Finding My Way-UK: Promoting Positive Psychological Outcomes in People Living with and Beyond Curatively Treated Cancer: Protocol for a Pilot Randomised Trial

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Introduction

Cancer survivorship

Cancer, a leading cause of global mortality, constitutes a significant public health challenge, accounting for one in six deaths worldwide (World Health Organisation, 2022). Advancements in cancer detection and treatment have significantly increased survival rates in the UK, with 50% of individuals with cancer now surviving for 10+ years (Cancer Research UK, 2015). This increase in survivorship has brought more research attention to the psychological sequelae following a cancer diagnosis. Research findings highlight the prevalence of psychological comorbidities, with Kuhnt et al. (2016) suggesting that 39.4% of people living with and beyond cancer experience such comorbidities within 12 months post-diagnosis, and a lifetime prevalence of any mental disorder of 56.3%. People living with and beyond cancer are susceptible to higher levels of psychological distress, depressive symptoms, anxiety, and a diminished quality of life (Gold et al., 2016).

Benefit Finding

Research indicates that a high percentage of people living with and beyond cancer report positive psychological changes following their diagnosis (Rinaldis et al., 2010). Terms such as benefit finding (Antoni et al., 2001), post-traumatic growth (Tedeschi & Calhoun, 2004), and stress-related growth (Park et al., 1996) have all been used to describe these benefits. Although these concepts are often used interchangeably due to their conceptual overlap, important distinctions exist that warrant them being treated as separate constructs (Harding et al., 2014). For example, benefit finding is defined as the positive effects resulting from a trauma which may arise almost immediately following the experience (Helgeson et al., 2006). Whereas post-traumatic growth is defined as the positive psychological changes that occur after a struggle with a traumatic event (Tedeschi & Calhoun, 2004). Post-traumatic growth emphasises the process of struggle and adaptation, and typically takes longer to

develop as it is contingent upon an active process of coping and change (Calhoun & Tedeschi, 1998). Despite the development of post-traumatic growth being contingent upon struggle and active change, it should not be confused with resilience. While the two are related, they are distinct constructs: resilience is about withstanding and recovering from trauma, whereas post-traumatic growth involves meaningful psychological change that arises from grappling with trauma (Elam & Taku, 2022).

Benefit Finding and Associated Factors

The relationships between benefit finding and psychological, sociodemographic, physical, and cancer-related factors are tenuous, with only a few factors consistently associated across various published studies. Systematic reviews have concluded that high benefit finding is frequently linked to higher levels of optimism, self-efficacy, psychological resilience, positive coping styles (e.g., positive reframing), marital status, and religious beliefs. However, associations between benefit finding and distress, depression, anxiety, social support, age at diagnosis, income, and cancer stage remain inconclusive (Harding et al., 2014; Pascoe & Edvardsson, 2013; Zhu et al., 2022).

Lechner et al. (2006) suggested that these inconsistencies might be due to a curvilinear relationship between benefit finding and its associated factors. They proposed three distinct groups: low, intermediate, and high benefit finding. The low benefit finding group often experiences low distress because they do not perceive their cancer experience as a significant crisis, thus finding no need to seek benefits. The intermediate benefit finding group, characterised by a lack of use of adaptive coping strategies or reliance on others, tends to experience greater distress. In contrast, the high benefit finding group shows greater use of adaptive coping strategies and a reliance on others, leading to better psychosocial outcomes. Lechner et al. (2006) identified significant curvilinear relationships between benefit finding and various psychosocial outcomes, such as quality of life, positive affect, negative affect,

depressive symptoms, and social disruption. Those with low or high benefit finding reported better quality of life and higher positive affect compared to those with intermediate benefit finding. Conversely, intermediate benefit finding was associated with higher negative affect, more depressive symptoms, and greater social disruption. Despite the issues surrounding generalisability, as the sample was solely comprised of women with breast cancer, these findings underscore the need to consider non-linear models to understand the complex relationships between BF and psychosocial outcomes.

Promoting Benefit Finding in People Living With and Beyond Cancer

Cognitive-Behavioural Therapy (CBT) based interventions are currently considered the gold standard in psychotherapy (David et al., 2018; Hulbert-Williams et al., 2018). This reputation is partly due to CBT's extensive evidence base, demonstrating its efficacy in reducing depression, anxiety, and distress, and improving quality of life in oncology populations (Zhang et al., 2022; Ye et al., 2018). However, a recent systematic review and meta-analysis by Li et al. (2020) found that other forms of therapy, such as mindfulness-based interventions and expressive writing, might be equally effective in promoting positive psychology outcomes. Various psychological interventions aiming to improve benefit in individuals living with and beyond curatively treated cancer have been investigated. Interventions that have been tested include cognitive behavioural therapy (CBT)-based interventions such as Cognitive Behavioural Stress Management (CBSM; Antoni et al., 2001), mindfulness-based therapies (Zernicke et al., 2014), expressive writing (Zhang et al., 2023), and support groups (Van der Speck et al., 2017). Some researchers, however, have used the Post-Traumatic Growth Inventory to measure benefit finding, potentially confounding results. Despite this, Li et al. (2020) provided clear meta-analytic evidence that these conventional interventions are effective in promoting positive psychology outcomes,

with intervention groups showing significant improvements compared to control groups, reflected by a medium effect size (Cohen's d = .42).

Despite these mixed findings, CBT continues to hold the 'gold standard' title. Hulbert-Williams et al. (2018) argued that the extensive literature on CBT does not inherently imply its superiority. Instead, the prevalence of CBT studies might result from easier access to funding. This assertion is supported by evidence of the poor quality and ecological validity of several studies, which are often conducted in idealised conditions that do not reflect real-world CBT settings.

A systematic review investigating the efficacy of psychosocial interventions and their effective components in promoting benefit finding, specifically in a curatively treated cancer population, is warranted and is currently underway as the first study of my PhD.

Barriers and Alternative Approaches

Therapies and interventions such as those mentioned above traditionally adopt a face-to-face design, which is prone to substantial barriers affecting uptake and adherence (Beatty et al., 2018). Other intervention modalities, such as telephone-based and web-based interventions, have demonstrated higher uptake compared to face-to-face interventions (Beatty et al., 2017; Brebach et al., 2016). The heightened intensity inherent in both group-based and face-to-face interventions might inadvertently exclude individuals with elevated symptom burden, those residing in rural areas, or those facing socio-economic challenges (Beatty et al., 2022). Furthermore, despite enhanced levels of psychosocial support in urban areas, people living with and beyond cancer can still struggle to access it as demand often exceeds supply (Richards et al., 2016); access to these important interventions is difficult regardless of where the person resides. Moreover, both telephone-based and web-based interventions provide confidentiality to people living with and beyond cancer who are

seeking mental health support, thus reducing perceived stigma and, in turn, improving uptake and adherence (Holland et al., 2010).

Adapting and testing existing evidence-based interventions is a more practical and economical use of resources compared to designing entirely new and competing interventions (Hulbert-Williams et al., 2021). This is particularly important for web-based interventions, which represent a relatively new modality. A seminal systematic review reported that low adherence to web-based interventions was associated with poor web design, impersonal or overly exhaustive content, and a lack of human contact or feedback (Beatty & Binnion, 2016). Additionally, web-based interventions often suffer from methodological issues such as non-randomised designs and small sample sizes (Vuori et al., 2023), which may raise questions regarding the validity of some studies. Therefore, rather than developing novel web-based interventions, further research should focus on optimising existing interventions to address these flaws and improve this modality.

Finding My Way UK

One of the most promising web-based interventions for people living with and beyond cancer is Finding My Way (Beatty et al., 2015). Finding My Way is a broad psychosocial intervention that integrates theoretical foundations from CBT, psychoeducation, and exercises from third-wave approaches such as mindfulness meditation.

The efficacy of Finding My Way has been demonstrated through two randomised controlled trials. The initial single-site randomised controlled trial (Beatty et al., 2016) involved 60 participants with cancer diagnosed within the previous 6 months who were receiving treatment with curative intent. This study used an active, web-based control (information-only version of the same content) to compare against the intervention. Significant main effects for time were found across multiple outcomes including cancer-specific distress, global quality of life, physical functioning, role functioning, social

functioning, and anxious preoccupation. The intervention group showed significantly higher physical functioning at 3-month follow-up compared to controls (d = -0.52, p = 0.02), with trends approaching significance for cancer-specific distress post-intervention (p = 0.10) and global quality of life at 6-month follow-up (p = 0.10). Moderate between-group effect sizes also favoured the intervention for cancer-specific distress (d = 0.43) and global quality of life (d = -0.43) at 6-month follow-up, and anxious preoccupation post-intervention (d = 0.38)

Building on these findings, a larger multisite randomised controlled trial conducted by Beatty et al. (2019) demonstrated the efficacy of Finding My Way in reducing cancer-specific distress and general distress in both the intervention group and the control participants. However, there were no significant between-group differences. Similar to the single-site randomised controlled trial, this lack of a significant between-group finding might be partly explained by the use of an attention control group, therefore attributable to an overlap in content rather than a lack of intervention efficacy. Despite this, the multisite randomised controlled trial found significantly higher emotional functioning in the experimental group and lower short-term health service utilisation, which might help reduce the aforementioned supply and demand barrier to psychosocial interventions. Collectively, these trials provide evidence for efficacy across different domains, with the single site-study showing benefits for physical functioning and quality of life, while the multisite study demonstrated advantages for emotional functioning and healthcare utilisation.

A key strength of Finding My Way lies in its adaptable modules. These modules can be tailored to address specific types of cancer, participant age, and gender, ensuring the program is effective in achieving desired outcomes for each individual. This versatility distinguishes it from face-to-face interventions that might necessitate retraining for individuals leading the intervention. Therefore, further investigation into FMW, potential moderators, and its effects on different outcomes is warranted to facilitate a more finely tuned

and tailored intervention. Demonstrating Finding My Way's adaptability, Finding My Way-Advanced (FMW-A; Beatty et al., 2021) tailors the intervention for women with metastatic breast cancer. Feedback from interviews directly informed revisions, optimising the content's relevance for this specific population.

The adaptability of Finding My Way allows for easy transfer to different cultures, as evidenced by replication studies currently occurring worldwide. For example, Finding My Way has been adapted to align with the UK cancer care context (Hulbert-Williams et al., 2021). Similar to the Australian version, Finding My Way-UK consists of six modules supplemented with expert testimony, testimonials from individuals living with and beyond cancer, interactive exercises and worksheets, assessment tools, and guided mindfulness meditation exercises. These modules guide individuals through the cancer experience and cover topics such as: (1) treatment and communication with treatment teams; (2) coping with cancer treatment side effects; (3) managing distress; (4) challenges to identity, body image, and sexuality; (5) social support and family concerns; and (6) issues that arise after treatment. To increase the intervention's relatability for individuals living with and beyond cancer in the UK, several changes have been made. Expert testimony now includes a broader range of professionals, such as psychologists, oncologists, surgeons, and managers of local cancer support centres with backgrounds in nursing, replacing Australian psychologists and oncologists. Testimonials of people living with and beyond cancer have been re-recorded with a UK-based cohort to enhance participants' affiliation and connectedness with the shared stories and experiences. Additionally, Australian-specific resources and treatment information have been replaced with their British equivalents and signposted accordingly.

The FMW-UK trial conducted by Hulbert-Williams et al. (2021) primarily aimed to improve cancer-specific distress, with secondary outcomes being depression, quality of life, and healthcare utilisation. Preliminary quantitative findings from this study suggest that, in

line with previous FMW trials (Beatty et al., 2019), engagement was good. Although participants in the intervention group showed improvements in cancer-specific distress and depression, the intervention effect was non-significant. The researchers suggest that this lack of significant findings may be due to low baseline distress levels. In support of this, participants with high baseline distress showed greater improvements, and there was more of an intervention effect in this group, but the sub-sample was too small to reach statistical significance. Qualitative feedback revealed some frustrations with the intervention. Namely, participants felt the intervention came too late in their cancer journey and would have preferred earlier access. Some also reported negative emotional responses, such as frustration or doubt, as the weekly module release schedule forced them to reflect on areas they did not initially perceive as issues. Despite these challenges, participants also perceived benefits from the intervention. They gained knowledge, understanding, and perspective, particularly in recognising underlying anxiety and stress. Survivor video testimonies within the intervention were reported as providing a sense of hope, optimism, and reassurance.

Pilot Trial Rationale

In response to participant feedback from the previous Finding My Way-UK trial (Hulbert-Williams et al., 2021), this study will modify the intervention delivery, trial duration, and recruitment strategy to enhance feasibility and engagement. Firstly, the intervention delivery will be adjusted to provide participants immediate access to all six modules, rather than the previous sequential weekly release. This modification aims to increase flexibility and user autonomy, allowing participants to engage with the content at their own pace. This change directly addresses prior feedback indicating that the weekly module release schedule was misaligned with participants' needs, as some modules were perceived as arriving too late in their cancer journey. By offering unrestricted access, participants will be able to prioritise the content most relevant to their current concerns.

Secondly, participant engagement patterns from previous Finding My Way trials in Australia and the UK have highlighted a decline in module completion rates after the third week (Hulbert-Williams et al., 2021; Rigg et al., 2024). Given this pattern, and in conjunction with the shift to full module access upon enrolment, the intervention duration will be reduced from six weeks to four weeks. This adjustment is intended to optimise adherence and retention while ensuring that participants derive maximum benefit within a more engagement-sustaining timeframe. Conducting a pilot trial will enable further evaluation of whether these modifications enhance adherence and retention outcomes.

Furthermore, the previous Finding My Way-UK trial (Hulbert-Williams et al., 2021) recruited participants through multiple NHS hospital sites in North-West England and North Wales via the National Institute for Health Research (NIHR) Clinical Research Network (CRN) research nurses. However, this approach required approximately 18 months, highlighting significant logistical and time constraints. To streamline recruitment, this pilot trial will evaluate the feasibility of online recruitment strategies, including social media outreach and collaborations with cancer charities. Specifically, we will assess whether cancer charities can support recruitment efforts by disseminating study information through their newsletters. Testing these alternative recruitment strategies will provide insights into their efficiency, reach, and scalability, thereby informing the design of a future full-scale RCT.

Finally, informed by qualitative feedback from the previous FMW-UK trial (Hulbert-Williams et al., 2021), which highlighted reports of benefit finding, this study will include questionnaires assessing benefit finding and other related positive psychology constructs. While this pilot study is not powered for inferential statistical testing, these measures will provide preliminary data on participant burden and response variability. Additionally, the collected data will aid in estimating clinically meaningful effect sizes and refining sample

size calculations for a subsequent full-scale RCT; this would represent the first test of the FMW programme targeting positive cancer-related psychological adjustment.

Aims and Hypotheses

The primary aim of this pilot trial is to evaluate the feasibility and acceptability of testing the Finding My Way-UK intervention using these new design features, and for these positive psychology outcome measures. This will be assessed by examining recruitment rates, retention rates, adherence to the intervention (i.e., the number of modules accessed and module completion rates), and participant engagement with study procedures.

As a secondary aim, this pilot trial will conduct preliminary exploratory analyses to explore changes in benefit finding over time. Given the small sample size, the study is not powered to detect statistically significant effects. However, exploratory analyses will provide early signals of efficacy and trends in benefit finding and related psychosocial outcomes, including subjective well-being, post-traumatic growth, hope, resilience, and self-management self-efficacy. The findings will inform the feasibility of measuring these constructs in a full-scale RCT and contribute to refining study procedures, including outcome measurement selection and timing. As there are a few comparable published studies on which to base an appropriate sample size calculation for a full trial, we will use the data from this pilot study to calculate indicative effect sizes in preparation for running a future RCT.

Furthermore, this study will explore patterns of information seeking styles, assessing whether higher levels of this construct are associated with greater intervention engagement and greater benefit finding. Additionally, demographic characteristics will be examined to determine whether certain participant subgroups engage more readily with the intervention. Findings from this pilot trial will provide feasibility data and preliminary outcome trends guiding the design of a future full-scale RCT.

Methods

Study Design

A single-blinded randomised controlled trial will be employed, compared with a treatment-as-usual control. 1:1 randomisation will occur at the patient level, where participants will be randomised into either the intervention group or the treatment-as-usual control. This trial will follow the CONSORT guidelines for pilot RCTs (Eldridge et al., 2016). Ethical approval has been sought and obtained from The Science Research Ethics Committee, Edge Hill University (ETH2425-0268).

Setting

This study will be conducted entirely online. The Finding My Way-UK intervention platform was originally developed for a previous study (Hulbert-Williams et al., 2021) using WordPress v5.7.1 (WordPress Foundation) and is hosted through Kinsta. Videos are uploaded to YouTube and embedded at relevant points on the website, ensuring they are not publicly listed to prevent unauthorised access. Access to the Finding My Way-UK website is restricted to participants with credentials (username and password) provided by our team, ensuring that only authorised users can view the content.

Participants

Inclusion Criteria

Individuals will be eligible to participate if: (1) they have been diagnosed with any cancer within the last 12 months ;(2) their cancer is being (or, indeed, was) treated with curative intent; (3) they are aged 16 years and over; (4) they possess sufficient English proficiency to provide informed consent and use with the program; and, (5) they are able to access the internet and have access to an email address (or are willing to set an email address up with our help).

Exclusion Criteria

Individuals will be ineligible to participate if: (1) they have a diagnosis of cancer that is not being treated with curative intent (for example, metastatic, stage IV, or otherwise advanced-stage disease); and/or, (2) they have a severe comorbidity that may hinder their ability to participate fully (such as being unable to complete study procedures or provide informed consent).

Withdrawal Criteria

Participants may withdraw from the trial at any time during the intervention by informing the research team via email or phone. Participants who withdraw via phone, will be asked for their reasons for withdrawal, those participants who withdraw via email will receive a follow-up phone call regarding their reasons for withdrawal. If a participant is willing to share them, the reasons for withdrawal will be documented. Additionally, individuals will be asked if they consent to any existing data to be included in the final analysis, if consent is not obtained, their data and any documentation related to their involvement will be permanently erased from the database.

Recruitment

We will employ a multifaceted recruitment strategy to maximise reach and to recruit a diverse range of people living with and beyond cancer. We will approach cancer support groups and charities, offering their members the opportunity to participate in the study. If the charities allow and where it is feasible, in-person recruitment may take place. Study advertisements will be posted on social media platforms such as X/Twitter, Reddit, and Meta (Facebook/Instagram). Additionally, participants who consented to being re-contacted from a previous study in this programme of work will be reapproached for potential participation if they meet all other inclusion criteria.

Procedure

Upon expressing interest in the study, potential participants will receive a detailed information pack via email, explaining the research goals and procedures, and providing the research team's contact information for any queries. The information pack will include a link to the study recruitment website, which is hosted on the Qualtrics survey platform. This website includes the full trial information sheet and a web-based consent form. Once participants provide informed consent, they will be automatically directed to the baseline survey, also hosted within Qualtrics, with the flexibility to complete the survey in multiple sessions.

Upon completion of the baseline questionnaires, a research team member will randomly assign participants to either the intervention or control group using Microsoft Excel, ensuring equal distribution across groups. Participants in the intervention group will receive an email with login credentials for the Finding My Way UK website, while the control group will receive a PDF information pack listing national resources for psychological support, with an option for a mailed printed copy.

Intervention group participants will be encouraged to first access the FMW-UK website within one week, with reminder emails sent to those who have not logged in. The platform allows full access to all modules upon login, enabling participants to complete them at their own pace. Participants will be encouraged to log on at least weekly, completing a new module on each visit, though in reality they are able to engage as often as they choose. They will also receive access to a booster module one month after completing the main program.

To encourage engagement with the intervention and the questionnaires, a multi-stage process will be in place to remind participants to complete follow-up questionnaires. Participants will receive an email at the time that follow-up questionnaires are due for completion; participants who do not complete the questionnaires within one week of the initial email will receive a follow-up reminder via an automated text messaging service.

Finally, if participants have not completed the questionnaires within two-weeks of the initial email, (one week after the automated text message reminder), they will receive a phone call reminder (via an automated or professional calling service). Questionnaires will be administered at baseline, at the fourth week (post-intervention), and at a three-month follow up. At the conclusion of the study, participants will be sent a debrief sheet, and all participants will have up to six months from this point in which they can freely use FMW-UK.

Measures

Study Outcomes

At the baseline assessment, participants will be asked to provide demographic information including age, sex/gender, ethnicity, sexual identity, marital status, employment status, level of education attained, household income, and postcode. Additionally, medical data relevant to their cancer diagnosis will be collected, including cancer type, diagnosis date, and treatments received.

Primary Outcome

The primary outcome is the feasibility and acceptability of the intervention. Feasibility will be assessed through recruitment rates (number of participants enrolled each month), program engagement (number of intervention modules accessed and completed by each participant, supplemented by completion rates of exercises and worksheets), and research attrition (proportion of participants completing the post-intervention survey and the three-month follow-up). Acceptability will be evaluated using both quantitative and qualitative methods. At baseline, participants will be asked an open-ended question about their expectations for the intervention, specifically what they hope will change or improve. At follow-up, participants will rate the extent to which the intervention met these expectations (quantitative acceptability) and provide free-text responses describing any unexpected

changes or impacts (qualitative acceptability). Free-text responses will be subjected to basic thematic analysis to identify common themes relating to participant experience and acceptability.

Secondary Outcomes

Benefit Finding. This variable will be assessed using The Benefit Finding Scale (BFS; Antoni et al., 2001), a 17-item measure in which participants respond on a 5-point Likert scale, where responses range from 1 (*not at all*) to 5 (*extremely*). The BFS was originally developed to investigate benefit finding in individuals living with and beyond breast cancer, therefore, the original stem "*having had breast cancer…*" will be adapted to "*having had cancer…*" to ensure it is applicable for individuals diagnosed with all types of cancer. The BFS is associated with excellent internal consistency reliability (α*=.95*; Antoni et al., 2001). The range of possible scores is 17-85; with higher scores indicating higher levels of benefit finding.

Subjective Well-Being. Subjective well-being will be examined using the Satisfaction with Life Scale (Diener et al., 1985), a five-item questionnaire appraised on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). This scale had demonstrated high internal reliability with Cronbach's alpha ranging from α = .82 - .91 (Diener et al., 1985; Proctor et al., 2023). Total scores higher than 25 indicate high satisfaction with life in all areas, scores ranging from 20-24 indicate a general satisfaction with life, and scores lower than 20 indicate dissatisfaction with at least one area in life.

Hope. Hope will be assessed using the Herth Hope Index (HHI; Herth, 1992), a 12-item scale designed to measure levels of hope in individuals experiencing chronic illness, including cancer. Participants respond on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The HHI captures three dimensions of hope: temporality and future, positive readiness and expectancy, and interconnectedness. The scale has

demonstrated excellent internal reliability, with Cronbach's alpha reported as α = 0.97 (Herth, 1992) and stability over time with a test-retest correlation of 0.91. Total scores range from 12 to 48, with higher scores indicating greater levels of hope.

Resilience. Resilience will be assessed using the 10-item Connor-Davidson Resilience Scale (CD-RISC-10; Campbell-Sills & Stein, 2007), an abbreviated version of the original 25-item scale developed by Connor and Davidson (2003). This abbreviated measure evaluates an individual's capacity to adapt to adversity. Participants respond to each item on a 5-point Likert scale ranging from 0 (*Not true at all*) to 4 (*True nearly all the time*). The CD-RISC-10 has demonstrated excellent internal reliability, with Cronbach's alpha reported as α = 0.85 (Campbell-Sills & Stein, 2007). Total scores range from 0 to 40, with higher scores indicating greater resilience.

Exploratory Outcomes

Given the exploratory nature of this pilot study, self-management self-efficacy and information-seeking styles will be examined to assess their potential role in the intervention. It is currently uncertain whether these constructs will be directly affected by Finding My Way-UK (i.e. as an intervention outcome) or whether they will function as moderators in the relationship between the intervention and benefit finding (the primary outcome in a future full-scale trial). Due to this uncertainty, these variables will be examined as exploratory outcomes, allowing for flexibility in their interpretation based on emerging data.

Self-Management Self-Efficacy. Self-management self-efficacy will be assessed using the Self-Efficacy for Managing Chronic Disease 6-item Scale (Lorig et al., 2001), a 6-item scale designed to measure confidence in managing the consequences of chronic disease and its treatment. Participants rate their confidence on a 10-point Likert scale ranging from 1 (*not at all confident*) to 10 (*totally confident*). The scale has demonstrated excellent internal

reliability, with Cronbach's alpha reported as $\alpha = 0.91$ (Lorig et al., 2001). The score of the scale is the mean of the six items, with higher scores indicating higher self-efficacy.

Information Seeking Styles. The Participants' information-seeking styles will be assessed using the Cancer Information-Seeking Preferences (CISP) questionnaire (Loiselle, 2019), a single-item measure designed to categorise how individuals engage with cancer-related information. The CISP presents participants with the question: *"Which of the following statements best describes why and how you go about getting information about your cancer?"* Respondents select one of five predefined statements: (i) "I seek as much cancer information as possible on my own"; (ii) "I seek more cancer information to better take care of myself"; (iii) "I seek cancer information from others diagnosed with cancer to compare with my own situation"; (iv) "I do not seek much cancer information on my own - I would rather focus on other things in my life"; or (v) "Cancer is stressful enough; I do not seek cancer information." Based on their response, participants are classified into one of five information-seeking typologies: intense seekers, complementary seekers, fortuitous seekers, minimal/uninterested seekers, or guarded avoiders.

Sample Size

The sample size for this pilot trial has been determined based on the recommendations of Whitehead et al. (2016), which suggests that pilot trials should aim to estimate the standard deviation of the primary outcome with sufficient precision to optimise the sample size for the future, full-scale RCT. To the best of our knowledge, no directly comparable studies have examined benefit finding as the primary outcome in a similar online psychosocial intervention. Given this, the effect size for the main trial was inferred from previous online Cognitive-Behavioural Stress Management (CBSM) interventions, which have reported effect sizes ranging from 0.13 to 0.46 (Antoni et al., 2001; Cruess et al., 2000; McGregor et al., 2004; St Fleur et al., 2024; Walsh et al., 2022). Based on these estimates, an effect size of

0.35 was selected for the main trial sample size calculation. Following the recommendations of Whitehead et al. (2016) for small-to-medium effect sizes, a pilot study sample size of 20-25 participants per arm would typically be sufficient. However, since this effect size was inferred from CBSM interventions, additional participants are needed to ensure a more precise estimate of the standard deviation for the main trial. Therefore, to enhance precision while maintaining feasibility, a total of 60 participants (30 per arm) will be recruited for this trial. This sample size is expected to provide a reliable estimate of the standard deviation to refine the main trial's sample size calculation while also allowing for the assessment of trial feasibility, recruitment, and retention rates.

Statistical Analysis

Statistical analyses will be conducted using R (R Foundation for Statistical Computing), with IBM SPSS used for supplementary analyses as needed. Given the pilot nature of this study, the analyses will focus on descriptive statistics, feasibility outcomes, exploratory trends, and exploratory effect sizes, rather than hypothesis-driven inferential testing. The primary aim of the statistical analysis is to assess the feasibility and acceptability of the Finding My Way-UK intervention by evaluating recruitment rates, retention rates, adherence, and engagement.

Initially, data cleaning will be performed to ensure all data values are valid, plausible, and free of inconsistencies. Erroneous data entries will be removed, and missing data will be handled using appropriate methods. The type of missing data will be assessed to determine whether it is Missing Completely at Random (MCAR), Missing at Random (MAR), or Missing Not at Random (MNAR). Little's MCAR test will be used to determine whether the data are MCAR; non-significant results here would suggest the data is MCAR. If the result is significant, logistic regression will be used to test whether the data is MAR by creating binary indicators for missingness and modelling the probability of missing data based on observed

variables. Significant predictors here would suggest the data is MAR. If non-significant, the data will be considered MNAR, and sensitivity analyses will be performed using different assumptions about the missing data. Significant variations in results would indicate MNAR. If the data is identified as MCAR or MAR, missing data will be handled through multiple imputation techniques.

Descriptive statistics, including means, standard deviations, frequencies, and percentages, will be used to summarise key feasibility outcomes. Recruitment rates will be reported as the number of participants enrolled per month and the effectiveness of different recruitment sources. Retention rates will be examined at each follow-up time point to assess participant engagement over time. Adherence to the intervention will be assessed by summarising the number of modules accessed, percentage of modules completed, and frequency of logins. Baseline comparisons between completers and dropouts will be conducted using independent t-tests and chi-square tests to explore patterns of attrition and potential feasibility concerns. Similarly, baseline comparisons between the intervention and control groups will be performed to assess demographic and clinical equivalence.

To summarise changes over time, Linear Mixed Effects Models (LMEM) will be employed to estimate means and standard errors for descriptive purposes, maximising the use of available data by accounting for participant-level missingness. However, as this study is not powered to detect statistically significant differences, no formal inferential statistical tests will be performed. Instead, pre-post between group effect sizes (Cohen's *d*) will be reported to provide an indication of potential intervention effects. Additionally, Reliable Change Indices (RCI) will be calculated to determine the proportion of participants who demonstrate clinically meaningful change in benefit finding and related psychosocial outcomes. This approach will provide preliminary signals of efficacy while maintaining a primary focus on feasibility and engagement.

Data Sharing

In line with our commitment to open science practices, the study will be registered on the Open Science Framework prior to its commencement. Upon final publication of the study findings, anonymised datasets will be made publicly available on the Open Science Framework. The shared dataset will primarily include variables related to feasibility outcomes, including recruitment rates, retention rates, adherence metrics (e.g., number of modules accessed, percentage of modules completed), engagement data (e.g., login frequency, time spent on the platform), and secondary outcome psychometrics. Participants will be explicitly asked to consent to the sharing of their anonymised data with the research community and will be removed from the shared dataset if they do not consent. The consent process will ensure that participants are fully informed about the nature of data sharing, including the potential benefits and risks. The published data will be accompanied by metadata and documentation to facilitate reuse by other researchers. This will include a data dictionary explaining each variable in the dataset, a detailed codebook describing the measures used and how composite scores were calculated, documentation on data cleaning and preparation processes, and R scripts used for data analysis. Given that this is a feasibility-focused pilot study, the dataset will be positioned as a resource for refining recruitment, retention, and engagement strategies for future trials, rather than drawing definitive conclusions about intervention efficacy.

Timeline

We will seek to obtain ethical approval by August 2025. Upon receiving approval, recruitment will commence, with the aim of enrolling all participants within four months, from August to December 2025. Participants will complete a two-week onboarding process, followed by the four-week intervention, with final data collection occurring at the three-month follow-up. Accordingly, we anticipate completing all data collection and commencing

data cleaning and preliminary analysis by May 2026. We aim to report the findings from the study in Autumn 2026.

Discussion

This pilot trial aims to assess the feasibility of using the Finding My Way-UK intervention to promote benefit finding and positive psychological wellbeing among individuals living with and beyond curatively treated cancer. Specifically, it will evaluate recruitment rates, retention rates, intervention adherence, and participant engagement, all of which are critical for determining whether a future, full-scale RCT is viable. In addition, exploratory analysis will provide preliminary insights into potential changes in benefit finding and related psychosocial outcomes, helping to refine hypotheses and study procedures for future research. By assessing these feasibility outcomes, this study will contribute to the growing body of literature on web-based interventions for oncology populations, an area where further research has been encouraged (Beatty et al., 2019).

Benefit finding has been shown to be significantly related to lower depression and higher positive well-being (Helgeson et al., 2006). There is also a significant positive correlation between benefit finding and psychological flexibility, suggesting it is a key component of psychological adjustment following a cancer diagnosis (Hulbert-Williams & Storey, 2016). Traditional interventions, such as Cognitive-Behavioural Stress Management (Antoni et al., 2001; Penedo et al., 2006) and Expressive Writing (Zhang et al., 2023), have demonstrated efficacy in promoting benefit finding in individuals living with and beyond cancer. However, these face-to-face interventions often face barriers to uptake and adherence due to their heightened intensity, which might exclude individuals with elevated symptom burden, those residing in rural areas, or those facing socio-economic challenges (Beatty et al., 2022). Even in urban areas with enhanced levels of psychosocial support, people living with

and beyond cancer can struggle to access it due to the high demand often exceeding supply (Richards et al., 2016).

Web-based interventions such as Finding My Way UK offer a promising alternative by providing flexible, accessible, and confidential support that can overcome many barriers associated with traditional interventions. By delivering content online, these interventions can reach a wider audience, including those who may not have access to in-person support. Despite this potential, no studies have specifically measured the efficacy of web-based interventions in promoting benefit finding among people living with and beyond cancer.

This pilot trial will contribute to addressing this gap by first assessing the feasibility of online recruitment and recruitment via cancer charities, as well as patterns of adherence and engagement with the intervention. These findings will provide critical insights into whether a full-scale trial using such recruitment strategies is methodologically viable. Secondly, the results from this study will inform the design and implementation of a future full-scale RCT evaluating the effectiveness of Finding My Way-UK in promoting benefit finding and other psychosocial outcomes in individuals living with and beyond cancer. Moreover, insights into participant experiences will contribute to ongoing efforts to develop accessible, evidence-based digital health interventions for individuals living with and beyond cancer.

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