## Implementing a healthcare professional-supported digital intervention for cancer survivors in primary care: a qualitative process evaluation of Renewed

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## Abstract

**Background:** Primary care has an important role in supporting cancer survivors, yet support is limited because of practitioners’ perceived lack of expertise and time. A digital intervention for cancer survivors could provide an efficient way for primary care staff to support cancer survivors without the need to accumulate expertise and skills to help patients make behaviour changes, providing very brief support alongside this could maximise adherence to the digital interventions. Renewed is a digital intervention combining online behaviour change advice with brief healthcare practitioner support from a nurse or healthcare assistant. Knowledge about the views and experiences of primary care staff providing support alongside a digital intervention for cancer survivors is sparse, limiting understanding of the acceptability and feasibility of this type of intervention.

**Objective:** To explore Supporters’ experiences of providing support to cancer survivors using Renewed, to understand potential barriers and facilitators to implementation of Renewed in practice, and investigate strengths and weaknesses of the intervention from the perspective of healthcare professionals.

**Methods:** This was a qualitative process evaluation, nested within a large trial evaluating Renewed. Twenty-eight semi-structured telephone interviews were conducted with nurses and healthcare assistants. Data were analysed using inductive thematic analysis.

**Results:** Four themes were developed during analysis which reflected factors that Supporters identified as hindering or enabling them to provide support alongside Renewed Online (Themes: Renewed Online as an acceptable digital tool with some improvements; confidence to enact the Supporter role; practicalities of delivering support alongside a digital intervention; and managing a patient-led approach). The analysis suggests that Supporters perceived that a digital intervention such as Renewed would be beneficial to support cancer survivors in primary care, and fit within current practices. However, barriers to providing support alongside a digital intervention were also identified, including concerns about how to facilitate rapport building and, in a minority, concerns about employing a non-directive approach, in which the majority of advice and support is provided through a digital intervention, with brief additional support provided by primary care staff.

**Conclusion:** These findings add to the literature about how best to provide support alongside digital interventions, suggesting that whilst most practitioners cope well with a non-directive approach, a minority require more training to feel confident implementing this. This study suggests that barriers to providing formal support to cancer survivors in primary care could be successfully overcome with an approach like Renewed, where a digital intervention provides most of the support and expertise, and healthcare practitioners provide the additional brief human support to maximise engagement. Strategies to maximise the chances of successful implementation for this type of intervention are discussed.

Keywords: Process evaluation; Digital intervention; Primary care; Healthcare professional; Web-based; Quality of life; Post-treatment; Oncology

## Introduction

In 2018, the total number of people alive within five years of a cancer diagnosis was estimated to be 43.8 million worldwide [1]. Currently, there are 2.5 million survivors in the UK, estimated to increase to 4 million by 2030 [2]. However, up to 86% of people who complete cancer treatment in the UK, Australia and USA experience enduring side effects [3–5] including, fear of cancer recurrence, anxiety, depression, fatigue and weight gain, contributing to a reduced quality of life (QoL) [4].

The globally rising cancer burden places a strain on health systems worldwide [6]. Healthcare professionals (HCPs) based in primary care are central to providing support for people who have had cancer after completion of their primary treatment (e.g. chemotherapy). However, these services are becoming over-stretched and increasingly unable to meet cancer survivors’ needs [7]. For instance, cancer survivors have expressed a need for more support with the emotional effects of cancer and issues like fatigue that can occur for months or years after treatment [8]. Primary care staff describe a lack of clear guidance on how cancer survivors should be supported [9]. Patients and oncologists have expressed concerns that primary care staff are not experts, and their busy workloads lead to deficiencies in continuity of care [8,9], meaning cancer survivors may not receive access to appropriate support with their ongoing symptoms following cancer treatment. Therefore, there is a need for clearer, more effective and cost-efficient means of providing support. Digital interventions, such as websites or mobile applications, offer potential for helping cancer survivors improve their QoL [10]. The addition of brief human support can boost engagement with digital interventions [11,12]. Digital interventions combined with brief support from primary care staff might facilitate improved QoL after cancer treatment. It may provide efficient and low-cost models for delivering support, without the need to accumulate expertise in the skills and knowledge needed to help patients make the behavioural changes needed to increase their QoL. However, the acceptability and feasibility of implementing digital interventions among cancer survivors in primary care is still to be determined. An important aspect to this involves understanding the capability of HCPs to deliver brief support alongside digital interventions.

Renewed [13–16] is a complex intervention designed to improve cancer survivors' QoL. It combines a digital intervention focussed on changing key behaviours that can improve cancer survivors' QoL with brief support from a nurse or healthcare assistant to maximise engagement. Renewed was designed for implementation in primary care within the UK’s National Health Service (NHS). Renewed is currently being tested in a randomised control trial (RCT) to determine its effectiveness and cost-effectiveness. In addition to determining effectiveness and cost-effectiveness within a RCT, it is critical to examine whether an intervention might implement well in practice. Understanding barriers and facilitators to implementation could help to optimise the implementation of Renewed Online, and also provide helpful insights for others developing digital interventions which include human support.

National guidance recommends conducting process evaluations to identify: how new interventions are implemented in practice; the likely mechanisms through which they might produce an effect; or factors in the healthcare environment which might stop an intervention from producing an effect [17]. The current study reports a process study exploring healthcare professionals’ perceptions of Renewed. Whilst the RCT of Renewed [13] is ongoing; as recommended by the Medical Research Council (MRC) guidelines, qualitative process data are reported here prior to knowledge of the RCT outcomes to avoid biased interpretation [17]. This process study was used to explore potential barriers and facilitators to implementing Renewed in primary care and evaluate acceptability of providing this type of support, which might contribute to the success (or not) of the intervention. Specifically, this study aimed to explore: 1. Supporters’ experiences of providing support to patients using the ‘Renewed Online’ digital intervention (from hereon called Renewed Online); and 2. barriers and enablers of successful implementation of Renewed Online in practice.

**Methods**

**Study Design**

The study design entailed a qualitative process evaluation of the Renewed intervention which explored HCPs perceptions of delivering support alongside Renewed Online. Participants in the RCT were randomised to: 1) Renewed Online, 2) Renewed Online with brief human (HCP) support, or 3) usual care. For full details of the Renewed RCT see [13]. Briefly, cancer survivors in the Renewed RCT (n=2712) had completed treatment for either colon (n=432/2712), breast (n=1216/2712) or prostate cancer (n=864/2712). Mean years since completing treatment was four years (Standard deviation (SD)=3.1), mean age was 64.5 (SD=10.9) and mean baseline quality of life score of 72.4 (SD=11.9) (as defined by scores <85 on the European Organization for Research and Treatment of Cancer measure (EORTC; [18])).

Ethical approval was granted by the University of Southampton (ERGO reference: 31000.A8) and NHS (reference: 18/NW/0013) ethics committees. The COnsolidated criteria for REporting Qualitative studies (COREQ) checklist [19] guided reporting (Appendix 1).

**Renewed intervention**

Renewed comprises a component website, ‘Renewed Online’, and brief HCP support. Renewed Online consists of an introductory session that provides an overview of what to expect from Renewed, brief advice about how to treat symptoms and tailored recommendations about which components of the programme would be most helpful based on users’ responses to the European Organization for Research and Treatment of Cancer measure (EORTC; [18]). Users can then choose to use ‘Getting Active’ (support for increasing physical activity); ‘Eat for Health’ (support with healthy eating); ‘POWeR’ (an evidence-based weight loss programme[11,20–23]) and/or ‘Healthy Paths’ (support with reducing stress/difficult feelings[24]). A full description of Renewed Online is provided in Figure 1, incorporating Template for Intervention Description and Replication (TiDIER) guidelines [25] (Appendix 2).

*Healthcare professional support*

The HCP support was designed to boost adherence to both using the website and engaging with the offline behaviour changes (e.g. physical activity) through promoting autonomous motivation. Cancer survivors allocated to the ‘Renewed Online with brief human support group’ were able to access support sessions provided by a HCP, delivered using the ‘CARE’ approach (congratulate, ask, reassure and encourage)[26]. CARE was based on self-determination theory, and aims to facilitate an autonomy-supportive relationship, which promotes feelings of autonomy, competence and relatedness [21], thus building internal motivation for change [27]. CARE was designed to be easy to deliver and fit within HCPs’ busy schedules, without practitioners needing to become experts in a particular condition or way of treating that condition, as this more detailed behavioural support was instead provided by the website.

Supporters were practice nurses, practice-based healthcare assistants or clinical research nurses, who were part of a comprehensive research network outside of GP practices, a model representing delivery of care similar to that provided by private companies supporting digital interventions in the NHS, who tend to provide phone, rather than in-person support and do not have access to patient records [28]. At the start of the study, Supporters completed brief 15-20 minute online training outlining study procedures and how to provide support to patients using the CARE approach. Prior to sessions, Supporters were asked to send emails to patients two and four weeks after patients began the study. Friendly email templates were provided which were framed around the CARE approach, asking how patients were getting on and encouraging them to get in touch for a support session if they wished. Ten-minute support sessions were offered at two, four and eight weeks after patients had begun the study via telephone, email or face-to-face. Table 1 shows a brief summary of the key messages from the Supporter training about how to provide support.

**Sampling and recruitment**

Supporters were identified for interviews through the Renewed Supporter database, the study team’s record of HCPs providing support as part of the RCT. Emails or phone calls were used to invite Supporters to participate in a telephone interview about their experience of supporting patients using Renewed Online. In the early stages of recruitment Supporters were sampled purposively based their job role (practice nurse, practice-based healthcare assistant or clinical research nurse), however recruited Supporters often had not undertaken any support sessions or only supported one patient. Supporters were then purposively sampled based on the number of patients they had supported to ensure inclusion of those who had supported multiple patients to explore any variation in experiences. Supporters were provided with a participant information sheet and after considering this asked to confirm informed consent online.

**Procedure**

Interviews were conducted between September 2019 and January 2020, each lasting approximately 15-30 minutes, median 21 minutes. Two researchers conducted the interviews (JS and JSB). A semi-structured interview schedule was developed by a qualitative researcher (JS) and experienced health psychologist (KB). The interview schedule explored: Supporters’ experiences of providing support alongside the digital intervention; perceptions of online Supporter training; experiences of support appointments; perceptions of the CARE approach and Supporters’ perceptions of the Renewed programme.

**Data analysis**

All interviews were audio-recorded, transcribed verbatim and then imported into NVivo 12 [29]. An inductive thematic analysis was performed based on aspects from Braun and Clark’s 6-step framework [30] and Joffe and Yardley [31]. JS familiarised herself with the data before coding interviews. A coding manual was created and continually updated to reflect the ongoing analysis. Identification and validation of developing themes were achieved through an iterative data analysis process with frequent discussions with KB, RE and AR. Deviant cases were considered to ensure that minority views were not overlooked [32]. An audit trail and reflective log were completed to maintain rigour during analysis. Constant comparison (a technique in which each interpretation and finding is compared with existing findings as it develops from data analysis [33]) was employed to examine potential similarities or differences in the reported experiences of different types of Supporters [34].

## Results

### Participant characteristics

One hundred and eight Supporters were invited to interview. Fifty-six did not reply to invitations. Twenty-one could not be interviewed, as they did not undertake any support sessions. Two did not have the time to take part in an interview, and one could not accurately recall supporting patients. The final sample included twenty-eight HCPs consisting of 16 practice nurses, six clinical research nurses, and six practice-based healthcare assistants, who provided support for patients at forty-five GP practices in total. Almost all were female (n=27).

###  Themes

Four themes were developed that gave insight into Supporters’ experiences of providing support alongside the digital intervention and factors that hindered or enabled them to support patients as intended. The themes were: 1) Renewed Online as an acceptable digital tool with some improvements, 2) Confidence to enact the Supporter role, 3) Practicalities of delivering support alongside a digital intervention, and 4) Managing a patient-led approach. Each theme is outlined below, including representative quotes to illustrate key points. Participants are referred to by their identification number, their role and the number of patients they supported.

#### Renewed Online as an acceptable digital tool with some improvements

Overall, Supporters perceived Renewed as consistent with current practice, with increasing use of online interventions. They could see how a digital tool like Renewed Online would be useful for patients, especially as it allowed patients to work through rehabilitation at their own pace.

“They’re [GPs] signposting patients to online resources all the time more and more at the moment…So this [Renewed Online] is a similar thing. So I could see that it would be beneficial and would fit in.” (Participant 10, practice nurse, 2 patients)

Email support was also generally acceptable to Supporters. However, a few worried that patients were not receiving emails from the Supporter website, so they preferred using their own email to contact patients.

A minority of Supporters reported that their patients described the content of the information on the Renewed Online website as generic, not personal and failing to provide anything new. These patients chose not to be part of the programme.

“He felt that the website was very generic and wasn’t personal to him. He was like, “I already know all of that.” he felt that it couldn’t offer him any support at all…I couldn’t then offer him any support with anything because he didn’t want it. He said, “If you could give me advice on specific areas,” which obviously we couldn’t do.” (Participant 23, practice nurse, 1 patient)

Two Supporters raised concern over the timing of providing Renewed Online. They suggested it was important for Renewed to be introduced to patients when they first finish treatment and support from the hospital ends. At that point, they felt that Renewed Online could better support them and be more of a teachable moment, before patients form their own habits for managing side effects or return to old ones.

“What would be brilliant, would be to get it in… very soon after they’ve finished their final treatment…because that’s when they’re perhaps the most vulnerable …giving them a tool where they can work out what’s gonna benefit them in their life at that point. I think two, three years down the line, however they’ve got there, they’ve got there on their own without that [Renewed] kind of support.” (Participant 15, practice nurse, 4 patients)

#### Confidence to enact the Supporter role

Supporters received online training at the start of the study about how to provide support alongside a digital intervention (see Table 1). This explained how to use the CARE approach to support patients’ engagement with Renewed online and emphasised that the supporter did not need to be an expert in cancer. Most Supporters reported that the length of training was adequate and provided clarity on what was needed in the role.

“It was thorough, it explained everything really well I wasn’t left with any questions. It was clear and easy to follow.” (Participant 13, clinical research nurse, 1 patient)

Some supporters possessed prior experience in cancer care and expressed confidence in their role supporting Renewed Online. Although not previously experienced in this area, others still expressed confidence but reported that this had grown as they gained experience of delivering the intervention. Whilst there appeared to be little substantive differences in the experiences of HCPs who supported multiple compared to one patient, the associated greater frequency of delivering support appeared to allow HCPs more opportunity to build confidence.

“The more you do the calls, or the email correspondence… the much easier I feel it’s become.” (Participant 1, clinical research nurse, 3 patients)

On the other hand, deviant case analysis highlighted that two healthcare assistants were the only Supporters to report an initial lack of confidence based on pre-held perceptions that they were unqualified for the Supporter role. The first (Participant 5, 2 patients) reported that training did not prepare her for the role, expressing a lack of understanding of how to provide support, wanting to receive practical demonstrations of someone providing support. The second doubted her suitability for the role, initially being concerned that she was not an expert in cancer. However, these perceptions changed, and their confidence appeared to grow when actually delivering sessions demonstrated that their initial concerns were perhaps unwarranted.

“I felt like a bit of a fraud at the beginning, thinking am I really qualified to do this, I feel like the patient’s phoning me up thinking I’m some sort of expert, but it wasn’t like that at all.” (Participant 17, healthcare assistant, 2 patients)

Differences in where Supporters’ were based (either practice-based or remotely in the case of clinical research nurses) appeared important to their experiences supporting patients. In particular, a few clinical research nurses felt disadvantaged based on their assumption that practice staff were probably more familiar with patients. They felt this would facilitate rapport with patients and improve the quality of support sessions.

“It [Supporter role] would need to be somebody from the practice actually doing it who has access to their medical notes…just so that you’re aware when you’re listening to them, so you know what they’re going through rather than being completely blind.” (Participant 8, clinical research nurse, 3 patients)

#### Practicalities of delivering support alongside a digital intervention

Reflected in this theme is an exploration of the logistical problems Supporters faced delivering support to patients using Renewed Online.

The majority of the current sample expressed difficulty with conducting sessions in the recommended 10 minutes, reporting an average session of 15 minutes. Sessions went over 10 minutes for various reported reasons, including allowing time for introductions, the perception that patients feel lonely and were longing for someone to talk to, and not wanting the patient to feel rushed. In particular, Primary Care staff expressed guilt about potentially rushing patients considering that they had made an effort to come in for sessions. One clinical research nurse expressed difficulty managing the 10-minute sessions because she was not used to working within this time limit.

“I’d given myself longer than what was suggested because I knew from experience that if somebody is opening up to you about how they’re feeling the worst possible thing that you can do is run out of time and have to end it.” (Participant 24, practice nurse, 2 patients)

A few Supporters expressed a preference for lengthening sessions, particularly the first, to allow more time to get to know patients and address any initial concerns. Relatedly, some clinical research nurses reported finding it challenging to build rapport with patients during the brief support sessions.

“The appointment seemed very short. Especially on your initial one. I think your initial appointment should be twenty. So you can get to know the patient a bit before you bang straight into the CARE approach. Otherwise there’s no real time to even introduce myself, introduce themselves.” (Participant 23, practice nurse, 1 patient)

HCPs viewed both face-to-face and telephone support as acceptable, but with different benefits. Face-to-face sessions allowed them to read patients’ body language whereas phone support was better for patients who may have difficulty coming into a GP surgery, due to travel disruptions, weather conditions and location. Additionally, phone sessions gave greater flexibility to Supporters as it was easier to slot into their schedules.

“That [phone sessions] works really well for me because it means that I can support patients when I’m not in the office…that’s given me a greater flexibility with the patients.” (Participant 2, clinical research nurse, 5 patients)

Furthermore, phone sessions reportedly helped some Supporters manage the length of sessions by preventing them from performing healthcare checks unrelated to Renewed. Supporters also expressed less ‘guilt’ of having patients make the journey into the practice.

#### Managing a patient-led approach

Reflected in this theme were Supporters’ perceptions and experiences of using a patient-led approach, and what they saw helpful and found difficult. In this context, a patient-led approach refers to one in which an autonomy-supportive relationship was facilitated using CARE to support the digital intervention, rather than giving advice, which was instead provided through the digital intervention. The majority of Supporters reported that they liked the CARE approach and believed it provided a useful prompt and session guide.

 “I liked that idea [CARE approach]. I thought that was really well planned and it’s easy to remember…a good thing to just prompt you.” (Participant 26, practice nurse, 1 patient)

During sessions, patients would often discuss behaviour change goals and progress. Supporters expressed it was initially a challenge not to give direct advice to patients during sessions. This, however, reportedly became easier as they delivered more appointments. One Supporter expressed that it was nice to see patients actively interested in improving their health.

“It was refreshing to see them wanting to make life changes themselves rather than making lifestyle changes because they’d been advised to by a clinician.”(Participant 24, practice nurse, 2 patients)

Additionally, some Supporters expressed that not giving direct advice was a positive change and welcomed patients being more involved in their care.

“It’s all about them giving us the answers as opposed to the other way round, which I’m all for. I think that’s better.” (Participant 23, practice nurse, 1 patient)

A few Supporters’ experiences portrayed a lack of understanding of the CARE approach and how to implement it, which caused some difficulty when delivering support alongside the digital intervention. For example, one Supporter found it challenging to implement this approach when patients went off on a tangent. She felt this was because she viewed the CARE approach as a “script” to be followed strictly in a specific order, which made conversation rigid.

“I think that’s why sometimes I didn’t manage to get the CARE aspects in the way I’d like because sometimes you would start at one element of it, and you think, ‘Okay, I must make sure I go back to the C element or the A element…’ And then I’d be like, ‘Well, how do I sort of interject that in now? Now we’re kind of talking about something slightly different.’ I wanted it to more fluid.” (Participant 12, clinical research nurse, 1 patient)

This Supporter viewing CARE as a script may reflect a more traditional understanding of HCP-patient relationships in which HCPs provide systematic education and instruction. However, CARE encourages an approach that prompts Supporters to help patients decide what works best for them, perhaps indicating this Supporter’s misunderstanding or lack of familiarity with the CARE approach.

Relatedly, one practice nurse doubted the CARE approach because she perceived that patients wanted direct advice from her, rather than just the website. Consequently, she felt quite limited in the Supporter role.

Two Supporters highlighted that they would have liked to be able to review patients’ Renewed Online activity so they were aware of what patients were referring to during appointments.

 “They would talk to me and I’m not completely sure I knew everything that they were covering [Renewed Online activity]...So that’s something that I found difficult because they would talk away as if I knew what they were talking about.” (Participant 8, clinical research nurse, 3 patients)

Other Supporters printed off the pages from Renewed Online demo and would bring these into support sessions to overcome this.

## Discussion

### Principle Findings

This process evaluation used qualitative interviews to understand Supporters’ experiences of providing support to cancer survivors alongside a digital intervention in primary care. Exploring Supporters’ experiences enabled the identification of possible factors that hindered or enabled support being delivered as intended alongside the digital intervention, highlighting lessons for future intervention development and implementation. Overall, Supporters felt that they were able to follow the protocol and deliver support as needed, but several issues were identified which might hamper implementation, and some minor alterations to Renewed Online would likely be required to ensure the intervention is optimised for successful implementation in practice. Considering implementation theory in process evaluations can provide a framework for evaluating and explaining the success of implementation [35]. The findings will therefore be discussed in relation to Normalisation Process Theory (NPT :[36]), an implementation theory that explains the processes through which new practices of thinking, enacting and organising work are operationalised in healthcare [37]. An outline of NPT is provided in Table 2.

Aspects of the intervention that supported implementation included the ease of training and Renewed Online’s perceived similarity to digital tools used in current practice. In relation to NPT, this demonstrates a high degree of *coherence* regarding the value of Renewed Online, which is needed for an intervention to successfully implement well in practice. Positive perceptions of the utility of an intervention have been shown to be a key facilitator of implementation [38] and implementation failure has occurred when HCPs do not perceive intervention use as a legitimate activity for patients or providers [39]. Previous literature has suggested that HCPs in primary care may not be well placed to provide support to cancer survivors as they lack the expertise and time necessary to make these changes and desire clearer guidance about how to do this [8,9]. However, this study found that primary care staff felt that supporting cancer survivors by using a digital intervention would be appropriate and beneficial. It is possible that this finding differs to previous literature because this is the first study exploring views of primary care staff providing support *alongside* a digital intervention. In the majority of cases, this format seemed to overcome concerns about lack of expertise and time, as the digital intervention provided the specific advice, avoiding the need to develop expertise, and vastly reduced the amount of input needed to support cancer survivors to make behavioural changes. A minority of Supporters held initially believed that their perceived lack of expertise would affect their ability to support patients. However, their confidence in this approach improved once they began to support patients, suggesting this was not a significant barrier to implementation.

Previous research in digital interventions for other conditions has shown that primary care staff have reservations about providing phone support, viewing it as less effective than face-to-face support [21]. The acceptability of phone support seen in this study may reflect the fact that primary care is changing and is increasingly using phone appointments to manage increasing workloads [40]. This may normalise more rapidly in the current climate, as telemedicine is increasingly advocated for use with those with cancer during the COVID-19 pandemic to minimise the number of visits to healthcare settings and risk of exposure [41]. This increase in acceptability has implications for the implementation of future digital interventions employing primary care staff to support digital intervention users, as phone support may provide similar effects and may be more cost-effective [20].

Most supporters successfully engaged with the CARE approach, with some noting that not giving direct advice was a positive change and welcomed patients being more involved in their care. This provided evidence of both *cognitive participation* and *collective action* and suggests that for most Supporters the CARE approach would likely normalise well in practice. However, a minority experienced difficulty adjusting to giving non-directive support and instead allowing the digital intervention to provide the advice. In NPT terms, there was an apparent lack of *cognitive participation,* which would suggest a potential challenge to successful implementation. In the wider literature, HCPs difficulty adjusting to not giving direct advice is a prevalent pattern. Encouraging healthcare workers to switch from a more traditional paternalistic approach, in which they hold all the knowledge and power and give this to the patient, to a more equal relationship utilising non-directive support often requires intensive training, including reflective practices [42,43]. This is an issue that is pertinent to providing human support alongside many digital interventions, where the healthcare worker is often employed to try to boost engagement, but is not expected to be an expert or give advice [20,26]. It is possible that more intensive training might help the minority who struggled with the CARE approach. Alternatively, it may be that employing staff specifically to provide this support is more feasible than implementing more intensive training to change the behaviour of healthcare workers whose daily work usually involves working in a directive way (e.g. giving advice). Such an approach has been adopted successfully in the digital diabetes prevention programme in which a commercial company (Changing Health) provide telephone support to NHS patients using the digital service [28].

Some clinical research nurses perceived that not being based in GP practices was a barrier to delivering support as intended, as they did not have a pre-existing relationship with patients or access to their medical records and consequently reported finding it challenging to build rapport during 10-minute sessions. NPT would see this as a challenge to *collective action,* which examines the work HCPs have to do to enact a process [36]. This is an important issue, as the model of using research nurses adopted in this study is similar to that adopted within healthcare elsewhere, such as when private companies provide telephone support alongside digital interventions to patients in the UK’s NHS (e.g. the NHS digital diabetes prevention programme); these workers do not have prior relationships with patients, or access to their medical records. It may be that within such a context a longer (perhaps double) appointment is needed in order to provide time to build rapport, as rapport building is considered crucial to quality healthcare support [40].

Some Supporters suggested Renewed Online should be offered to patients sooner after finishing treatment as this may be when patients are most vulnerable and motivated for behaviour change. This demonstrates the NPT construct of *reflective monitoring*, whereby Supporters’ appraisal of Renewed Online considered the potential disadvantages and suggested how implementation may be improved in the future. In line with Supporters’ suggestions, previous research found that cancer survivors describe feeling a drive to adopt a healthier lifestyle to feel better and more empowered immediately after finishing treatment, and so it may be that this is the optimal ‘teachable moment’ [15].

In light of the experiences of Supporters and the barriers identified, several issues have been identified and potential plans for how these could be addressed are presented in Table 3.

### Strengths and Limitations

The variation of HCP roles included in the study allowed the nuanced experience of those in different job roles to be explored. This study has a number of limitations. Firstly, data could not be analysed iteratively during the interview period. This meant that themes that developed in early interviews could not be explored further in later ones, which can develop meaning and understanding [44]. Secondly, the majority (86%) of Supporters reported sticking to 10 minutes within support sessions, however, those who consented to interview gave patients 15 minutes on average within support sessions. It is hard to know why the current study’s sample differs to the overall trial sample in this way and whether it might limit the transferability of results. This difference may be due to using paper self-report measures to collect the duration of support sessions within the trial, possibly resulting in social desirability bias [45], whereas given the opportunity in an interview to discuss this in more detail, HCPs may have been more inclined to mention if they went over 10 minutes and why. Thirdly, we were unable to record consultations with Supporters within this study, so could not corroborate Supporters reports how they implemented the CARE approach. Further research exploring recorded consultations of Supporters using CARE would be useful. Lastly, there was a low response rate to interview invitations. There may be various reasons why there was such a low response, one of which may be the capacity for HCPs to carry out interviews due to busy schedules. The perceptions and experiences of implementing support alongside Renewed may have differed for those who did not accept an invitation to interview.

### Conclusion

Our results suggest that HCPs generally found providing support alongside a digital intervention acceptable and were amenable to contributing to the delivery of support to cancer survivors in primary care. Key factors that may support the successful implementation of this type of digital intervention in practice include the increasing acceptability of phone support, and the utility and acceptability of non-directive support amongst most HCPs, such as the CARE approach. Challenges to implementing support alongside a digital intervention were also identified, including concerns about not having enough time during support sessions to build rapport and, in a minority, concerns about using a non-directive approach. This study shows that even when support for a digital intervention is designed to be brief, sufficient time needs to be allowed in initial support sessions to allow practitioners to feel confident that rapport can be built. Further research is needed to explore whether additional training might be enough to support the minority of healthcare practitioners that were concerned about giving non-directive support to adopt this approach. If not then Primary Care could consider using other staff, such as using Social Prescribers of Health Coaches, who work in a less directive way than nurses and healthcare assistants and who are now becoming increasingly common in the UK’s NHS [46].

There is a clear need for primary care to provide support to cancer survivors [7], but previous research has suggested that lack of time and training in how to support this patient group are key barriers to providing this support [8,9]. This study showed that providing support alongside a digital intervention might be an acceptable way of overcoming these barriers, as only a small amount of support is required and there is no need to develop cancer specific expertise or behaviour change skills. This approach of mixing digital and human support will likely be useful to others developing and implementing interventions to support other aspects of care for cancer survivors which are not targeted within Renewed Online, such as support with sexual dysfunction, smoking cessation, alcohol consumption, returning to work and lack of social connection and support.

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### Authors’ contributions

JS, JB, KB, AR and LY contributed to the early conception for the qualitative process evaluation. JS and KB developed the interview schedule. JS and JSB collected the data. KB, LY, PL, JSB and AG were involved in the development of Renewed. JS, RE, AR and KB contributed to analysis. JS wrote the initial draft of the manuscript. RE, KB, AR and LY provided critical review and editing of the initial and subsequent drafts of the manuscript. CF, EW, CG, AG, and PL provided critical review of subsequent drafts of the manuscript. All authors read, critically revised, and approved the final manuscript.

### Conflicts of Interest

None declared.

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###  Abbreviations

CARE: Congratulate, ask, reassure, encourage

COREQ: Consolidated criteria for reporting qualitative studies

EORTC: European Organization for Research and Treatment of Cancer

HCP: Healthcare professional

QoL: Quality of life

MRC: Medical research council

NHS: National health service

RCT: Randomised control trial

## Multimedia Appendix 1

## Multimedia Appendix 2

## Figures

Figure 1 – Renewed Online Intervention

**Renewed Online**

Suggestions regarding Renewed Online modules based on quality of life responses.

Extra pages tailored to participants on active surveillance/ watchful waiting prostate cancer

**POWeR+**

* A choice of a low calorie or low carbohydrate eating plan.
* A choice of walking or any other physical activity plan
* Weekly weight and goal review with tailored feedback
* 25 sessions covering behaviour change tools which support weight loss.
* Weekly reminder and motivational emails
* Links to other weight loss resources

**Getting Active**

* Information about getting active including addressing concerns and a quiz showing the benefits of increasing activity
* Weekly goal review with tailored feedback
* Weekly reminder and motivational emails
* Links to other physical activity resources

**Eat for Health**

* Quiz showing the benefits of eating a healthy diet
* Addressing concerns about making diet changes
* Healthy eating guide
* Weekly goal review with tailored feedback
* Weekly reminder and motivational emails
* Links to other healthy diet resources

**Healthy Paths**

* General advice about reducing stress and improving well-being
* Optional cancer-specific pages addressing fear of recurrence & feelings of loss
* Mindfulness practices and behavioural activation
* Weekly reminder and motivational emails
* Links to other resources which provide support

**Healthy Mind app**

* General stress reduction information
* Mindfulness practices
* Daily SMS notifications to trigger behaviour change and raise motivation

*Reproduced with permission from* [13]

## Tables

Table 1 – Supporter Training Key Messages

|  |
| --- |
| Brief summary of the guidance given to Supporters on how to provide support |
| Use the CARE approach with patients during support sessions:* **C**ongratulate the patient, e.g.:

“That’s great that you want to get more active”* **A**sk the patient e.g.:

“Have you decided to make any of the changes that Renewed suggested might be helpful?” * **R**eassure the patient, e.g.:

“Yes, doing more physical activity is safe and should help you to feel better.” * **E**ncourage the patient, e.g.:

“Keep going with that as it should start to help you to feel better soon.”Tips for providing support:* Be warm and friendly
* Praise any achievements
* Listen and show understanding

Sessions should take place:* 2, 4 and 8 weeks after the patient sign up for Renewed.
* Send an encouraging email at 2 and 4 weeks using through the Supporter website. Editable pre-written email templates are available.
* Log all emails and appointments on the support log

If a patient does not contact for support:* Send encouraging email

If you find it hard to talk to the patient for only 10 minutes:* Start the session by saying:

“Nice to speak to you today. This is just a short appointment, we have around 10 minutes to talk. It would be great to hear how you’re getting on with Renewed.”* In the last few minutes say:

“We are coming to towards the end of our time, is there anything else that you wanted to discuss quickly today?”* Let the patient know that the session is about to end, say:

“Thank you for your time, it’s been nice to chat with you”If the patient asks for advice:* Ask them what they thing would work best for them, or what they think would be best to do.
* It’s okay to ask “what does the website say to do in that situation?”
* If patient is concerned about whether making a change is safe, you can reassure them that everything recommended on Renewed is safe.
 |
|  |

Table 2 – Normalisation Process Theory outline as described by [47]

|  |  |
| --- | --- |
| **Construct**  | **Definition** |
| *Coherence* | The work individuals and organisation have to go through to understand a new practice in order to promote or inhibit it. These processes are energised by investments of meaning made by participants. |
| *Cognitive participation* | The work individuals and organisations have to go through to enrol users and engage with a new practice. These processes are energised by investments of commitment made by participants. |
| *Collective action* | The work individuals and organisations have to go through to enact a new practice. These processes are energised by investments of effort made by participants. |
| *Reflexive monitoring* | The work of formal or informal appraising an intervention to develop participants’ comprehension of the effects of the intervention. These processes are energised by investments in appraisal made by participants. |

Table 3 – Plans for addressing challenges faced by Supporters

|  |  |
| --- | --- |
| **Challenges faced by Supporters** | **Plans for addressing those challenges** |
| Many Supporters were concerned the 10-minute support sessions were too short. | Giving the option for the first session to be a double appointment should allow the time for initial introductions and addressing concerns. |
| Some clinical research nurses perceived that not knowing the patient before the first session was a disadvantage, as they had no existing rapport to build on. | Having the first session be an optional double appointment should allow time to build more rapport before beginning support.  |
| Some HCPs expressed a desire to see patients’ activity on Renewed, to enable easier and most salient conversations during sessions. | It may be useful to provide Supporters with access to patients’ Renewed activity.  |
| Supporters suggested Renewed should be introduced at the point when patients are leaving cancer treatment as this is potentially when they are most in need of support. | Future implementation of Renewed may need to concentrate on patients who have finished treatment more recently instead of up to 10 years after treatment. |
| A few Supporters were reluctant to use the CARE approach because it was different from a traditional healthcare worker-patient relationship where the HCP is seen as having control and provides advice.  | Training could be intensified for the minority who have concerns about not giving advice. This could include reflective practices, which have been shown to help people switch from a directive to non-directive approach [42,43].  |
| A few Supporters expressed misunderstanding of how to use the CARE approach.  | Update Supporter training to include video demonstrations of how CARE can be delivered.  |
| Some Supporters expressed that delivering more support enabled them to build confidence.  | Have fewer Supporters so that they are able to support a greater number of patients, which could give them the opportunity to build confidence in delivering support.  |