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Patients and nurses' views on providing psychological support within cardiac rehabilitation programmes: a qualitative study

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3 **Patients and nurses' views on providing psychological support within cardiac**
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5 **rehabilitation programmes: a qualitative study**
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Abstract

Objective: To explore patients and nurses' views on the feasibility and acceptability of providing psychological care within cardiac rehabilitation services.

Design: In-depth interviews analysed thematically.

Participants: 18 patients and 7 cardiac nurses taking part in a pilot trial (CADENCE) of an enhanced psychological intervention (EPC) delivered within cardiac rehabilitation programmes by nurses to patients diagnosed with depression.

Setting: Cardiac services based in the South West of England and the East Midlands, UK.

Results: Patients and nurses viewed psychological support as central to good cardiac rehabilitation. Patients' accounts highlighted the significant and immediate adverse effect a cardiac event can have on an individual's mental wellbeing. They also showed that patients valued nurses attending to both their mental and physical health, and felt this was essential to their overall recovery. Nurses were committed to providing psychological support, believed it benefited patients, and advocated for this support to be delivered within cardiac rehabilitation programmes rather than within a parallel health care service. However, nurses were time-constrained and found it challenging to provide psychological care within their existing workloads.

Conclusions: Both patients and nurses highly value psychological support being delivered within cardiac rehabilitation programmes but resource constraints raise barriers to implementation. Consideration, therefore, should be given to alternative forms of delivery which do not rely solely upon nurses to enable patients to receive psychological support during cardiac rehabilitation.

Trial registration: ISCTRN34701576, 29 May 2014.

Strengths and limitations of this study

- This is the first study to detail both patients and nurses' views on providing psychological care within cardiac rehabilitation services.
- Interviews were held with patients receiving care in 7 different cardiac rehabilitation teams, and with nurses from four of these teams.
- Employing in-depth interviews ensured interviewees could raise issues that were salient to them and not predicted by the research team.
- The relatively small number of patients and nurses recruited to the CADENCE pilot trial limited the number of interviews that could be conducted, and the extent to which individuals could be purposefully sample to ensure maximum variation within the sample.
- The views expressed by interviewees about the provision of psychological care within cardiac rehabilitation services may have been influenced by their experiences of the CADENCE trial.

Background

About 20% of individuals with coronary heart disease (CHD) report symptoms of depression.¹ This proportion is approximately four times greater than the levels identified within the general population.² As depression among patients with CHD is associated with greater risk of subsequent cardiac morbidity and mortality,³⁻⁷ there is national and international recognition that the detection and treatment of depression among these patients is important.⁸⁻¹⁰

Routine clinical care for patients with CHD who have experienced acute coronary syndrome includes the provision of cardiac rehabilitation. The British Association for Cardiovascular Prevention and Rehabilitation's (BACPR) guidance⁸ states that usual cardiac rehabilitation should include psychological support. The majority of people attending cardiac rehabilitation in the UK, however, do not receive psychological care.¹¹

Cardiac rehabilitation programmes usually involve an initial assessment followed by a structured programme that lasts between 6 to 8 weeks. This programme may include clinic appointments where patients' cardiac symptoms are monitored and discussed, supervised exercise sessions and educational talks. Programmes are delivered primarily by cardiac nurse specialists, who are supported by physiotherapists. In terms of how nurses can best provide psychological support to patients undergoing rehabilitation, possible models include them delivering psychological support within the structured programme, referring patients onto other mainstream health services providing treatment for depression, and/or external mental health practitioners working closely with cardiac nurses to deliver psychological care to their patients. It is not known which approach would be most acceptable to patients and nurses. Little is known about patients and nurses' views and experiences of receiving/delivering psychological support within cardiac rehabilitation programmes. Simmonds et al¹² explored patients' views and experiences of living with depression and CHD, and Paquet et al¹³

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2
3 assessed patients' experiences of care received during the first three months following a
4 cardiac event requiring hospitalisation, but neither study explored patients' views of any
5 formal psychological support they had received during their rehabilitation, nor how they
6 thought this care should be given. To date, no study has documented cardiac nurses' views of
7 this area.
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14 The recently completed CADENCE study developed and piloted an enhanced psychological
15 care (EPC) intervention for patients presenting with depressive symptoms following a cardiac
16 event who attended cardiac rehabilitation.¹⁴ EPC was delivered by cardiac nurse specialists,
17 within their existing workloads and embedded within the structured cardiac rehabilitation
18 programme. It consisted of mental health care coordination and a patient led, nurse supported
19 programme of behavioural activation (BA). The care co-ordination aspect of the intervention
20 was based on current NICE guidance.^{15,16} BA is a simple psychological treatment for
21 depression that aims to re-engage patients with positively reinforcing experiences and reduce
22 avoidance behaviours.¹⁷ It is no less clinically effective but more cost effective than
23 cognitive behavioural therapy in treating depression in adults.¹⁸
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36 The CADENCE study included a feasibility study and external pilot cluster randomized
37 controlled trial. As part of the pilot trial, in-depth interviews were held with patients and with
38 nurses who, as part of the study, had been trained to deliver EPC. They explored patients and
39 nurses' views on the provision of psychological support within cardiac rehabilitation
40 programmes and, where appropriate, their experiences of receiving/implementing EPC. This
41 paper details findings from these interviews. It reports patients and nurses' views on the
42 feasibility and acceptability of providing psychological care within cardiac rehabilitation
43 services, reflecting on how such care could be most appropriately delivered in the future.
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54 **Methods**

55 *The CADENCE pilot trial*

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3 Twenty cardiac rehabilitation teams were approached to take part in the pilot trial between
4
5 December 2014 and February 2015. Eight teams agreed to participate. They were based in
6
7 the South West of England or the East Midlands. Five of the participating teams were
8
9 randomised to EPC and three to usual care (UC). Nurses in all 8 participating teams were
10
11 responsible for screening and recruiting patients.
12

13
14 Patients were eligible to take part if they were 18 years old or over, referred for cardiac
15
16 rehabilitation based on local clinical referral protocols and scored ten or more on the Patient
17
18 Health Questionnaire-9 (PHQ-9).¹⁹ Patients were not eligible if they reported being treated
19
20 for depression in the six months before their acute cardiac event; if there was evidence of
21
22 alcohol or drug dependency; where the participant was acutely suicidal; or where there was
23
24 evidence of poorly controlled bipolar disorder or psychosis/psychotic symptoms.
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26

27
28 Eleven cardiac rehabilitation nurses working in the five intervention teams were trained, over
29
30 two days, in how to deliver EPC. The training covered mental health care coordination, how
31
32 to support patients working with a BA self-help manual, assessment and management of
33
34 psychiatric risk, and how to use the CADENCE materials, e.g. the clinical materials to be
35
36 used during BA sessions. Whilst delivering EPC to patients, each nurse received clinical
37
38 supervision every fortnight from an accredited BA therapist. This was held by telephone,
39
40 either on an individual basis or in conjunction with other study nurses within their own team.
41
42 Seven of the participating teams managed to recruit patients to the trial. In total, 29 patients
43
44 were recruited (15 EPC and 14 UC). All patients and nurses involved in the trial, at the time
45
46 of being recruited to the study, agreed to their contact details being passed onto the
47
48 qualitative research team so they could be approached for interview.
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51 52 ***Patient and nurse interviews*** 53

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55 Patients were interviewed once they had completed their five month follow-up in the trial, in
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57 case the interview influenced their views of the intervention or the study. Also, by this time,
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2
3 most individuals had completed their cardiac rehabilitation. The intention was to
4
5 purposefully sample interviewees on the basis of age, gender, recruiting team and, in the case
6
7 of the EPC participants, adherence to EPC. However, as it took longer than expected to
8
9 recruit patients to the trial, in the end, all 15 EPC patients and 6 of the UC patients were
10
11 approached for interview.
12

13
14 Two of the EPC patients approached were uncontactable and another EPC patient declined to
15
16 be interviewed. Thus, interviews were held with a total of 18 patients (12 EPC and 6 UC).
17
18 These interviewees were recruited across the seven participating teams who had recruited
19
20 patients to the trial. Patients were interviewed by RW, a researcher with over 10 years'
21
22 experience of conducting qualitative research, between January and June 2016. The initial
23
24 two interviews were held on a face-to-face basis. The remaining interviews were held by
25
26 telephone, as interviewees were based across a large geographical area and because well
27
28 planned telephone interviews can gather the same material as interviews held face-to-face.²⁰
29
30

31
32 The two individuals interviewed in person provided written consent to take part at the time of
33
34 interview. Individuals interviewed over the telephone were posted a consent form and asked
35
36 to complete and return it to RW, using a pre-paid envelope, prior to interview.
37

38
39 A topic guide was used to ensure consistency across the interviews. It was based on the aims
40
41 of the research, a review of relevant literature, and the researchers' knowledge of cardiac
42
43 rehabilitation and the intervention. Two versions of the guide were used: one for the EPC
44
45 arm and one for the UC arm. Both included questions about the patient's cardiac event,
46
47 experience of cardiac rehabilitation, mental wellbeing during treatment, and relationship with
48
49 the cardiac nurse. The version used with the EPC arm also included questions about
50
51 experience of EPC and treatment adherence.
52

53
54 Eight of the eighteen patients interviewed were male and all the interviewees reported their
55
56 ethnicity as White British. The mean age of interviewees was 67.0 (age range 50-79 years)
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3 and their average pre-treatment PHQ-9 score was 13.9. Cardiac events reported by the
4
5 patients included heart attacks, angina, cardiomyopathy, heart failure and valve disorder
6
7 treated through coronary artery bypass grafts, stent insertion, valve replacement, medication
8
9 or a combination of these. All interviewees had attended at least one cardiac nurse
10
11 appointment, and most had completed a structured cardiac rehabilitation programme. The
12
13 interviews with EPC patients on average lasted longer than those held with UC patients (52
14
15 minutes versus 32 minutes).
16
17

18 Seven nurses (all female) from four of the five intervention teams were interviewed. No
19
20 nurses from the fifth team were interviewed as this team did not recruit any patients. Nurses
21
22 were interviewed once they had delivered EPC to one or more patients. A topic guide was
23
24 used and covered the following areas: experience of delivering EPC, dealing with patients at
25
26 risk of suicide or self-harm, and impact of delivering psychological care on their relationship
27
28 with patients.
29
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31
32 The nurse interviews were held by RW between December 2015 and March 2016. RW was
33
34 known to the nurses, as she had observed the two training days. The first three nurse
35
36 interviews were conducted in person. The remaining four were held by telephone, as these
37
38 nurses were geographically dispersed. As in the case of the patient interviews, nurses
39
40 provided written consent to be interviewed at the time interview, or completed and returned a
41
42 consent form prior to interview, depending on whether they were interviewed in person or
43
44 over the telephone. At the time of interview, each nurse had delivered EPC to between one
45
46 and four patients. The interviews lasted between 38 to 64 minutes.
47
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49 Ethical approval to conduct the pilot trial and the qualitative work nested within it, was given
50
51 by NRES Committee South West – Exeter (reference: 14/SW/0139).
52
53

54 *Data analysis*
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3 Data collection and analysis proceeded in parallel, so that early insights could inform the
4 focus of later interviews. Both patient and nurse interviews were audio recorded and fully
5 transcribed. Both interview sets were analysed thematically, as this allowed comparisons to
6 be made within and across the interviews and highlighted patient and nurse views towards
7 specific issues, e.g. the feasibility of cardiac nurses providing psychological care.

8
9
10 Initially, KMT and RW independently read a sample of nurse and patient transcripts in order
11 to identify emerging themes and to develop a preliminary coding frame. They then met to
12 discuss their coding. This discussion led to two coding frames being drafted: one for each
13 data set. Where possible, similar codes were used within each coding frame to assist
14 triangulation of nurse and patient accounts. Once the coding frames had been agreed,
15 transcripts were manually coded and data pertaining to each code summarised in tables using
16 an approach based on framework analysis.²¹ The researchers then read and re-read the tables
17 to identify key themes and deviant cases, and to highlight similarities and differences
18 between the data sets.

33 34 **Results**

35
36 Analysis of the data highlighted patients and nurses' views on the importance and benefits of
37 providing psychological care within cardiac rehabilitation programmes, indicated the extent
38 to which patients and nurses felt it was acceptable and practical for nurses to provide this
39 care, and identified issues relevant to service planners regarding when, where and how
40 psychological support should be provided in cardiac rehabilitation.

41
42 Below, quotes have been reproduced to illustrate key points. They have been tagged
43 according to whether a patient or nurse is being quoted, and using the interviewee's assigned
44 identification (ID) number.

53 54 ***The need for psychological support***

1
2
3 Both EPC and UC patients described the significant impact their cardiac event had had on
4 their emotional wellbeing. Most reported experiencing a dramatic loss of self-confidence,
5 panic attacks, sleeplessness, and/or a lack of energy and motivation. One individual stated
6 that he had felt '*mentally and physically shell-shocked*' (EPC, patient 12) and others
7 described how they had been suicidal:
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14 *'It just all came out and I was surprised at myself, to be honest, I had no idea that I*
15 *was, my overwhelming feeling was disappointment that I'd actually survived and that*
16 *frightened me because I've never felt that before [suicidal]...' EPC, patient 14*
17
18 *'I don't show it [how they feel] ... you feel really drained and really start thinking the*
19 *worst and what's the easiest way out which is, and then you think "which is the*
20 *easiest way out tablets or." [speech trailed off]' EPC, patient 9*
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27 The intensity of this emotional response may have been partly due to the fact that patients
28 were aware of the contrast between their former and current self, and what they had lost
29 following their cardiac event:
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34 *'It was a horrible, horrible experience, I just felt my life was ebbing away, and I've*
35 *never felt that low before... I had no go in me, no energy, no focus, horrible, horrible*
36 *sensation.'* UC, patient 2
37
38
39
40 *'I was angry, frightened, upset... I got very depressed, I lost my job, I loved my job...*
41 *suddenly everything had been ripped out from under my feet and I got very depressed,*
42 *very anxious and felt a failure.'* EPC, patient 17
43
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47 Some patients described feeling supported by family and friends, while others detailed how
48 they had been unable to discuss how they felt with others. In addition, most patients reported
49 the time between being discharged from hospital to their first cardiac rehabilitation
50 appointment as particularly difficult. Several patients described feeling lonely as they had
51 very little or no family around, and others recalled feeling unable to cope after the '*cossetted*'
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3 (EPC patient 13) hospital environment and cut ‘*adrift*’ (EPC patient 14) from professional
4
5 help upon hospital discharge.
6

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8 When focusing on the nurse accounts, it was apparent that all the nurses viewed
9
10 psychological care as a core component of cardiac rehabilitation and had provided
11
12 psychological support prior to their involvement in CADENCE. Nurses had routinely
13
14 screened for depression and anxiety using Hospital Anxiety and Depression Scale (HADS).²²
15
16 In terms of the content of psychological support provided, there was local variation. Most
17
18 nurses had provided support by giving talks on stress and relaxation, and some had also
19
20 referred patients to their GP or encouraged patients to self-refer to Improving Access to
21
22 Psychological Therapies (IAPT) services, which some nurses described as having good
23
24 relations with. Interestingly, one nurse’s comments implied the psychological aspects of
25
26 cardiac rehabilitation could dominate over the physical:
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28

29
30 *‘I’ve got to be honest, I mean, sometimes I’ve left a cardiac rehabilitation clinic and*
31
32 *all that we have addressed is the psychological side of things.’* Nurse 5
33

34
35 Having been asked within the trial to screen patients using the PHQ-9, which includes a
36
37 question specifically about suicidal thoughts, nurses became aware that when previously
38
39 using the HADS, they might not have identified patients who were at risk:
40

41
42 *‘Now it’s a lot more formalised and I’m more aware of that patient, because before I*
43
44 *wasn’t picking them up, because I wasn’t doing the PHQ-9.’* Nurse 1
45

46
47 Some nurses described being surprised by how frequently they now identified patients with
48
49 such thoughts, and how completing the questionnaire provided patients with an opportunity
50
51 to discuss their mental health which would often ‘*come a bit out of the blue*’ (Nurse 4).
52

53 ***The acceptability and feasibility of nurses providing psychological care***
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3 Both EPC and UC patients said they had developed good relationships with their cardiac
4 nurse and viewed them as someone they could talk to. The UC patients, however, described
5 how they had not discussed their mental wellbeing with their nurse in any detail, if at all.
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7

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9 Interviewer: *'Did the nurse talk to you at all about your anxiety at the time or
10 anything that she could help you with, did she give you a leaflet or did she talk about
11 it?'*
12

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14 UC, patient 1: *'No, no, because I don't expect she knew about it. Unless she knew
15 about it and didn't say nothing. As far as I can remember, it was never ever talked
16 about.'*
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22
23 EPC patients reported receiving EPC before, during or after attending their rehabilitation
24 fitness session. They had welcomed the opportunity to talk about their emotions, felt
25 comfortable with their nurse providing both physical and mental support, and were confident
26 in the nurse's ability to do this. It was also apparent that they valued the focus of their care
27 encompassing both their mental and physical health:
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34 *'It was a good surprise in that I thought the cardiac rehab would just be "Hello! Do
35 a few exercises" and that's it. I thought it was really brilliant, that it was looked at
36 holistically, brilliant. I came out thinking, "oh this is a real breath of fresh air, that
37 people should actually look at me as a total person and not just as a patient with a
38 dodgy heart" sort of thing.'* EPC, patient 13
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45 *'To have somebody that deals with the mental health side as well as the physical I
46 think is incredibly important... it shouldn't be just about rehabilitating the body, it
47 should be rehabilitating the mind as well.'* EPC, patient 17
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51
52 EPC patients viewed the one-to-one dedicated time they had had with their nurse to discuss
53 their mental health as crucial to their physical and mental recovery, and two participants who
54 had experienced suicidal thoughts described this input as lifesaving:
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3 *'Without people like you and [name of nurse] talking to me and me talking to you, I*
4
5 *might not be here now.'* EPC, patient 8
6

7 *I think a lot of people when they commit suicide and things like that... they just feel*
8
9 *useless to everybody and nobody and the good thing with that [EPC] is they do help*
10
11 *you... it's certainly helped me.'* EPC, patient 9
12
13

14 Talking to a nurse had allowed patients to express how they felt, to better understand why
15 they felt low, and had encouraged them to talk to others. In addition, EPC patients described
16 how BA had enabled them to see the link between their mood and certain activities, which in
17 turn had led to them changing or increasing activities to improve their mood.
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22 However, despite valuing the care they had received, some EPC patients commented that
23 they would have liked more psychological support but were aware of the '*tremendous*
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pressure' (EPC patient 12) nurses were working under, so felt it would be inappropriate to
ask for more time. Also, not all patients felt nurses were best placed to deal with their mental
health needs. For example, one patient commented that she did not want to talk about mental
health with a 'physical' health practitioner. In addition, several patients mentioned they had
received their EPC session in a corner of the gym or leisure centre because the nurse did not
have access to a private room. Although most participants said they were not worried about
the lack of privacy, one participant described how she felt uncomfortable discussing her
emotions in public.

Comments by nurses indicated that they felt capable of providing psychological care. They
described the training they had received as part of CADENCE as covering everything they
needed to know and stated that, with experience, they had found ways to deliver EPC
smoothly. In addition, one nurse commented that patients learnt quickly and implied that as
patients progressed through treatment, less work was involved:

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2
3 *'Within a couple of weeks I think the patients saw very quickly how their mood was*
4 *related to their activities and they got it very quickly. So after that actually the time*
5 *spent with them prior to the group was more as you say coordinating them to the next*
6 *phase ... and actually moving them onto actually allocating routine activities.'* Nurse
7
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13
14 Nurses commented that, having completed the CADENCE training, they felt more able to
15 effectively treat depression and had formalised their approach. They also said they now spent
16 more designated time with patients discussing mental health, which they felt patients valued,
17 and thought BA had encouraged patients to be more physically and socially active. However,
18 nurses described how delivering EPC could be time consuming. An EPC session
19 incorporating the BA component could take between 10 and 40 minutes, and even longer if
20 the PHQ-9 indicated that the patient was 'at risk'. Time was also needed to receive clinical
21 supervision and to chase patients who had not attended. The impact of this increased
22 workload meant nurses shortened their lunch breaks, delayed going home, ran late with other
23 patients and/or asked a colleague to 'double up' (Nurse 6) so one of them could focus on the
24 EPC patient while the other took the fitness session.

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This increase in workload also meant some nurses felt 'lucky' (nurses 1, 2, 6) that they had
not needed to see more than one EPC patient at the same rehabilitation session or on the same
day. One nurse (2) also said it would be 'mind-numbingly brain taxing' to deliver EPC to
more than one person in the same session or on the same day, suggesting nurses would also
have experienced this situation as mentally and emotionally demanding.

In addition to having limited time, nurses reported having little or no access to a private room
where they could talk to patients about sensitive issues. Most nurses worked across various
sites, either within their hospital or within the community e.g. leisure centres or health
centres. A lack of space led to nurses asking EPC patients to come early to a rehabilitation

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2
3 session or to stay on afterwards, and talking to patients in a quiet corner of the fitness room.

4
5 The latter situation was viewed as not ideal but perhaps less intimidating for patients than
6
7 meeting in a private room.

8 9 ***When and how to provide psychological care for depression***

10
11 Patients felt that embedding psychological support for low mood within cardiac rehabilitation
12
13 was timely and appropriate. However, some commented they would also have liked to have
14
15 commenced such care earlier, either when in hospital following their cardiac event or
16
17 immediately following hospital discharge, as they had experienced this time as particularly
18
19 difficult. Patients also thought psychological support should be continued beyond cardiac
20
21 rehabilitation if it was still needed:
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25 *'I think additional help after this [end of EPC] is a definite must for some people, it*
26
27 *was for me... if they [your nurse] feel that you need more help, that should be offered*
28
29 *definitely. Or if it's a waste of time, cos you just literally will go back to how you were*
30
31 *before, I think.'* EPC, patient 11
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33

34
35 Some patients suggested some aspects of EPC could be delivered within a group, as they had
36
37 found it reassuring to talk to other patients about their experiences and to hear about theirs.
38
39 However, other patients thought a group environment might inhibit what individuals
40
41 discussed, acknowledging that they themselves would struggle to publically talk about their
42
43 emotions.

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45 Some patients had been care coordinated to other services, e.g. to their GP or to IAPT
46
47 services, and had found this beneficial. However, six EPC patients said they would not
48
49 discuss their mental health with their GP, believing that their GP would only prescribe an
50
51 antidepressant:
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54
55 *'I'd say what's the point in me going to the doctors, he gives me these bloody tablets,*
56
57 *I'm not going to live on sodding tablets, what's the point?'* EPC, patient 9
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1
2
3 Nurses commented that patients who had scored just below 10 on the PHQ-9 may have
4 benefited from receiving psychological support. They also raised the possibility of delivering
5 psychological support to groups rather than individual patients, as they too realised that
6
7 individuals could benefit from talking about their experiences with others:
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9

10
11 *'Patients get a huge amount of benefit just in talking to each other, don't they, and so*
12 *the problem, the trouble solving, the solutions, "oh I do this", and just seeing how*
13 *other people are getting on, the little supportive networks that they strike up when*
14 *they're actually in the waiting room waiting for us to assess them and they've already*
15 *got their own counselling and social network going on there, so I do recognise the*
16 *power of actually getting them together as a group.'* Nurse 5
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25 Yet, like patients, they also acknowledged that some patients would not want to discuss their
26 personal views in front of others. A suggested possible solution was to have an introductory
27 EPC session in a group setting, and then offer one-to-one sessions to explore personal issues.
28 In terms of where to provide psychological support, nurses were aware that often patients did
29 not want to be referred to their GP and described how patients had declined referrals to other
30 services for their mental health. They also felt that integrating psychological care within
31 cardiac rehabilitation had led to patients being more receptive and willing to address their
32 mental health:
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43 *'...ninety percent of the time people would say "no I don't want to do that [be*
44 *referred] I'm just going to work through it, I'm going to see how I get on". So actually*
45 *being able to offer an extra option that didn't involve all of that, people were more*
46 *receptive.'* Nurse 2
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51 Nurses also remarked that when they had referred patients to another service, they were not
52 informed whether or not the patients had attended. Thus, although recognised as a challenge,
53 most nurses commented that if additional resources could be made available, then integrating
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3 psychological support, such as EPC, within cardiac rehabilitation programmes would be the
4
5 ideal situation.
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7 **Discussion**

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9 Both patient and nurse accounts highlighted the need to provide psychological support to
10
11 patients with low mood receiving cardiac rehabilitation. Patients detailed the significant
12
13 emotional impact their cardiac event had on them, and described psychological support as not
14
15 only key to their mental recovery but also as supporting their physical wellbeing. Prior to
16
17 their involvement in CADENCE, nurses had viewed psychological care as an essential part of
18
19 their role. The training they had received during the CADENCE trial had led them to
20
21 formalise their approach and to spend more dedicated time one-to-one time with patients.
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23 Both patients and nurses' accounts suggested that psychological support should be embedded
24
25 within cardiac rehabilitation programmes, rather than provided out with through a parallel
26
27 service, and that EPC appeared effective in treating depression in this patient group.
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29 However, it was apparent that nurses were time-constrained and found it challenging to
30
31 provide psychological support within their existing workloads.
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35 In terms of future delivery of psychological support, this study raised issues relevant to when,
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37 where and how this could be done. Patients interviewed argued for psychological support to
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39 commence earlier, either during hospital immediately following a cardiac event or upon
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41 hospital discharge, and to continue after discharge from a rehabilitation programme where
42
43 necessary. On average, most patients spend only three days in hospital following a heart
44
45 attack²³ and are discharged back to the community with no formal support during the initial
46
47 weeks prior to commencing cardiac rehabilitation. Patients in this study talked about feeling
48
49 lonely and cut adrift from professional help following hospital discharge, and this appeared to
50
51 compound their low mood. They also described a sense of loss; loss of ability, loss of
52
53 confidence and a loss of roles. The theme of loss was one that underpinned all the interviews
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3 conducted by Simmonds et al in their study of patients' views and experiences of living with
4 depression and CHD. It is also discussed by Barley et al²⁴, who report primary care
5 practitioners viewing patients' loss of a valued role or ability to fulfil responsibilities as
6 contributing to the development of depression following a cardiac event.
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11 Our findings suggest psychological support should be embedded within cardiac rehabilitation
12 programmes, as patients welcomed cardiac nurses attending to both their physical and mental
13 wellbeing, viewing this as providing a more holistic approach. In addition, nurses felt
14 integrating psychological support within existing programmes encouraged patients to
15 acknowledge their need for psychological input. Nurses were also aware that patients often
16 declined referrals to other services, and both patients and nurses mentioned patients'
17 reluctance to consult a GP about their mental health.
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22 Whole system approaches that integrate mental and physical health care are viewed as the
23 most appropriate way to support patients living with mental and physical morbidity,²⁵ and
24 other researchers have reported patients with CHD and depression as being ambivalent about
25 seeking help from a GP.¹² Here patients linked this reluctance to their assumption that a GP
26 would prescribe an antidepressant. Yet GPs may be hesitant to prescribe antidepressants for
27 patients with CHD, as they are aware patients may be unwilling to take an antidepressant and
28 view other forms of treatment that encourage patients to be physically and socially active as
29 potentially more effective for depression in this patient population, e.g., exercise on referral,
30 cardiac rehabilitation.²⁴
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35 Another reason patients might be reluctant to seek help is the stigma that surrounds mental
36 health. Nurses reported patients only talking about low mood once the nurse had screened
37 them as positive for low mood and/or at risk of suicide or self-harm. Non-disclosure of
38 mental health problems by patients with physical conditions can compound management
39 problems.²⁶ Here it was apparent that nurses had been able to identify patients at risk because
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3 they had been asked to screen patients using the PHQ-9, which explicitly asks about suicidal
4 ideation. Thus, cardiac teams may want to consider using the PHQ-9 in the future, alongside
5 training to ensure nurses manage self-harm risk appropriately and in a way that is consistent
6 with clinical guidelines.^{15, 16}

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11 Although both patients and nurses advocated for psychological support to be provided within
12 rehabilitation programmes, both acknowledged that nurses found it challenging to provide
13 this care within their existing workloads. Group-based approaches were suggested, as both
14 sets of interviewees were aware that patients could benefit from interacting with other cardiac
15 patients. This could reduce nurse workload but whether group delivery would be possible
16 would partly depend on the intervention. For an intervention such as EPC, where there were
17 both general and patient-specific components, it might be possible for nurses to deliver some
18 aspects of the intervention in a group setting and other components on a one-to-one. For
19 example, BA could be discussed during group educational talks and care-coordination
20 delivered on an individual basis. Doing so would ensure all patients receiving cardiac
21 rehabilitation received information on BA; a move which would address the view expressed
22 by nurses here, that psychological support could benefit all patients and not just those who
23 had screened positive for depression. Such an approach would concur with the recent
24 findings of Blumenthal et al,²⁷ who observed the potential benefit to longer-term
25 psychological morbidity when stress management was offered to all patients following an
26 acute cardiac event.

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47 In terms of what psychological support should be provided, this paper did not focus on
48 patients and nurses' specific views of EPC, as the aim was to assess their more general views
49 on provision of psychological support. However, it was evident that nurses and patients
50 viewed the patient-led, nurse supported BA component of the intervention as effective in
51 helping patients manage their depression, and this component fits with NICE guidance for
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3 treatment of depression in people with physical health problems, as it proposes that
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5 individuals with depression and physical health problems start on low intensity treatments,
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7 including guided self-help and physical activation.¹⁶ In addition, a recent process evaluation
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9 reports that patients who have received BA for depression perceive it as leading to both
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11 cognitive and behavioural changes, which they view as not only improving their symptoms
12
13 but also their lives more broadly.²⁸ In terms of care coordination, whilst our findings suggest
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15 psychological care should be embedded within cardiac rehabilitation programmes, some
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17 patients had benefited from being referred to other services and this did give patients greater
18
19 treatment choice. Lastly, the intervention was developed and revised in response to
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21 comments from patients and nurses involved in the feasibility study that preceded the
22
23 CADENCE pilot trial.²⁹ Thus, EPC is more likely than other interventions to be acceptable
24
25 to patients and nurses, although findings from the pilot trial showed it remained too
26
27 burdensome for nurses to deliver long-term.
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31 ***Study strengths and weakness***

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33 The relatively small number of patients and nurses recruited to the trial limited who could be
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35 approached for interview and thus the possibility of sampling individuals purposefully to
36
37 ensure maximum variation within the sample in relation to participant characteristics. This
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39 means we cannot be confident that data saturation was reached. It also means certain groups
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41 of individuals are not represented, e.g. none of the patients interviewed were from an ethnic
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43 minority. This might limit generalisability of the findings to the wider population of patients
44
45 or nurses using cardiac rehabilitation services in the UK. However, we interviewed patients
46
47 from seven different teams and nurses from four of the five participating intervention teams.
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49 As many of the key findings were evident across the interviews, there is little reason to think
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51 the findings reported here would not be relevant to other cardiac rehabilitation programmes.
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55 ***Conclusions and implications***

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3 Both patients and nurses highly value psychological support being delivered by nurses within
4 cardiac rehabilitation programmes, but time and resource constraints raise significant barriers
5 in terms of implementation, so alternative approaches need to be considered. Given that
6 nurses viewed provision within rehabilitation programmes as ideal, and mentioned good
7 relations with local IAPT services, an alternative approach could be nurses co-ordinating
8 IAPT-trained psychological wellbeing practitioners to provide psychological support within
9 cardiac programmes. In terms of treatment offered, it could include BA, as this was viewed
10 as potentially effective by patients and nurses, and is a treatment that can be successfully
11 delivered by junior mental health workers.¹⁸

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40 **Contributors**

41
42 KT was the principal investigator for the qualitative work nested within the CADENCE study
43 and led on writing this manuscript. RW conducted and analysed the interviews on which the
44 paper is based. JC was chief investigator for the CADENCE study, and SR the scientific
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8
9
10 NIHR, NHS or the Department of Health.

11 **Competing interests**

12
13
14 We have read and understood BMJ policy on declaration of interests and declare that we have
15 no competing interests.
16

17 **Data sharing statement**

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19
20 The datasets analysed during the current study are not publicly available, as participants were
21 not asked to consent to this at the time of data collection. However, if requests for data
22 sharing are made, the University of Bristol Data Access Committee will consider them and
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decide whether or not they can be met.

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Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interviews?	Page 7 and 8: RW conducted the interviews.
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	BSc, RGN.
3. Occupation	What was their occupation at the time of the study?	Research Fellow.
4. Gender	Was the researcher male or female?	Female.
5. Experience and training	What experience or training did the researcher have?	Page 7: 'RW, a researcher with over 10 years' experience of conducting qualitative research'
<i>Relationship with participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	Page 8: RW was known to the nurses, as she had observed the two training days.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Participants were told that RW was the researcher employed on the study to conduct the qualitative work.
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	None were reported.
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	The study drew on the principles of grounded theory in terms of insights from earlier data collection informing the focus of later interviews (page 8)

<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 7: we explain that, ‘as it took longer than expected to recruit patients to the trial, in the end, all 15 EPC patients and 6 of the UC patients were approached for interview. Page 8: we explain that all the nurses from the four intervention teams who recruited patients were interviewed.
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	We explain (page 6) that all patients and nurses involved in the trial, at the time of being recruited to the study, agreed to their details being passed onto the qualitative research team so they could be approached for interview. In terms of approaches used, RW contacted patients by telephone, and nurses by email.
12. Sample size	How many participants were in the study?	18 patients (page 7) and 7 nurses (page 8) were interviewed.
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Page 7: we explain that ‘Two of the EPC patients approached for interview were uncontactable and another EPC patient declined to be interviewed’.
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	We explain both patients and nurses were interviewed either face-to-face or by telephone (page 7 and 8).
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No.
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	On page 7, we report patients’ gender, ethnicity, mean age and pre-treatment

		PHQ-9 score. We also detail what cardiac events patients reported. On page 8, we state all the nurses interviewed were female.
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	We explain on pages 7 and 8 topic guides were used. The guides were not pilot tested.
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	We explain on page 8 all the interviews were audio-recorded.
20. Field notes	Were field notes made during and/or after the interview or focus group?	Field notes were taken immediately after each interview.
21. Duration	What was the duration of the interviews or focus group?	Length of the interviews is provided on page 8
22. Data saturation	Was data saturation discussed?	Data saturation is mentioned in Discussion, page 20.
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No.
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	We explain on page 8, two researchers coded data.
25. Description of the coding tree	Did authors provide a description of the coding tree?	No.
26. Derivation of themes	Were themes identified in advance or derived from the data?	On page 8, we have written 'Initially, KMT and RW independently read a sample of nurse and patient transcripts in order to identify emerging themes and to develop a preliminary coding frame.'
27. Software	What software, if applicable, was used to manage the data?	We state on page 9 'transcripts were manually coded and data pertaining to each code summarised in tables using an approach based on framework

		analysis'
28. Participant checking	Did participants provide feedback on the findings?	No.
<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Quotes have been used in the Results section and, as explained on page 9, 'according to whether a patient or nurse is being quoted, and using the interviewee's assigned identification (ID) number.'
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	We have indicated when a view was expressed by just one individual, e.g. page 9, 11, 13

BMJ Open

Patients and nurses' views on providing psychological support within cardiac rehabilitation programmes: a qualitative study

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Primary Subject Heading:	Mental health
Secondary Subject Heading:	Cardiovascular medicine, Qualitative research, Rehabilitation medicine
Keywords:	depression, cardiac rehabilitation, QUALITATIVE RESEARCH, psychological support

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3 **Patients and nurses' views on providing psychological support within cardiac**
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5 **rehabilitation programmes: a qualitative study**
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Abstract

Objective: To explore patients and nurses' views on the feasibility and acceptability of providing psychological care within cardiac rehabilitation services.

Design: In-depth interviews analysed thematically.

Participants: 18 patients and 7 cardiac nurses taking part in a pilot trial (CADENCE) of an enhanced psychological intervention (EPC) delivered within cardiac rehabilitation programmes by nurses to patients with symptoms of depression.

Setting: Cardiac services based in the South West of England and the East Midlands, UK.

Results: Patients and nurses viewed psychological support as central to good cardiac rehabilitation. Patients' accounts highlighted the significant and immediate adverse effect a cardiac event can have on an individual's mental wellbeing. They also showed that patients valued nurses attending to both their mental and physical health, and felt this was essential to their overall recovery. Nurses were committed to providing psychological support, believed it benefited patients, and advocated for this support to be delivered within cardiac rehabilitation programmes rather than within a parallel health care service. However, nurses were time-constrained and found it challenging to provide psychological care within their existing workloads.

Conclusions: Both patients and nurses highly value psychological support being delivered within cardiac rehabilitation programmes but resource constraints raise barriers to implementation. Consideration, therefore, should be given to alternative forms of delivery which do not rely solely upon nurses to enable patients to receive psychological support during cardiac rehabilitation.

Trial registration: ISCTRN34701576, 29 May 2014.

Strengths and limitations of this study

- This is the first study to detail both patients and nurses' views on providing psychological care within cardiac rehabilitation services.
- Interviews were held with patients receiving care in 7 different cardiac rehabilitation teams, and with nurses from four of these teams.
- Employing in-depth interviews ensured interviewees could raise issues that were salient to them and not predicted by the research team.
- The relatively small number of patients and nurses recruited to the CADENCE pilot trial limited the number of interviews that could be conducted, and the extent to which individuals could be purposefully sample to ensure maximum variation within the sample.
- The views expressed by interviewees about the provision of psychological care within cardiac rehabilitation services may have been influenced by their experiences of the CADENCE trial.

Background

About 20% of individuals with coronary heart disease (CHD) report symptoms of depression.¹ This proportion is approximately four times greater than the levels identified within the general population.² Depression among patients with CHD is associated with greater risk of subsequent cardiac morbidity and mortality.³⁻⁷ Reasons for this association remain unclear but possible mechanisms include the association between depression and cardiac risk factors (e.g. hypertension, smoking, reduced physical activity), greater coronary disease severity, treatment non-adherence to cardiac medication and rehabilitation programmes, and increased platelet aggregation.^{8,9} There is national and international recognition that the detection and treatment of depression among these patients is important.¹⁰⁻¹²

Routine clinical care for patients with CHD who have experienced acute coronary syndrome includes the provision of cardiac rehabilitation. The British Association for Cardiovascular Prevention and Rehabilitation's (BACPR) guidance¹⁰ states that usual cardiac rehabilitation should include psychological support. The majority of people attending cardiac rehabilitation in the UK, however, do not receive psychological care.¹³

Cardiac rehabilitation programmes usually involve an initial assessment followed by a structured programme that lasts between 6 to 8 weeks. This programme may include clinic appointments where patients' cardiac symptoms are monitored and discussed, supervised exercise sessions and educational talks. Programmes are delivered primarily by cardiac nurse specialists, who are supported by physiotherapists. In terms of how nurses can best provide psychological support to patients undergoing rehabilitation, possible models include them delivering psychological support within the structured programme, referring patients onto other mainstream health services providing treatment for depression, and/or external mental

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3 health practitioners working closely with cardiac nurses to deliver psychological care to their
4
5 patients. It is not known which approach would be most acceptable to patients and nurses.
6

7
8 Little is known about patients and nurses' views and experiences of receiving/delivering
9
10 psychological support within cardiac rehabilitation programmes. Simmonds et al¹⁴ explored
11
12 patients' views and experiences of living with depression and CHD, and Paquet et al¹⁵
13
14 assessed patients' experiences of care received during the first three months following a
15
16 cardiac event requiring hospitalisation, but neither study explored patients' views of any
17
18 formal psychological support they had received during their rehabilitation, nor how they
19
20 thought this care should be given. To date, no study has documented cardiac nurses' views of
21
22 this area.
23

24
25 The recently completed CADENCE study developed and piloted an enhanced psychological
26
27 care (EPC) intervention for patients presenting with depressive symptoms following a cardiac
28
29 event who attended cardiac rehabilitation.¹⁶ EPC was delivered by cardiac nurse specialists,
30
31 within their existing workloads and embedded within the structured cardiac rehabilitation
32
33 programme. It consisted of mental health care coordination and a patient led, nurse supported
34
35 programme of behavioural activation (BA). The care co-ordination aspect of the intervention
36
37 was based on current NICE guidance.^{17,18} BA is a simple psychological treatment for
38
39 depression that aims to re-engage patients with positively reinforcing experiences and reduce
40
41 avoidance behaviours.¹⁹ It is no less clinically effective but more cost effective than
42
43 cognitive behavioural therapy in treating depression in adults.²⁰
44
45

46
47 The CADENCE study included a feasibility study and external pilot cluster randomized
48
49 controlled trial. As part of the pilot trial, in-depth interviews were held with patients and with
50
51 nurses who, as part of the study, had been trained to deliver EPC. They explored patients and
52
53 nurses' views on the provision of psychological support within cardiac rehabilitation
54
55 programmes and, where appropriate, their experiences of receiving/implementing EPC. This
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3 paper details findings from these interviews. It reports patients and nurses' views on the
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5 feasibility and acceptability of providing psychological care within cardiac rehabilitation
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7 services, reflecting on how such care could be most appropriately delivered in the future.
8

9 **Methods**

10 *The CADENCE pilot trial*

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12
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14 Twenty cardiac rehabilitation teams were approached to take part in the pilot trial between
15
16 December 2014 and February 2015. Eight teams agreed to participate. They were based in
17
18 the South West of England or the East Midlands. Five of the participating teams were
19
20 randomised to EPC and three to usual care (UC). Nurses in all 8 participating teams were
21
22 responsible for screening and recruiting patients.
23

24
25 Patients were eligible to take part if they were 18 years old or over, referred for cardiac
26
27 rehabilitation based on local clinical referral protocols and scored ten or more on the Patient
28
29 Health Questionnaire-9 (PHQ-9).²¹ Patients were not eligible if they reported being treated
30
31 for depression in the six months before their acute cardiac event; if there was evidence of
32
33 alcohol or drug dependency; where the participant was acutely suicidal; or where there was
34
35 evidence of poorly controlled bipolar disorder or psychosis/psychotic symptoms.
36
37

38
39 Eleven cardiac rehabilitation nurses working in the five intervention teams were trained, over
40
41 two days, in how to deliver EPC. The training covered mental health care coordination, how
42
43 to support patients working with a BA self-help manual, assessment and management of
44
45 psychiatric risk, and how to use the CADENCE materials, e.g. the clinical materials to be
46
47 used during BA sessions. Whilst delivering EPC to patients, each nurse received clinical
48
49 supervision every fortnight from an accredited BA therapist. This was held by telephone,
50
51 either on an individual basis or in conjunction with other study nurses within their own team.
52
53
54 In order to assess treatment fidelity, nurses were asked to complete a structured form after
55
56 delivering EPC to patients. This form had been developed by the research team and invited
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1
2
3 nurses to record which elements of the EPC intervention they had delivered. These notes
4
5 were reviewed by members of the research team, alongside feedback from the clinical
6
7 supervision sessions. Based on this information, the research team concluded that the nurses
8
9 had delivered EPC as intended.

10
11 Seven of the participating teams managed to recruit patients to the trial. In total, 29 patients
12
13 were recruited (15 EPC and 14 UC). All patients and nurses involved in the trial, at the time
14
15 of being recruited to the study, agreed to their contact details being passed onto the
16
17 qualitative research team so they could be approached for interview.
18
19

20 ***Patient and nurse interviews***

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22 Patients were interviewed once they had completed their five month follow-up in the trial, in
23
24 case the interview influenced their views of the intervention or the study. Also, by this time,
25
26 most individuals had completed their cardiac rehabilitation. The intention was to
27
28 purposefully sample interviewees on the basis of age, gender, recruiting team and, in the case
29
30 of the EPC participants, adherence to EPC. However, as it took longer than expected to
31
32 recruit patients to the trial, in the end, all 15 EPC patients and 6 of the UC patients were
33
34 approached for interview.
35
36

37
38 Two of the EPC patients approached were uncontactable and another EPC patient declined to
39
40 be interviewed. Thus, interviews were held with a total of 18 patients (12 EPC and 6 UC).
41
42 These interviewees were recruited across the seven participating teams who had recruited
43
44 patients to the trial. Patients were interviewed by RW, a researcher with over 10 years'
45
46 experience of conducting qualitative research, between January and June 2016. The initial
47
48 two interviews were held on a face-to-face basis. The remaining interviews were held by
49
50 telephone, as interviewees were based across a large geographical area and because well
51
52 planned telephone interviews can gather the same material as interviews held face-to-face.²²
53
54

55
56 The two individuals interviewed in person provided written consent to take part at the time of
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1
2
3 interview. Individuals interviewed over the telephone were posted a consent form and asked
4
5 to complete and return it to RW, using a pre-paid envelope, prior to interview.
6

7
8 A topic guide was used to ensure consistency across the interviews. It was based on the aims
9
10 of the research, a review of relevant literature, and the researchers' knowledge of cardiac
11
12 rehabilitation and the intervention. Two versions of the guide were used: one for the EPC
13
14 arm and one for the UC arm. Both included questions about the patient's cardiac event,
15
16 experience of cardiac rehabilitation, mental wellbeing during treatment, and relationship with
17
18 the cardiac nurse. The version used with the EPC arm also included questions about
19
20 experience of EPC and treatment adherence.
21

22
23 Eight of the eighteen patients interviewed were male and all the interviewees reported their
24
25 ethnicity as White British. The mean age of interviewees was 67.0 (age range 50-79 years)
26
27 and their average pre-treatment PHQ-9 score was 13.9. Cardiac events reported by the
28
29 patients included heart attacks, angina, cardiomyopathy, heart failure and valve disorder
30
31 treated through coronary artery bypass grafts, stent insertion, valve replacement, medication
32
33 or a combination of these. All interviewees had started their cardiac rehabilitation
34
35 programme and attended at least one cardiac nurse appointment. The interviews with EPC
36
37 patients on average lasted longer than those held with UC patients (52 minutes versus 32
38
39 minutes).
40
41

42
43 Seven nurses (all female) from four of the five intervention teams were interviewed. No
44
45 nurses from the fifth team were interviewed as this team did not recruit any patients. Nurses
46
47 were interviewed once they had delivered EPC to one or more patients. A topic guide was
48
49 used and covered the following areas: experience of delivering EPC, dealing with patients at
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51 risk of suicide or self-harm, and impact of delivering psychological care on their relationship
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53 with patients.
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3 The nurse interviews were held by RW between December 2015 and March 2016. RW was
4 known to the nurses, as she had observed the two training days. The first three nurse
5 interviews were conducted in person. The remaining four were held by telephone, as these
6 nurses were geographically dispersed. As in the case of the patient interviews, nurses
7 provided written consent to be interviewed at the time of interview, or completed and
8 returned a consent form prior to interview, depending on whether they were interviewed in
9 person or over the telephone. At the time of interview, each nurse had delivered EPC to
10 between one and four patients. The interviews lasted between 38 to 64 minutes.

11
12 Ethical approval to conduct the pilot trial and the qualitative work nested within it, was given
13 by NRES Committee South West – Exeter (reference: 14/SW/0139).

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Data analysis

Data collection and analysis proceeded in parallel, so that early insights could inform the focus of later interviews. Both patient and nurse interviews were audio recorded and fully transcribed. Both interview sets were analysed thematically, as this allowed comparisons to be made within and across the interviews and highlighted patient and nurse views towards specific issues, e.g. the feasibility of cardiac nurses providing psychological care.

Initially, KMT and RW independently read a sample of nurse and patient transcripts in order to identify emerging themes and to develop a preliminary coding frame. They then met to discuss their coding. This discussion led to two coding frames being drafted: one for each data set. Where possible, similar codes were used within each coding frame to assist triangulation of nurse and patient accounts. Once the coding frames had been agreed, transcripts were manually coded and data pertaining to each code summarised in tables using an approach based on framework analysis.²³ The researchers then read and re-read the tables to identify key themes and deviant cases, and to highlight similarities and differences between the data sets.

Results

Analysis of the data highlighted patients and nurses' views on the importance and benefits of providing psychological care within cardiac rehabilitation programmes, indicated the extent to which patients and nurses felt it was acceptable and practical for nurses to provide this care, and identified issues relevant to service planners regarding when, where and how psychological support should be provided in cardiac rehabilitation.

Below, quotes have been reproduced to illustrate key points. They have been tagged according to whether a patient or nurse is being quoted, and using the interviewee's assigned identification (ID) number.

The need for psychological support

Both EPC and UC patients described the significant impact their cardiac event had had on their emotional wellbeing. Most reported experiencing a dramatic loss of self-confidence, panic attacks, sleeplessness, and/or a lack of energy and motivation. One individual stated that he had felt '*mentally and physically shell-shocked*' (EPC, patient 12) and others described how they had been suicidal:

'It just all came out and I was surprised at myself, to be honest, I had no idea that I was, my overwhelming feeling was disappointment that I'd actually survived and that frightened me because I've never felt that before [suicidal]...' EPC, patient 14

'I don't show it [how they feel] ... you feel really drained and really start thinking the worst and what's the easiest way out which is, and then you think "which is the easiest way out tablets or." [speech trailed off]' EPC, patient 9

The intensity of this emotional response may have been partly due to the fact that patients were aware of the contrast between their former and current self, and what they had lost following their cardiac event:

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2
3 *'It was a horrible, horrible experience, I just felt my life was ebbing away, and I've*
4 *never felt that low before... I had no go in me, no energy, no focus, horrible, horrible*
5 *sensation.'* UC, patient 2
6
7

8
9
10 *'I was angry, frightened, upset... I got very depressed, I lost my job, I loved my job...*
11 *suddenly everything had been ripped out from under my feet and I got very depressed,*
12 *very anxious and felt a failure.'* EPC, patient 17
13
14
15

16 Some patients described feeling supported by family and friends, while others detailed how
17 they had been unable to discuss how they felt with others. In addition, most patients reported
18 the time between being discharged from hospital to their first cardiac rehabilitation
19 appointment as particularly difficult. Several patients described feeling lonely as they had
20 very little or no family around, and others recalled feeling unable to cope after the 'cossetted'
21 (EPC patient 13) hospital environment and cut 'adrift' (EPC patient 14) from professional
22 help upon hospital discharge.
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31 When focusing on the nurse accounts, it was apparent that all the nurses viewed
32 psychological care as a core component of cardiac rehabilitation and had provided
33 psychological support prior to their involvement in CADENCE. Nurses had routinely
34 screened for depression and anxiety using Hospital Anxiety and Depression Scale (HADS).²⁴
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40
41 In terms of the content of psychological support provided, there was local variation. Most
42 nurses had provided support by giving talks on stress and relaxation, and some had also
43 referred patients to their GP or encouraged patients to self-refer to Improving Access to
44 Psychological Therapies (IAPT) services, which some nurses described as having good
45 relations with. Interestingly, one nurse's comments implied the psychological aspects of
46 cardiac rehabilitation could dominate over the physical:
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54 *'I've got to be honest, I mean, sometimes I've left a cardiac rehabilitation clinic and*
55 *all that we have addressed is the psychological side of things.'* Nurse 5
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1
2
3 Having been asked within the trial to screen patients using the PHQ-9, which includes a
4 question specifically about suicidal thoughts, nurses became aware that when previously
5 using the HADS, they might not have identified patients who were at risk:
6
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8

9
10 *'Now it's a lot more formalised and I'm more aware of that patient, because before I*
11 *wasn't picking them up, because I wasn't doing the PHQ-9.'* Nurse 1
12
13

14 Some nurses described being surprised by how frequently they now identified patients with
15 such thoughts, and how completing the questionnaire provided patients with an opportunity
16 to discuss their mental health which would often *'come a bit out of the blue'* (Nurse 4).
17
18
19

20 ***The acceptability and feasibility of nurses providing psychological care***

21 Both EPC and UC patients said they had developed good relationships with their cardiac
22 nurse and viewed them as someone they could talk to. The UC patients, however, described
23 how they had not discussed their mental wellbeing with their nurse in any detail, if at all.
24
25
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29 Interviewer: *'Did the nurse talk to you at all about your anxiety at the time or*
30 *anything that she could help you with, did she give you a leaflet or did she talk about*
31 *it?'*
32
33
34
35

36 UC, patient 1: *'No, no, because I don't expect she knew about it. Unless she knew*
37 *about it and didn't say nothing. As far as I can remember, it was never ever talked*
38 *about.'*
39
40
41
42

43 Three of the UC patients mentioned they would have liked to have spoken to their nurse
44 about their mental wellbeing, but then implied they had not been given the opportunity to do
45 so.
46
47
48

49 *'They [the nurses] are doing a brilliant thing, I cannot fault them... but they're very*
50 *structured, they do what they do to help you and it's a great thing... it's just when you*
51 *have got anxieties or you're worried about something... it's a shame, I felt that there*
52 *wasn't enough of the one to one.'* UC, patient 2
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3 EPC patients reported receiving EPC before, during or after attending their rehabilitation
4
5 fitness session. They had welcomed the opportunity to talk about their emotions, felt
6
7 comfortable with their nurse providing both physical and mental support, and were confident
8
9 in the nurse's ability to do this. It was also apparent that they valued the focus of their care
10
11 encompassing both their mental and physical health:
12

13
14 *'It was a good surprise in that I thought the cardiac rehab would just be "Hello! Do*
15
16 *a few exercises" and that's it. I thought it was really brilliant, that it was looked at*
17
18 *holistically, brilliant. I came out thinking, "oh this is a real breath of fresh air, that*
19
20 *people should actually look at me as a total person and not just as a patient with a*
21
22 *dodgy heart" sort of thing.'* EPC, patient 13
23

24
25 *'To have somebody that deals with the mental health side as well as the physical I*
26
27 *think is incredibly important... it shouldn't be just about rehabilitating the body, it*
28
29 *should be rehabilitating the mind as well.'* EPC, patient 17
30
31

32 EPC patients viewed the one-to-one dedicated time they had had with their nurse to discuss
33
34 their mental health as crucial to their physical and mental recovery, and two participants who
35
36 had experienced suicidal thoughts described this input as lifesaving:
37

38
39 *'Without people like you and [name of nurse] talking to me and me talking to you, I*
40
41 *might not be here now.'* EPC, patient 8
42

43
44 *'I think a lot of people when they commit suicide and things like that... they just feel*
45
46 *useless to everybody and nobody and the good thing with that [EPC] is they do help*
47
48 *you... it's certainly helped me.'* EPC, patient 9
49

50 Talking to a nurse had allowed patients to express how they felt, to better understand why
51
52 they felt low, and had encouraged them to talk to others. In addition, EPC patients described
53
54 how BA had enabled them to see the link between their mood and certain activities, which in
55
56 turn had led to them changing or increasing activities to improve their mood.
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3 However, despite valuing the care they had received, some EPC patients commented that
4 they would have liked more psychological support but were aware of the '*tremendous*
5 *pressure*' (EPC patient 12) nurses were working under, so felt it would be inappropriate to
6 ask for more time. Also, not all patients felt nurses were best placed to deal with their mental
7 health needs. For example, one patient commented that she did not want to talk about mental
8 health with a 'physical' health practitioner. In addition, several patients mentioned they had
9 received their EPC session in a corner of the gym or leisure centre because the nurse did not
10 have access to a private room. Although most participants said they were not worried about
11 the lack of privacy, one participant described how she felt uncomfortable discussing her
12 emotions in public.

13
14 Comments by nurses indicated that they felt capable of providing psychological care. They
15 described the training they had received as part of CADENCE as covering everything they
16 needed to know and stated that, with experience, they had found ways to deliver EPC
17 smoothly. In addition, one nurse commented that patients learnt quickly and implied that as
18 patients progressed through treatment, less work was involved:

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'Within a couple of weeks I think the patients saw very quickly how their mood was related to their activities and they got it very quickly. So after that actually the time spent with them prior to the group was more as you say coordinating them to the next phase ... and actually moving them onto actually allocating routine activities.' Nurse

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Nurses commented that, having completed the CADENCE training, they felt more able to effectively treat depression and had formalised their approach. They also said they now spent more designated time with patients discussing mental health, which they felt patients valued, and thought BA had encouraged patients to be more physically and socially active. However, nurses described how delivering EPC could be time consuming. An EPC session

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2
3 incorporating the BA component could take between 10 and 40 minutes, and even longer if
4
5 the PHQ-9 indicated that the patient was 'at risk'. Time was also needed to receive clinical
6
7 supervision and to chase patients who had not attended. The impact of this increased
8
9 workload meant nurses shortened their lunch breaks, delayed going home, ran late with other
10
11 patients and/or asked a colleague to 'double up' (Nurse 6) so one of them could focus on the
12
13 EPC patient while the other took the fitness session.
14

15
16 This increase in workload also meant some nurses felt 'lucky' (nurses 1, 2, 6) that they had
17
18 not needed to see more than one EPC patient at the same rehabilitation session or on the same
19
20 day. One nurse (2) also said it would be 'mind-numbingly brain taxing' to deliver EPC to
21
22 more than one person in the same session or on the same day, suggesting nurses would also
23
24 have experienced this situation as mentally and emotionally demanding.
25
26

27
28 In addition to having limited time, nurses reported having little or no access to a private room
29
30 where they could talk to patients about sensitive issues. Most nurses worked across various
31
32 sites, either within their hospital or within the community e.g. leisure centres or health
33
34 centres. A lack of space led to nurses asking EPC patients to come early to a rehabilitation
35
36 session or to stay on afterwards, and talking to patients in a quiet corner of the fitness room.
37
38 The latter situation was viewed as not ideal but perhaps less intimidating for patients than
39
40 meeting in a private room.
41
42

43 ***When and how to provide psychological care for depression***

44
45 Patients felt that embedding psychological support within cardiac rehabilitation for patients
46
47 with symptoms of depression was timely and appropriate. However, some commented they
48
49 would also have liked to have commenced such care earlier, either when in hospital following
50
51 their cardiac event or immediately following hospital discharge, as they had experienced this
52
53 time as particularly difficult. Patients also thought psychological support should be
54
55 continued beyond cardiac rehabilitation if it was still needed:
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3 *I think additional help after this [end of EPC] is a definite must for some people, it*
4 *was for me... if they [your nurse] feel that you need more help, that should be offered*
5 *definitely. Or if it's a waste of time, cos you just literally will go back to how you were*
6 *before, I think.* ' EPC, patient 11

11 Some patients suggested some aspects of EPC could be delivered within a group, as they had
12 found it reassuring to talk to other patients about their experiences and to hear about theirs.
13 However, other patients thought a group environment might inhibit what individuals
14 discussed, acknowledging that they themselves would struggle to publically talk about their
15 emotions.

22 Some patients had been care coordinated to other services, e.g. to their GP or to IAPT
23 services, and had found this beneficial. However, six EPC patients said they would not
24 discuss their mental health with their GP, believing that their GP would only prescribe an
25 antidepressant:
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31 *I'd say what's the point in me going to the doctors, he gives me these bloody tablets,*
32 *I'm not going to live on sodding tablets, what's the point?' EPC, patient 9*

36 Nurses commented that patients who had scored just below 10 on the PHQ-9 may have
37 benefited from receiving psychological support. They also raised the possibility of delivering
38 psychological support to groups rather than individual patients, as they too realised that
39 individuals could benefit from talking about their experiences with others:
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45 *Patients get a huge amount of benefit just in talking to each other, don't they, and so*
46 *the problem, the trouble solving, the solutions, "oh I do this", and just seeing how*
47 *other people are getting on, the little supportive networks that they strike up when*
48 *they're actually in the waiting room waiting for us to assess them and they've already*
49 *got their own counselling and social network going on there, so I do recognise the*
50 *power of actually getting them together as a group.* ' Nurse 5
51
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3 Yet, like patients, they also acknowledged that some patients would not want to discuss their
4 personal views in front of others. A suggested possible solution was to have an introductory
5 EPC session in a group setting, and then offer one-to-one sessions to explore personal issues.
6
7 In terms of where to provide psychological support, nurses were aware that often patients did
8 not want to be referred to their GP and described how patients had declined referrals to other
9 services for their mental health. They also felt that integrating psychological care within
10 cardiac rehabilitation had led to patients being more receptive and willing to address their
11 mental health:
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20
21 *'...ninety percent of the time people would say "no I don't want to do that [be*
22 *referred] I'm just going to work through it, I'm going to see how I get on". So actually*
23 *being able to offer an extra option that didn't involve all of that, people were more*
24 *receptive.'* Nurse 2
25
26
27
28

29
30 Nurses also remarked that when they had referred patients to another service, they were not
31 informed whether or not the patients had attended. Thus, although recognised as a challenge,
32 most nurses commented that if additional resources could be made available, then integrating
33 psychological support, such as EPC, within cardiac rehabilitation programmes would be the
34 ideal situation.
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40 **Discussion**

41
42 Both patient and nurse accounts highlighted the need to provide psychological support to
43 patients with symptoms of depression receiving cardiac rehabilitation. Patients detailed the
44 significant emotional impact their cardiac event had on them, and described psychological
45 support as not only key to their mental recovery but also as supporting their physical
46 wellbeing. Prior to their involvement in CADENCE, nurses had viewed psychological care
47 as an essential part of their role. The training they had received during the CADENCE trial
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3 had led them to formalise their approach and to spend more dedicated time one-to-one time
4
5 with patients.
6

7 Both patients and nurses' accounts suggested that psychological support should be embedded
8
9 within cardiac rehabilitation programmes, rather than provided out with through a parallel
10
11 service, and that EPC appeared effective in treating symptoms of depression in this patient
12
13 group. However, it was apparent that nurses were time-constrained and found it challenging
14
15 to provide psychological support within their existing workloads.
16
17

18 In terms of future delivery of psychological support, this study raised issues relevant to when,
19
20 where and how this could be done. Patients interviewed argued for psychological support to
21
22 commence earlier, either during hospital immediately following a cardiac event or upon
23
24 hospital discharge. On average, most patients spend only three days in hospital following a
25
26 heart attack²⁵ and are discharged back to the community with no formal support during the
27
28 initial weeks prior to commencing cardiac rehabilitation. Patients in this study talked about
29
30 feeling lonely and cut adrift from professional help following hospital discharge, and this
31
32 appeared to compound their low mood. They also described a sense of loss; loss of ability,
33
34 loss of confidence and a loss of roles. The theme of loss was one that underpinned all the
35
36 interviews conducted by Simmonds et al¹⁴ in their study of patients' views and experiences of
37
38 living with depression and CHD. It is also discussed by Barley et al²⁶, who report primary
39
40 care practitioners viewing patients' loss of a valued role or ability to fulfil responsibilities as
41
42 contributing to the development of depression following a cardiac event. In addition to
43
44 suggesting that psychological support commenced earlier, patients also suggested it
45
46 continued after discharge from a rehabilitation programme where necessary. Although
47
48 evidence suggests depression after cardiac rehabilitation is not common, when present it is
49
50 usually associated with other forms of psychological stress.²⁷ As there is an association
51
52 between psychological stress and post-cardiac rehabilitation morality, it has been suggested
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2
3 that patients with CHD are assessed for psychological risk factors both prior to and after
4
5 receiving cardiac rehabilitation.²⁷
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7
8 Our findings suggest psychological support should be embedded within cardiac rehabilitation
9
10 programmes, as patients welcomed cardiac nurses attending to both their physical and mental
11
12 wellbeing, viewing this as providing a more holistic approach. In addition, nurses felt
13
14 integrating psychological support within existing programmes encouraged patients to
15
16 acknowledge their need for psychological input. Nurses were also aware that patients often
17
18 declined referrals to other services, and both patients and nurses mentioned patients'
19
20 reluctance to consult a GP about their mental health.
21

22
23 Whole system approaches that integrate mental and physical health care are viewed as the
24
25 most appropriate way to support patients living with mental and physical morbidity,²⁸ and
26
27 other researchers have reported patients with CHD and depression as being ambivalent about
28
29 seeking help from a GP.¹⁴ Here patients linked this reluctance to their assumption that a GP
30
31 would prescribe an antidepressant. Yet GPs may be hesitant to prescribe antidepressants for
32
33 patients with CHD, as they are aware patients may be unwilling to take an antidepressant and
34
35 view other forms of treatment that encourage patients to be physically and socially active as
36
37 potentially more effective for depression in this patient population, e.g., exercise on referral,
38
39 cardiac rehabilitation.²⁶
40
41

42
43 Another reason patients might be reluctant to seek help is the stigma that surrounds mental
44
45 health. Nurses reported patients only talking about how they felt once the nurse had screened
46
47 them as positive for symptoms of depression and/or at risk of suicide or self-harm. Non-
48
49 disclosure of mental health problems by patients with physical conditions can compound
50
51 management problems.²⁹ Here it was apparent that nurses had been able to identify patients
52
53 at risk because they had been asked to screen patients using the PHQ-9, which explicitly asks
54
55 about suicidal ideation. Thus, cardiac teams may want to consider using the PHQ-9 in the
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3 future, alongside training to ensure nurses manage self-harm risk appropriately and in a way
4
5 that is consistent with clinical guidelines.^{17, 18}
6

7
8 Although both patients and nurses advocated for psychological support to be provided within
9
10 rehabilitation programmes, both acknowledged that nurses found it challenging to provide
11
12 this care within their existing workloads. Group-based approaches were suggested, as both
13
14 sets of interviewees were aware that patients could benefit from interacting with other cardiac
15
16 patients. This could reduce nurse workload but whether group delivery would be possible
17
18 would partly depend on the intervention. For an intervention such as EPC, where there were
19
20 both general and patient-specific components, it might be possible for nurses to deliver some
21
22 aspects of the intervention in a group setting and other components on a one-to-one. For
23
24 example, BA could be discussed during group educational talks and care-coordination
25
26 delivered on an individual basis. Doing so would ensure all patients receiving cardiac
27
28 rehabilitation received information on BA; a move which would address the view expressed
29
30 by nurses here, that psychological support could benefit all patients and not just those who
31
32 had screened positive for depression. Such an approach would concur with the recent
33
34 findings of Blumenthal et al,³⁰ who observed the potential benefit to longer-term
35
36 psychological morbidity when stress management was offered to all patients following an
37
38 acute cardiac event.
39
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43 In terms of what psychological support should be provided, this paper did not focus on
44
45 patients and nurses' specific views of EPC, as the aim was to assess their more general views
46
47 on provision of psychological support. However, it was evident that nurses and patients
48
49 viewed the patient-led, nurse supported BA component of the intervention as effective in
50
51 helping patients manage their depression, and this component fits with NICE guidance for
52
53 treatment of depression in people with physical health problems, as it proposes that
54
55 individuals with depression and physical health problems start on low intensity treatments,
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1
2
3 including guided self-help and physical activation.¹⁸ In addition, a recent process evaluation
4
5 reports that patients who have received BA for depression perceive it as leading to both
6
7 cognitive and behavioural changes, which they view as not only improving their symptoms
8
9 but also their lives more broadly.³¹ In terms of care coordination, whilst our findings suggest
10
11 psychological care should be embedded within cardiac rehabilitation programmes, some
12
13 patients had benefited from being referred to other services and this did give patients greater
14
15 treatment choice. Lastly, the intervention was developed and revised in response to
16
17 comments from patients and nurses involved in the feasibility study that preceded the
18
19 CADENCE pilot trial.³² Thus, EPC is more likely than other interventions to be acceptable
20
21 to patients and nurses, although findings from the pilot trial showed it remained too
22
23 burdensome for nurses to deliver long-term.
24
25
26

27 ***Study strengths and weaknesses***

28
29 Individuals recruited to the CADENCE pilot trial needed to score 10 or more on the PHQ-9
30
31 in order to be eligible to take part. Strictly speaking this score reflects depressive symptoms,
32
33 rather than a formal clinical diagnosis of depression. However, in the UK, front-line primary
34
35 care mental health services (e.g. GPs, IAPT mental health workers) routinely use the PHQ-9
36
37 to diagnose and actively manage/treat depression. In addition, the PHQ-9 has been found to
38
39 be as good as a diagnostic gold standard in detecting depression.³³
40
41
42

43 The relatively small number of patients and nurses recruited to the trial limited who could be
44
45 approached for interview and thus the possibility of sampling individuals purposefully to
46
47 ensure maximum variation within the sample in relation to participant characteristics. This
48
49 means we cannot be confident that data saturation was reached. It also means certain groups
50
51 of individuals are not represented, e.g. none of the patients interviewed were from an ethnic
52
53 minority. This might limit generalisability of the findings to the wider population of patients
54
55 or nurses using cardiac rehabilitation services in the UK. However, we interviewed patients
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3 from seven different teams and nurses from four of the five participating intervention teams.

4
5 As many of the key findings were evident across the interviews, there is little reason to think
6
7 the findings reported here would not be relevant to other cardiac rehabilitation programmes.
8

9 10 ***Conclusions and implications***

11 Both patients and nurses highly value psychological support being delivered by nurses within
12
13 cardiac rehabilitation programmes, but time and resource constraints raise significant barriers
14
15 in terms of implementation, so alternative approaches need to be considered. Given that
16
17 nurses viewed provision within rehabilitation programmes as ideal, and mentioned good
18
19 relations with local IAPT services, an alternative approach could be nurses co-ordinating
20
21 IAPT-trained psychological wellbeing practitioners to provide psychological support within
22
23 cardiac programmes. In terms of treatment offered, it could include BA, as this was viewed
24
25 as potentially effective by patients and nurses, and is a treatment that can be successfully
26
27 delivered by junior mental health workers.²⁰
28
29
30

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35
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43
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45
46 and Dr Christine Wright.
47
48

49 50 **Contributors**

51
52 KT was the principal investigator for the qualitative work nested within the CADENCE study
53
54 and led on writing this manuscript. RW conducted and analysed the interviews on which the
55
56 paper is based. JC was chief investigator for the CADENCE study, and SR the scientific
57
58
59
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3 lead. DR, CD, and MG were other members of the CADENCE team. All authors
4
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6

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15
16 NIHR, NHS or the Department of Health.
17

18 19 **Competing interests**

20
21 We have read and understood BMJ policy on declaration of interests and declare that we have
22
23 no competing interests.
24

25 26 **Data sharing statement**

27
28 The datasets analysed during the current study are not publicly available, as participants were
29
30 not asked to consent to this at the time of data collection. However, if requests for data
31
32 sharing are made, the University of Bristol Data Access Committee will consider them and
33
34 decide whether or not they can be met.
35

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Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interviews?	Page 7 and 8: RW conducted the interviews.
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	BSc, RGN.
3. Occupation	What was their occupation at the time of the study?	Research Fellow.
4. Gender	Was the researcher male or female?	Female.
5. Experience and training	What experience or training did the researcher have?	Page 7: 'RW, a researcher with over 10 years' experience of conducting qualitative research'
<i>Relationship with participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	Page 8: RW was known to the nurses, as she had observed the two training days.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Participants were told that RW was the researcher employed on the study to conduct the qualitative work.
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	None were reported.
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	The study drew on the principles of grounded theory in terms of insights from earlier data collection informing the focus of later interviews (page 8)

<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 7: we explain that, ‘as it took longer than expected to recruit patients to the trial, in the end, all 15 EPC patients and 6 of the UC patients were approached for interview. Page 8: we explain that all the nurses from the four intervention teams who recruited patients were interviewed.
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	We explain (page 6) that all patients and nurses involved in the trial, at the time of being recruited to the study, agreed to their details being passed onto the qualitative research team so they could be approached for interview. In terms of approaches used, RW contacted patients by telephone, and nurses by email.
12. Sample size	How many participants were in the study?	18 patients (page 7) and 7 nurses (page 8) were interviewed.
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Page 7: we explain that ‘Two of the EPC patients approached for interview were uncontactable and another EPC patient declined to be interviewed’.
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	We explain both patients and nurses were interviewed either face-to-face or by telephone (page 7 and 8).
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No.
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	On page 7, we report patients’ gender, ethnicity, mean age and pre-treatment

		PHQ-9 score. We also detail what cardiac events patients reported. On page 8, we state all the nurses interviewed were female.
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	We explain on pages 7 and 8 topic guides were used. The guides were not pilot tested.
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	We explain on page 8 all the interviews were audio-recorded.
20. Field notes	Were field notes made during and/or after the interview or focus group?	Field notes were taken immediately after each interview.
21. Duration	What was the duration of the interviews or focus group?	Length of the interviews is provided on page 8
22. Data saturation	Was data saturation discussed?	Data saturation is mentioned in Discussion, page 20.
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No.
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	We explain on page 8, two researchers coded data.
25. Description of the coding tree	Did authors provide a description of the coding tree?	No.
26. Derivation of themes	Were themes identified in advance or derived from the data?	On page 8, we have written 'Initially, KMT and RW independently read a sample of nurse and patient transcripts in order to identify emerging themes and to develop a preliminary coding frame.'
27. Software	What software, if applicable, was used to manage the data?	We state on page 9 'transcripts were manually coded and data pertaining to each code summarised in tables using an approach based on framework

		analysis'
28. Participant checking	Did participants provide feedback on the findings?	No.
<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Quotes have been used in the Results section and, as explained on page 9, 'according to whether a patient or nurse is being quoted, and using the interviewee's assigned identification (ID) number.'
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	We have indicated when a view was expressed by just one individual, e.g. page 9, 11, 13