity.

15
16 Despite policy advocacy for the use of online mental health interventions for people with
17 subthreshold symptoms (Davidson, Dowrick, & Gunn, 2016; Department of Health, 2015; Teo,
18 Choi, & Valenstein, 2013), participants in this study preferred to adopt personally-derived
19 approaches over professionalised approaches such as guided CBT therapies and other online
20 self-help. They also expressed the view that drawing on social bonds and support encouraged
21 personal resilience which has been found in other qualitative studies on depression (Dowrick,
22 Kokanovic, Hegarty, Griffiths, & Gunn, 2008). The frequency and depth with which participants
23 spoke about immersion in an activity, like gardening, crafting or fixing machinery, highlights the
24 therapeutic benefit that can be gained from naturally occurring, non-medicalised strategies. This
25 has further implications in the context of current models of social prescribing (which recognises
26 the importance of social supports and links to the community sector for care) being implemented
27 in primary care (Tierney et al., 2020); (Husk, Elston, Gradinger, Callaghan, & Asthana, 2019).

28
29 Undertaking enjoyable and sufficiently engaging activities were described as occupying the mind
30 space that might otherwise consumed by worrisome, negative thoughts. In many ways, the effect
31 of these activities mimics the described benefits of mindfulness and other relaxation activities
32 too (Davidson et al., 2015). The added benefit is that no psychological training is needed to
33 deliver or undertake these approaches, and these approaches may also subsequently support
34 reduced health care costs for both government and individuals in terms of costs of care.

1 Immersion activities that were described were broad which does emphasise that whichever
2 models are implemented to support people with subthreshold depressive symptoms, individual
3 preference will remain of utmost importance.

4
5 Across the four domains there were some reports of healthy and unhealthy behavioural strategies
6 for self-management of subthreshold depression. Exercise was reported as a mood regulation
7 strategy quite frequently, which does align with the evidence on the effectiveness of exercise in
8 reducing depressive symptoms (Josefsson, Lindwall, & Archer, 2014; Phillips, Phillips, Kiernan,
9 & King, 2003). The use of online self-help tools was not mentioned spontaneously by
10 participants, which reflects previous research that indicated that natural take-up of such
11 interventions was low (Morgan et al., 2012); however, it is difficult to know if this was due to
12 lack of awareness, confidence in these approaches or a lack of interest. As digital health and
13 ehealth models of care become more prominent with the global COVID-19 pandemic
14 understanding what motivates people to use online interventions will become a critical area for
15 further investigation.

16
17 Many interviewees were receptive to discussing self-help strategies with a GP, although few had
18 done so. Opportunities do exist for GPs to initiate a discussion about self-help strategies used to
19 manage mood, which could provide an indication of the patient's risk for ongoing mood
20 problems and assist in tailoring management to the individual. For example, it has been
21 established that people who reveal that they do not have at least one strong relationship are at
22 higher risk of chronic depressive symptoms (Davidson et al., 2016; Teo et al., 2013). In this
23 context people who are identified in this category could be encouraged to adopt some of these
24 patient-reported self-help management strategies in the short term and experience those social,
25 cognitive, behavioural and restorative benefits. However, the analysis revealed a distinction
26 between people who perceive that they have some agency over their mood regulation and those
27 who do not, suggesting that subthreshold depression management is complex and may need to be
28 delivered differently by GPs. For example, for some patients who described self-help activities
29 as providing a coping mechanism rather than a therapeutic outcome, or for those who feel their
30 low mood is determined by external factors, there may be a struggle to use these strategies to
31 their maximum potential even while the benefits are recognised. Both primary care and public
32 health messaging have a role in activating such patients' self-efficacy, although models such as
33 social prescribing need more robust research into outcomes to determine benefit (Husk et al.,
34 2019). Future studies could focus on prevention, as well as treatment, of major depressive

1 disorder using patient identified self-help strategies. As treatment of subthreshold depression can
2 reduce the risk of developing major depressive disorder at least in older adults (Buntrock et al.,
3 2016) encouragement of self-management strategies would seem to be of benefit for both the
4 individual patient and wider public health.

5

6 **Conclusion**

7 There is considerable scope for GPs to discuss current self-help strategies used by patients that
8 may increase the match between individual preferences and tailored treatment. Some people in
9 this interview study who reported having previously used unguided self-help strategies to good
10 effect appeared to describe a sense of having greater agency in their mood management. Other
11 individuals reported strategies that the current evidence might indicate as unhelpful or ineffective
12 in managing depressive symptoms, and they were less likely to describe a sense of agency over
13 in the management of their mood. The latter characteristics may identify this group of people as
14 possible candidates for more intensive interventions.

15

16 **Figure Legends**

17

18 Figure 1: Recruitment flowchart

19 Figure 2: Patient reported self-help strategies and practices for subthreshold depressive
20 symptoms

21

22

23

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34

Table 1. Participant Characteristics in Nested Qualitative Study (N=14)

	Mean (SD)
Age	41.6 (12.3)
	n (%)
Randomisation group	
Comparison	10 (71.4)
Intervention	4 (28.6)
Risk group	
Mild	14 (100.0)
Gender	
Male	5 (35.7)
Female	9 (64.3)
Education	
Left school before completing Year 10	1 (7.1)
Completed Year 11 or equivalent	3 (21.4)
Completed Year 12 or equivalent	2 (14.3)
Certificate/Diploma	7 (50.0)
Bachelor Degree or higher	1 (7.1)
Education	
Year 10/Year 10/equiv/Year 11/equiv	4 (28.6)
Year 12/equiv	2 (14.3)
Certificate/diploma	7 (50.0)
Bachelor degree or higher	1 (7.1)
Studying	
Part-time student	1 (7.1)
Employment	
Employed/working	13 (92.9)
Neither working nor looking for work	1 (7.1)
Volunteer	1 (7.1)
Benefit or disability support	2 (14.3)
Holds a health care card	3 (21.4)
Long term illness	3 (21.4)
Self-rated health	
Excellent	1 (7.1)
Very good	7 (50.0)
Good	5 (35.7)

Fair	1 (7.1)
Health rating	
Excellent/Very Good/Good	13 (92.9)
Fair/Poor	1 (7.1)
Live alone	0(0)
Manage on available income-collapse groups	
Easily/Not too bad	13 (92.9)
Difficult some of the time	1 (7.1)
Internet use	
Daily	12 (85.7)
Weekly	2 (14.3)
<hr/>	
Mean and Standard deviation (SD);Tab Count (n) and percentage (%)	

Table 2. Clinical characteristic at baseline (N=14)

	Mean (SD)
Depression sum of 9 items (PHQ-9) ¹	7.2 (1.6)
Anxiety disorder (GAD-7) ²	7.0 (1.5)
Mental Health Self-efficacy (6-60) ³	41.0 (10.1)
Utility Score for AQoL-8D ⁴	0.6 (0.1)
	n (%)
PHQ Major depressive syndrome (PHQ-9) ¹	0(0)
Anxiety disorder Impute (GAD-7) ²	1 (7.1)
Antidepressant	5 (35.7)
Antidepressant duration	
3 months to less than 6 months	1 (20.0)
6 months to less than 1 year	1 (20.0)
2 years or more	3 (60.0)

Mean and Standard deviation (SD); Count (n) and percentage (%)

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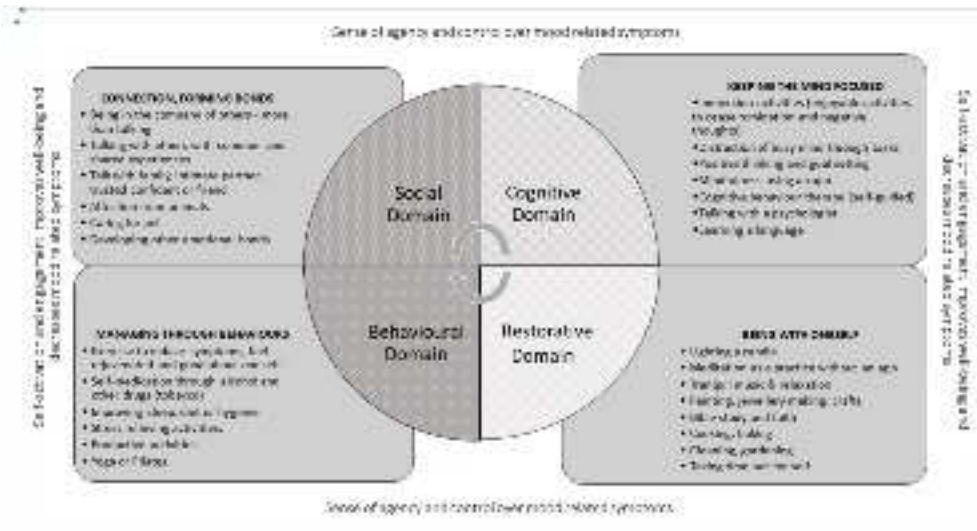
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Table 3. Health service use and strategies used for mental health at baseline (N=14)

	n (%)*
Psychologist or counsellor in 12 months	5 (35.7)
In the last month visited health professional for mental health	
GP	5 (35.7)
Physiotherapist	5 (38.5)
Pharmacist	3 (21.4)
Psychologist	2 (14.3)
Nurse	1 (7.1)
Support group	1 (7.1)
Other natural therapist	1 (7.1)
Hospital outpatient doctor	0(0)
Specialist doctor	0(0)
Chiropractor	0(0)
Counsellor	0(0)
Psychiatrist	0(0)
Social worker	0(0)
Domestic violence worker	0(0)
Alcohol and drug worker	0(0)
Family therapist	0(0)
Complementary therapist	0(0)
In the last month used for mental health	
Internet sites	4 (28.6)
Emergency visit	1 (7.1)
Self-help book	1 (7.1)
Telephone helpline	1 (7.1)
Community rehabilitation	0(0)
Care worker	0(0)
Overnight Stay	0(0)
Self-help DVD	0(0)

*Individuals may have reported more than one professional visited or accessing mental health support in the last month.

Count (n) and percentage (%)



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