SONIA LOPES BSc, MSc

CANCER SURVIVORS' EXPERIENCES OF GROUP COGNITIVE BEHAVIOURAL THERAPY

Section A: A systematic review of outcomes of group Cognitive Behavioural Therapy for cancer survivors experiencing anxiety
Word Count: 7,517

Section B: Exploring cancer survivors' experiences of receiving group Cognitive Behavioural Therapy for anxiety
Word Count: 7,922 (1570)

Overall Word Count: 17,009

A thesis submitted in partial fulfilment of the requirements of Canterbury Christ Church University for the degree of Doctor of Clinical Psychology

FEBRUARY 2020

SALOMONS INSTITUTE FOR APPLIED PSYCHOLOGY
CANTERBURY CHRIST CHURCH UNIVERSITY

Acknowledgements

I am so grateful to all the patients who took part in my study, for taking their time to contribute to research.

I am very grateful for the great guidance given by my supervisors Dr John Hughes and Dr Fergal Jones.

I am grateful to my family, especially to my parents, sister, in laws, and trainee colleagues for all support throughout this process.

Special thanks to my lovely daughter and my husband, who has been my life partner for the past 20 years, for supporting all my dreams and for all their love.

While practicing self-kindness, my tribute goes, ultimately, to myself.

Summary of the Major Research Project

Section A: Prevalence of anxiety amongst cancer survivors (CS) is high and growing evidence suggests benefits of individual, or group, CBT in reducing anxiety. However, previous reviews were either cancer specific or specified cancer severity. Hence, there is a lack of a review looking at group CBT effectiveness on anxiety across different cancers and severity that this review aims to explore. A systematic review was conducted and twelve RCT studies were reviewed. Results indicated that group CBT interventions were effective in improving anxiety in CS across cancer types. Short-term interventions also produced positive results. Implications for future research were discussed.

Section B: Cancer diagnosis impacts significantly on patients' anxiety and quality of life. Although studies investigating the effectiveness of group CBT in CS have increased, there remains a paucity of data exploring CS experiences. This study aims to investigate CS' experiences of receiving group CBT for anxiety. Qualitative grounded theory methodology was applied. Thirteen CS attended a telephone or face-to-face interview. A framework was developed and findings indicated that group CBT seemed acceptable amongst CS, a range of positive and negative experiences were reported and anxiety improved. Some of the mechanisms of change were understanding anxiety, connection with others, accepting cancer, greater hope about the future and access to CBT tools.

Section A: Literature Review Contents

Abstract ----------11

Introduction ----------12

Anxiety prevalence in cancer survivors ----------12

Evidence-base of Cognitive Behavioural Therapy interventions for anxiety----------13

Individual CBT interventions for anxiety in CS ----------14

Online and Telephone CBT interventions for anxiety in CS ----------14

Group CBT interventions for CS ----------14

Rationale and review aim ----------15

Methods ----------17

Literature search strategy ----------17

Eligibility criteria ----------18

Inclusion criteria ----------18

Exclusion criteria ----------18

Search results ----------19

Quality assessment ----------21

Literature review ----------32

Target population ----------32

Study design and characteristics ----------34

Outcome measures ----------36

Intervention outcomes ----------37

Effective studies in reducing anxiety ----------37

Non-effective studies in reducing anxiety ----------39

Discussion ----------40

Limitations of review ----------44

Clinical and Research implications ----------45

Conclusion ----------46

References ----------48

Section B: Empirical Study Contents

Abstract ----------60

Introduction ----------61

Quality of life issues in cancer survivors ----------61

Coping with cancer-related distress ----------61

Benefits of group interventions for people with anxiety----------62

Group interventions for CS ----------62

Group CBT interventions for CS ----------63

Rationale and aims ----------64

Methods ----------65

Ethical considerations ----------65

Design ----------65

Participants ----------66

Procedure ----------67

Data analysis ----------68

Results ----------70

Category: Journey to accessing group CBT ----------71

Subcategory: Initial contact with the group ----------71

Subcategory: Hopes about group CBT that led to engagement --------72

Category: Power of hearing other CS stories ----------72

Subcategory: *Feeling normal* by hearing other people's stories--------72

Subcategory: Learning from comparison with other CS ----------73

Subcategory: The impact of negative narratives----------74

Category: Connection with other CS ----------74

Subcategory: Worries about *speaking in the group* ----------75

Subcategory: Preference of *talking to others who really understand* --75

Subcategory: Mutual support and sense of *belonging* in the group ----76

Category: *Gaining an understanding of anxiety* ----------76

Subcategory: Limited prior understanding on *how anxiety works* -----76

Subcategory: Making sense of anxiety experiences ----------77

Category: *Coping mechanisms that can be put in place* ----------78

Subcategory: New ways of dealing with anxiety ----------78

Subcategory: Practical exercises during sessions and *homework* ------79

Subcategory: Challenges to ongoing use of techniques ----------79

Category: *Accepting that I had cancer and I can deal with it* ----------80

Subcategory: Challenges to cancer diagnosis acceptance ----------80

Subcategory: Moving towards cancer acceptance ----------82

Category: Looking differently at the future ---------- 83

Subcategory: Developing hope about the future ----------84

Subcategory: New things CS might be anxious about ----------85

Selective codes and emergent theory ----------86

Discussion ----------89

Clinical implications ----------91

Strengths and study limitations ----------92

Future research ----------93

Conclusion ----------93

References ----------95

List of Figures and Tables

Section A - List of Figures

Figure 1. PRISMA four-phase flow diagram of study selection of the systematic review adapted from Moher et al. (2015) ----------19

Section A - List of Tables

Table 1. Summary of Cochrane Risk of Bias II tool (Sterne et al, 2019) applied to all studies included ----------22

Table 2. Cochrane Risk of Bias II tool (Sterne et al, 2019) applied to studies included 1-6. ----------23

Table 3. Cochrane Risk of Bias II tool (Sterne et al, 2019) applied to studies included 7-12. ----------25

Table 4. Summary of study characteristics ----------27

Section B - List of Figures

Figure 1. Framework developed for understanding CS's experiences of receiving group CBT for anxiety ----------88

Section B - List of Tables

Table 1. Inclusion and exclusion criteria ----------66

Table 2. Brief summary of demographics ----------66

Section C: List of Appendices

Appendix A Search terms list ----------101

Appendix B HRA approval ----------102

Appendix C NHS Ethics approval ----------103

Appendix D Email with confirmation of capacity and capability ----------104

Appendix E Applied Health Research in Cancer Governance Group approval -------105

Appendix F Participant information sheet ----------106

Appendix G Consent form ----------108

Appendix H Invitation letter Trust A ----------109

Appendix I Interview topic guide ----------110

Appendix J Interview topic guide (topic questions progression) ----------112

Appendix K Confidentiality transcribing agreement ----------115

Appendix L Extracts from research journal ----------116

Appendix M Coding table ----------119

Appendix N Coded transcript ----------122

Appendix O Author guidelines for the Integrative Cancer Therapies Journal --------123

Appendix P End of study form ----------124

Appendix Q Participant feedback form ----------125

Appendix R Feedback form for NHS ethics and R&D ----------127

SECTION A:

Sonia Lopes BSc, MSc

Title: A systematic review of outcomes of group cognitive behavioural therapy for cancer survivors experiencing anxiety

Word count: 7,517

SALOMONS INSTITUTE FOR APPLIED PSYCHOLOGY

CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Background: There is a rapid increase in people surviving cancer and this will create pressure on services that are already resource constrained. Prevalence of anxiety amongst cancer survivors (CS) is high and growing evidence suggests benefits of individual or group CBT in reducing anxiety. Previous reviews were specific to cancer sites; hence, a review on group CBT effectiveness for anxiety across different cancers and severity is needed.

Aims: To determine whether group CBT interventions are effective for improving anxiety amongst CS with different diagnosis and severity.

Methods: A systematic literature search was conducted of RCT studies of group CBT for CS that reported anxiety outcomes. Searches were conducted in MEDLINE, PsycINFO, CINAHL and Cochrane Library databases.

Results: Twelve RCT studies were identified and reviewed. Most studies indicated that interventions seemed to be clinically effective in improving anxiety across cancer types. Short-term interventions seemed to produce positive results.

Conclusions: Despite the encouraging findings suggesting group CBT effectiveness for anxiety, intervention duration and CBT techniques utilised varied across studies. Clinicians are encouraged to deliver short-term interventions that may help to reduce waiting lists. More empirical studies conducted in the UK are needed including BAME, younger and older adult participants.

Keywords: group CBT, cancer survivors, anxiety, RCT

Introduction

There are more than 200 cancer types (Cancer Research UK, 2017) and approximately 14.1 million people worldwide are diagnosed with cancer every year (Torre et al., 2015). With advances in the detection and treatment resulting in an estimated two million people living with and beyond cancer in the UK (World Cancer Research Fund, WCRF, 2018), the number of cancer survivors (CS) is rapidly increasing (Macmillan Cancer Support, 2008).

The definition of cancer survivors used in this review was the one suggested by the WCRF (2018): "…cancer survivors are defined as all people who have been diagnosed with cancer, including before, during, and after treatment" (p. 5).

The National Cancer Taskforce Report, at the NHS Long Term Plan Implementation (NHS England, 2019), aims to promote earlier cancer diagnoses, and considers that CS should receive personalised follow-up care. If cancers are detected earlier, people might live much longer following cancer diagnosis as, according to the World Health Organization (WHO, 2019), earlier cancer detection results in better responses to treatments, as well as better cancer prognosis and survival.

With more people living with and beyond cancer diagnoses, services are likely to receive significantly more referrals over time and psychological services need to develop capacity to be able to provide appropriate help and support for CS.

Anxiety prevalence in cancer survivors

There is a high prevalence of depression and anxiety in CS that seems to have negative effects on people's health-related quality of life (QoL, Nikbakhsh, Moudi, Abbasian, & Khafri, 2014). According to Klotz (2013), many people develop anxiety following cancer diagnosis due to it being a stressful and anxiety provoking situation.

Therefore, anxiety is very common in CS and can occur as a result of several factors such as: cancer symptoms, cancer diagnosis, cancer investigations, fear of cancer recurrence, as well as responses to cancer treatments including, response to chemotherapy, radiotherapy, and surgery (Andersen et al., 2004).

A longitudinal study revealed that almost half of participants diagnosed with breast cancer experienced anxiety during their first year of cancer diagnosis and high levels of anxiety persisted over time (Burgess, Cornelius, Love, Graham, Richards, & Ramirez, 2005). In line with this high prevalence of anxiety amongst CS, the National Institute for Health and Clinical Excellence (NICE, 2004) recommends that all CS should have access to psychological support and CS who experience severe psychological distress should be offered support from psychological specialists.

Evidence-base for Cognitive Behavioural Therapy interventions for anxiety

Cognitive Behavioural Therapy (CBT) is a form of psychotherapy that explains how thoughts and behaviours are interlinked and can affect people's feelings (Beck, Rush, Shaw & Emery, 1979). CBT is an evidence-based psychological intervention for anxiety and includes the application of a number of cognitive and behavioural techniques (Anderson, Watson, & Davidson, 2008; NICE, 2011). Anderson et al. (2008) described several examples of CBT cognitive techniques including identifying and challenging negative automatic thoughts, anxiety diaries, creating alternative positive thoughts, and linking thoughts, feelings, behaviours and physical symptoms. CBT behavioural techniques include goal setting, planning and implementing activities, and relaxations techniques.

Individual CBT interventions for anxiety in CS

There are several studies suggesting that individual CBT can help reduce anxiety in CS presenting with different cancer types (Vartolomei, Shariati, & Vartolomei, 2018; Ye et al., 2018). Some studies have also shown positive benefits of individual CBT interventions for patients with terminal cancer (Greer et al., 2012). A recent meta-analysis indicated efficacy of individual CBT interventions for treating anxiety in cancer patients (Ye et al., 2018).

Online and Telephone CBT interventions for anxiety in CS

A systematic review investigating the efficacy of online interventions for CS showed mixed findings (McAlpine & Martin-Sanchez, 2015). Despite this, another review conducted by McCaughan et al. (2017) reported that some studies were successful in reducing anxiety in beast cancer patients.

Furthermore, a study involving participants with various cancer types has also concluded that a telephone CBT intervention was successful, and clinically effective, in reducing anxiety (Watson, White, Lynch, & Mohammed, 2017).

Group CBT interventions for CS

Evidence also suggests that on top of experiencing high levels of emotional distress, CS also experience high levels of other quality of life issues including fatigue and sleeping problems. Some literature has indicated that group CBT interventions have been successful in improving fatigue in CS (Cohen & Fried, 2007). There is also extensive literature suggesting the effectiveness of group CBT for the treatment of sleep problems including insomnia (Garland et al., 2014).

Due to the high prevalence of depression and anxiety in CS, a number of group CBT studies have been conducted and some studies have shown positive benefits (Faller et al., 2013).

Rationale and review aim

Duncan et al. (2017) identified a number of systematic reviews assessing effectiveness of physical activity and diet interventions for CS some of which used CBT techniques. Therefore, lifestyle interventions were not included in the proposed review, as there seemed to be sufficient literature in this area.

Third-wave CBT interventions for CS such as Mindfulness-based interventions, Acceptance and Commitment Therapy (ACT), or Cognitive Behaviour Stress Management Interventions (CBSM), have been well reported in the literature. There is a meta-analysis of Mindfulness-based interventions amongst breast CS (Huang, He, Wang & Zhou, 2016), a recent review on ACT interventions in cancer (González-Fernández, S. & Fernández-Rodríguez, C., 2019) as well as several studies examining CBSM. Therefore, third-wave CBT interventions were excluded.

Additionally, as there were at least two reviews on group CBT for insomnia (CBT-I) for CS, these specific interventions were excluded (Garland et al., 2014; Johnson et al., 2016).

Moreover, there has been at least two reviews on online interventions for cancer populations (McAlpine & Martin-Sanchez, 2015; McCaughan et al. 2017) and there seemed to be insufficient telephone interventions conducted with CS. Thus, both online and telephone interventions were not reviewed.

Overall, there seems to be a significant number of reviews examining psychosocial interventions for CS. For instance, one review looked at psychosocial interventions to improve QoL and mood for recently diagnosed CS (Galway, Black,

Cantwell, Cardwell, Mills & Donnelly, 2012); another reviewed psychosocial interventions for men with prostate cancer (Parahoo et al., 2015), another solely for head and neck cancers (Semple, Parahoo, Norman, McCaughan, Humphris, & Mills, 2013) and another for women with non-metastatic breast cancer (Jassim, Whitford, Hickey, & Carter, 2015). There has also been a review of educational studies for CS (Bennett et al., 2016).

Due to the high number of research studies conducted using psychosocial interventions for CS, Duncan et al. (2017) conducted a review of systematic reviews for non-pharmacological interventions for CS. Therefore, for this review to be viable it had to be very specific regarding type of interventions included.

This review aims to explore group CBT interventions for anxiety in CS as no previous reviews were identified in this area. A recent meta-analysis explored the efficacy of individual and group CBT for mood and QOL for women with early stage breast cancer (Sun et al., 2019). However, this differs from the proposed review as it is cancer and stage specific.

Furthermore, although another review on psychosocial interventions for mood and quality of life in CS has been conducted, including individual and group psychosocial interventions, this review was conducted more than 10 years ago. This review is likely to be outdated. As there has been significant research published since that would not have been captured by this review (Osborn, Demoncada, & Feuerstein, 2006).

In sum, there has been an increase in psychological interventions for CS, namely group CBT interventions over recent years. However, despite this, there is paucity in the literature, comparing group CBT studies for anxiety offered to CS, to determine their effectiveness in improving anxiety that is the main aim of this review.

Due to the high volume of psychosocial interventional studies published, this review has included solely group CBT studies that have administered at least one cognitive and one behavioural technique in their intervention.

In sum, this study aims to answer the following research question: what is the effectiveness of group CBT interventions for anxiety in CS?

Methods

Literature search strategy

Preliminary searches using broad search terms were conducted to determine the relevance of the topic area and need for a review. A systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et. al, 2015). The search terms were initially extracted by checking relevant published literature reviews. The search terms were reviewed by academic supervisors and by a specialist clinical psychologist working in oncology. The final search terms included word variations of "cancer survivor", "group cognitive behaviour therapy", "anxiety" and "randomised controlled trial". Boolean operators AND, OR and the truncation symbol (*) were used to ensure all relevant studies were included in the search.

The full search terms list (Appendix A) was: (cancer survivor* OR cancer patient* OR neoplasm*) AND (group cognitive behav* OR group cognitive OR group behav* OR group CT OR group CBT OR group based cognitive OR group based behav* OR group based CT OR group based CBT) AND (RCT OR randomised controlled OR randomized controlled OR random*) AND (anxiety OR worry* OR worrie* OR anxious).

The databases selected were based on those commonly used in other reviews in psycho-oncology. A final search was conducted on the 4th November 2019 using four electronic databases: PsycINFO, MEDLINE, CINAHL and the Cochrane Database of Systematic Reviews. The inclusion of systematic reviews and trials identified through the Cochrane database was to check for any additional papers that may not have been detected using the other databases. No date restrictions were applied.

Eligibility criteria

Inclusion criteria:

Studies were included if: participants were adults over the age of 18; participants were CS of any type of cancer; they employed a randomised-controlled trial (RCT) experimental design; they examined anxiety; participants received a face-to-face Group-based Cognitive Behavioural Therapy (CBT) intervention; and the intervention included at least one cognitive and one behavioural technique.

Any group-based CBT intervention was accepted as long as they specified being a CBT intervention covering at least one cognitive and behavioural technique in the study intervention.

Exclusion criteria:

Studies were excluded if: they did not satisfy any of the inclusion criteria, they were not written in English, they were not a peer review article, the interventions were for caregivers, interventions were for couples, interventions were for healthcare professionals, they were solely self-help interventions, they were poster or conference abstracts with no publication of full article, or if they were a review of the literature.

The following non-traditional CBT and third wave interventions were excluded: online or telephone interventions, lifestyle interventions, mindfulness-based interventions, acceptance and commitment therapy interventions, cognitive behavioural

stress management interventions (CBSM), cognitive behavioural therapy for insomnia (CBT-I), cognitive rehabilitation studies, cognitive-existential studies or counselling or mentor based interventions.

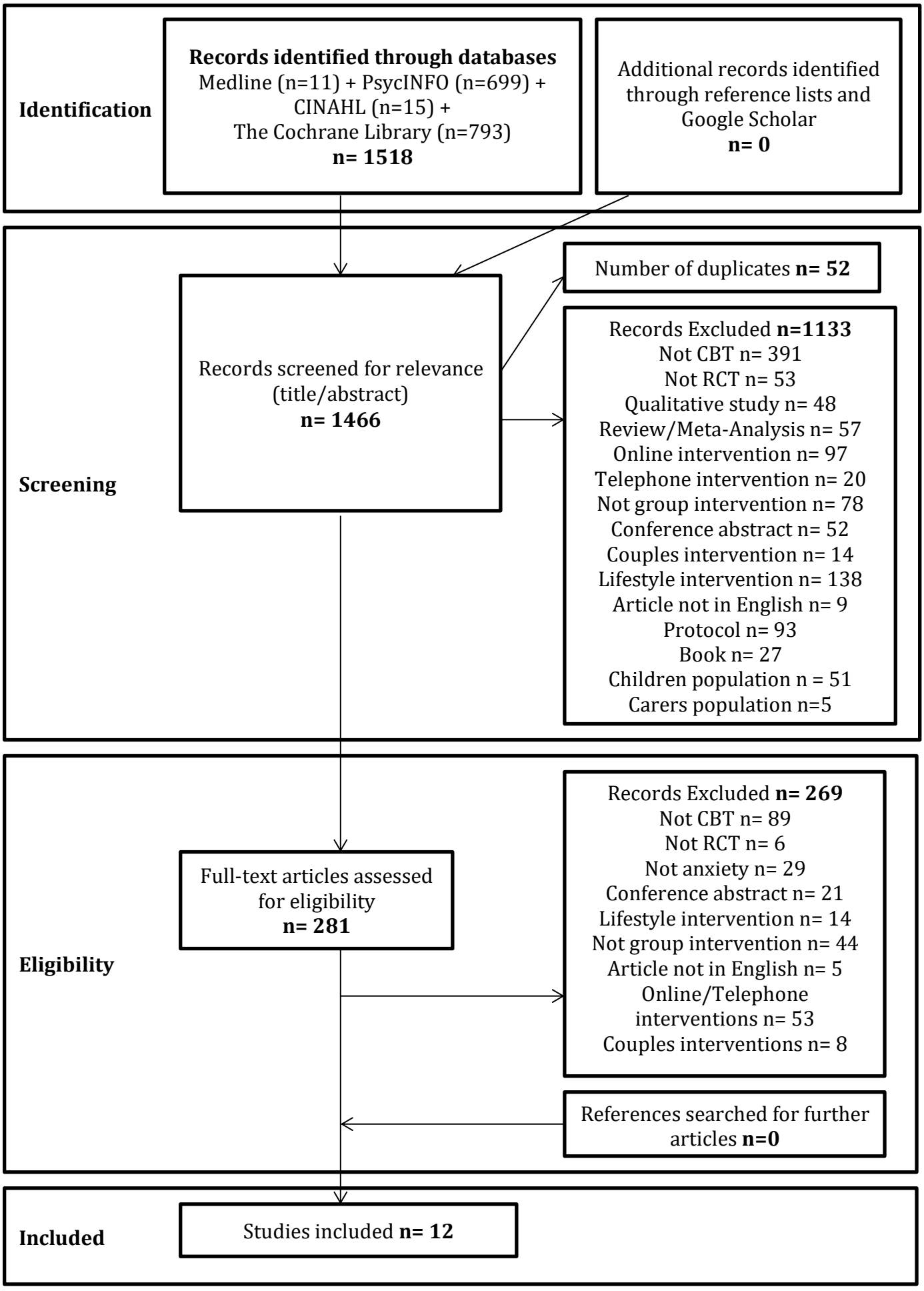
Studies that had only included either a cognitive (such as cognitive therapy) or behavioural intervention (such as behavioural intervention) were excluded. The decision on using studies that had both a cognitive and behavioural component was based on previous reviews suggesting that it enables a clearer comparison between interventions (Weston, Hodgekins & Langdon, 2016).

Search results

All search results (n=1518) were transferred to the reference management tool ProQuest RefWorks (Hendrix, 2004) and duplication of articles (n=52) were removed. The remaining articles (n=1466) were screened against the inclusion and exclusion criteria, by title and abstract. Then, the author read the abstract and full text of all eligible articles (n=281). Reference list screening from relevant papers and searches conducted on Google Scholar did not identify any additional studies (n=0). The Cochrane Collaboration Risk of Bias II tool (Sterne et al., 2019) quality assessment tool was used to guide data extraction.

As a result, the screening obtained a total of 12 studies that were included in this review. Figure 1 displays the PRISMA diagram of the search results and screening process.

Figure 1. PRISMA four-phase flow diagram of study selection of the systematic review adapted from Moher et al. (2015)


Identification
Records identified through databases
Medline (n=11) + PsycINFO (n=699) +
CINAHL (n=15) +
The Cochrane Library (n=793)
n= 1518
Additional records identified through reference lists and Google Scholar
n= 0
Screening
Records screened for relevance (title/abstract)
n= 1466
Number of duplicates n= 52
Records Excluded n=1133
Not CBT n= 391
Not RCT n= 53
Qualitative study n= 48
Review/Meta-Analysis n= 57
Online intervention n= 97
Telephone intervention n= 20
Not group intervention n= 78
Conference abstract n= 52
Couples intervention n= 14
Lifestyle intervention n= 138
Article not in English n= 9
Protocol n= 93
Book n= 27
Children population n = 51
Carers population n=5
Eligibility
Full-text articles assessed for eligibility
n= 281
Records Excluded n= 269
Not CBT n= 89
Not RCT n= 6
Not anxiety n= 29
Conference abstract n= 21
Lifestyle intervention n= 14
Not group intervention n= 44
Article not in English n= 5
Online/Telephone interventions n= 53
Couples interventions n= 8
References searched for further articles n=0
Included
Studies included n= 12

Quality assessment

A quality assessment tool was used to guide data extraction and critiquing of the quality of reporting made by the studies identified. Thus, the risk of bias was assessed to determine the quality of the methodology of the studies included in this systematic review, using the latest version of the Cochrane Collaboration Risk of Bias II tool (Sterne et al., 2019). This was the chosen tool for assessing risk of bias due to its strong clinical and empirical evidence for randomised controlled trials (Liberati et al., 2009; Sterne et al., 2019). According to Sterne et al. (2019), the revised tool evaluates all types of bias in these five main domains: 1) bias arising from the randomization process; 2) bias due to deviations from intended interventions; 3) bias due to missing outcome data; 4) bias in measurement of the outcome and, 5) bias in selection of the reported result. Each study's overall risk of bias rating was calculated and illustrated in Table 1. More detailed descriptions on risk of bias are summarised in Tables 2 and 3 (see Appendix). Subsequent to this screening, findings were summarised, critiqued, and implications for the future were stated before making final conclusions.

Table 1. Summary of Cochrane Risk of Bias II tool (Sterne et al, 2019) applied to all studies included

Risk of Bias Domain	**Risk of bias**	Abad et al. 2016 Quasi experimental	Chilcot et al. 2014	Doulbeault et al 2009	Edelman et al 2009	Evans et al 1995	Herschbach et al. 2010	Korstjens et al. 2011	Kwekkeboom et al. 2018	Merckaert et al. 2017	Qiu et al. 2013	Ren et al. 2019	Siddons et al. 2013
1. Randomisation process	Risk of bias	Low	Low	Low	Low	Some concerns	Low	Some concerns	Low	Low	Low	Low	Low
2. Deviations from intended interventions	Risk of bias	Low	Low	Low	Low	Low	Low	Low	Some concerns	Low	Low	Low	Low
3. Due to missing outcome data	Risk of bias	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
4. Measurement of the outcome	Risk of bias	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
5. Selection of the reported result	Risk of bias	Low	Low	Low	Low	Low	Low	Low	High	Low	Low	Low	High
	OVERALL RISK OF BIAS	Low	Low	Low	Low	Some concerns	Low	Some concerns	High	Low	Low	Low	High

Table 2. Cochrane Risk of Bias II tool (Sterne et al, 2019) applied to studies included 1-6.

Risk of Bias Domain	**Questions Y/PY/PN/N/NI***	Abad et al. 2016 Quasi experimental	Chilcot et al. 2014	Doulbeault et al 2009	Edelman et al 2009	Evans et al 1995	Herschbach et al. 2010
1. Randomisation process	1.1 Was the allocation sequence random?	PY	Y	Y	Y	PY	Y
	1.2 Was the allocation sequence concealed until participants were enrolled and assigned to interventions?	Y	Y	Y	Y	NI	PY
	1.3 Did baseline differences between intervention groups suggest a problem with the randomization process?	N	N	N	N	N	N
	Risk of bias judgement	Low	Low	Low	Low	Some concerns	Low
2. Deviations from intended interventions	2.1. Were participants aware of their assigned intervention during the trial?	PY	Y	Y	Y	Y	Y
	2.2. Were carers and people delivering the interventions aware of participants' assigned intervention during the trial?	Y	Y	Y	Y	Y	Y
	2.3. If Y/PY/NI to 2.1 or 2.2: Were there deviations from the intended intervention that arose because of the trial context?	N	N	N	N	PN	N
	2.4 If Y/PY to 2.3: Were these deviations likely to have affected the outcome?	----	----	----	----	----	----
	2.5. If Y/PY/NI to 2.4:Were these deviations from intended intervention balanced between groups?	----	----	----	----	----	----
	2.6 Was an appropriate analysis used to estimate the effect of assignment to intervention?	PY	Y	Y	PY	Y	Y
	2.7 If N/PN/NI to 2.6: Was there potential for substantial impact (on the result) of the failure to analyse participants in the group to which they were randomized?	-----	----	----	----	----	----
	Risk of bias judgement	Low	Low	Low	Low	Low	Low
3. Due to missing outcome data	3.1 Were data for this outcome available for all, or nearly all, participants randomized?	Y	Y	Y	Y	Y	Y
	3.2 If N/PN/NI to 3.1: Is there evidence that the result was not biased by missing outcome data?	----	----	----	----	----	----
	3.3 If N/PN to 3.2: Could missingness in the outcome depend on its true value?	----	----	----	----	----	----

	3.4 If Y/PY/NI to 3.3: Is it likely that missingness in the outcome depended on its true value?	----	----	----	----	----	----
	Risk of bias judgement	Low	Low	Low	Low	Low	Low
4. Measurement of the outcome	4.1 Was the method of measuring the outcome inappropriate?	N	N	N	N	N	N
	4.2 Could measurement or ascertainment of the outcome have differed between intervention groups?	N	N	N	N	N	N
	4.3 If N/PN/NI to 4.1 and 4.2: Were outcome assessors aware of the intervention received by study participants?	PY	N	PY	Y	Y	Y
	4.4 If Y/PY/NI to 4.3: Could assessment of the outcome have been influenced by knowledge of intervention received?	PN	----	PN	PN	PN	PN
	4.5 If Y/PY/NI to 4.4: Is it likely that assessment of the outcome was influenced by knowledge of intervention received?	----	----	---	----	----	----
	Risk of bias judgement	Low	Low	Low	Low	Low	Low
5. Selection of the reported result	5.1 Were the data that produced this result analysed in accordance with a pre-specified analysis plan that was finalized before unblinded outcome data were available for analysis?	Y	Y	Y	Y	PY	Y
	Is the numerical result being assessed likely to have been selected, on the basis of the results, from...						
	5.2. ... multiple eligible outcome measurements (e.g. scales, definitions, time points) within the outcome domain?	N	N	N	N	N	N
	5.3 ... multiple eligible analyses of the data?	PN	PN	N	N	N	N
	Risk of bias judgement	Low	Low	Low	Low	Low	Low
	OVERALL RISK OF BIAS	Low	Low	Low	Low	Some concerns	Low

***Y = Yes; PY = Probably Yes; PN = Probably No; N= No, NI= No Information**

Table 3. Cochrane Risk of Bias II tool (Sterne et al, 2019) applied to studies included 7-12.

Risk of Bias Domain	**Questions** **Y/PY/PN/N/NI***	Korstjens et al. 2011	Kwekkeboom et al. 2018	Merckaert et al. 2017	Qiu et al. 2013	Ren et al. 2019	Siddons et al. 2013
1. Randomisation process	1.1 Was the allocation sequence random?	No	Y	Y	Y	Y	Y
	1.2 Was the allocation sequence concealed until participants were enrolled and assigned to interventions?	Y	Y	Y	Y	Y	Y
	1.3 Did baseline differences between intervention groups suggest a problem with the andomization process?	PN	N	N	N	N	N
	Risk of bias judgement	Some concerns	Low	Low	Low	Low	Low
2. Deviations from intended interventions	2.1. Were participants aware of their assigned intervention during the trial?	Y	N	Y	Y	Y	Y
	2.2. Were carers and people delivering the interventions aware of participants' assigned intervention during the trial?	Y	Y	Y	Y	Y	Y
	2.3. If Y/PY/NI to 2.1 or 2.2: Were there deviations from the intended intervention that arose because of the trial context?	N	PY	N	N	N	N
	2.4 If Y/PY to 2.3: Were these deviations likely to have affected the outcome?	----	PN	----	-----	----	----
	2.5. If Y/PY/NI to 2.4:Were these deviations from intended intervention balanced between groups?	----	----	----	----	----	----
	2.6 Was an appropriate analysis used to estimate the effect of assignment to intervention?	Y	Y	Y	Y	Y	Y
	2.7 If N/PN/NI to 2.6: Was there potential for substantial impact (on the result) of the failure to analyse participants in the group to which they were randomized?	----	----	----	----	----	----
	Risk of bias judgement	Low	Some concerns	Low	Low	Low	Low
3. Due to missing outcome data	3.1 Were data for this outcome available for all, or nearly all, participants randomized?	Y	Y	Y	Y	Y	PY
	3.2 If N/PN/NI to 3.1: Is there evidence that the result was not biased by missing outcome data?	----	----	----	----	----	----

	3.3 If N/PN to 3.2: Could missingness in the outcome depend on its true value?	----	----	----	----	----	----
	3.4 If Y/PY/NI to 3.3: Is it likely that missingness in the outcome depended on its true value?	----	----	----	----	----	----
	Risk of bias judgement	Low	Low	Low	Low	Low	Low
4. Measurement of the outcome	4.1 Was the method of measuring the outcome inappropriate?	PN	PN	N	N	N	N
	4.2 Could measurement or ascertainment of the outcome have differed between intervention groups?	N	N	N	N	N	PN
	4.3 If N/PN/NI to 4.1 and 4.2: Were outcome assessors aware of the intervention received by study participants?	Y	Y	Y	Y	N	Y
	4.4 If Y/PY/NI to 4.3: Could assessment of the outcome have been influenced by knowledge of intervention received?	PN	PN	PN	PN	----	PN
	4.5 If Y/PY/NI to 4.4: Is it likely that assessment of the outcome was influenced by knowledge of intervention received?	----	----	----	----	----	----
	Risk of bias judgement	Low	Low	Low	Low	Low	Low
5. Selection of the reported result	5.1 Were the data that produced this result analysed in accordance with a pre-specified analysis plan that was finalized before unblinded outcome data were available for analysis?	Y	PY	Y	Y	Y	Y
	Is the numerical result being assessed likely to have been selected, on the basis of the results, from...						
	5.2. ... multiple eligible outcome measurements (e.g. scales, definitions, time points) within the outcome domain?	N	N	PN	N	N	N
	5.3 ... multiple eligible analyses of the data?	N	PY	N	N	N	Y
	Risk of bias judgement	Low	High	Low	Low	Low	High
	OVERALL RISK OF BIAS	Some concerns	High risk	Low	Low	Low	High risk

Table 4. Summary of study characteristics.

Author (year)	**Country**	**Sample** (n, age, gender, ethnicity)	**Clinical Population** (cancer type)	**Intervention(s) type and Control groups**	**Intervention duration**	**Follow up**	**Main outcome variables**	**Measures**	**Results**
Abad et al. (2016)	Iran	N= 36 Mean age = not reported (age ranged 26-65) 100% female Ethnicity = not reported	Breast cancer	3 arm RCT group: CBT intervention ACT intervention Control group Control group did not receive any intervention.	8 sessions (both intervention arms)	3 months post therapy	Stress Anxiety Depression	Depression, Anxiety and Stress Scale (DASS) Demographic Questionnaire	ACT and CBT are effective in reducing depression. CBT is more effective than ACT in reducing depression. CBT not statistically effective in reducing anxiety.
Chilcot, et al. (2014).	U.K.	N= 96 Mean age (SD) = 53.61 (7.93) 100% women 85% white	Breast cancer Patients f	2 arm RCT Usual care or Usual care plus group CBT Group CBT included psycho-education, paced breathing, cognitive and behavioural strategies to manage HFNS	6 weeks (weekly 90 min session)	9 weeks after randomisation (about 2 weeks after treatment) 26 weeks after treatment (about 19 weeks after treatment)	HFNS Depression Anxiety Stress QoL	Hot Flush Rating Scale/ Beliefs Scale The HFNS Behaviour Scale The Perceived Stress Scale Subscales of the Women's Health Questionnaire (WHQ) The Somatosensory Amplification Scale (SSAS) The Revised Life Orientation Test (LOT-R)	Group CBT significantly reduced HFNS problem rating at 9 weeks (mean difference –1·67, 95% CI –2·43 to –0·91; P<0.0001). Improvements were maintained at 26 weeks (mean difference –1·76, –2·54 to –0·99; p<0.0001). Effective on reducing anxiety, sleep problems and improved quality of life.
Dolbeault, et al. (2009).	France	N= 203 Mean age (SD)= 53.05(9.45) 100% female	Breast cancer who had completed primary treatment No recurrence and no	Psycho-educational CBT intervention group Waiting-list control group The groups were composed of 8–12 participants	8 week programme of 2h sessions	1 month post intervention	Anxiety Psychological adjustment	State-Trait Anxiety Inventory (STAI) Profile of Mood States (POMS) The Mental Adjustment to Cancer Scale (MAC)	Significant reduction in anxiety, anger, and depression. Improvement in interpersonal relationships, health status and fatigue levels.

		Ethnicity= not reported	metastases					EORTC core quality of life questionnaire (EORTC QLQ-C30) Breast cancer module (EORTC QLQ-BR23	Coping strategies were not significantly different between groups.
Edelman et al. (1999).	Australia	N= 60 Mean age= 48(SD 9.6) 100% female Ethnicity = not reported	Primary stage (I or II) breast cancer	2 arm RCT: CBT group Supportive therapy group Each group had 8-9 participants.	12 weeks (weekly sessions of 2h each)	End of therapy 4 months	Depression Quality of life Self-esteem	The Profile of Mood States Functional Living Index Rosenberg Self-Esteem Scale Social Support	Both showed significant reductions in depression, quality of life and self-esteem relative to their baseline scores.
Evans, et al. (1995).	USA	N= 72 Mean age= 53.9 35% female 60% White	Stage II cancer patients: Lung cancer Bladder cancer Prostate cancer Head and Neck cancer	Group CBT	8 weeks CBT group 8 weeks social support group Group sessions lasted 1h per week.	8 weeks (end of treatment) 6 months post intervention	Depression Anxiety Perceived social support Psychiatric symptoms	CES-D Social Provisions Scale SCL-90-R Multidimensional Health Locus of Control Scale (MHLC)	Reduced anxiety.
Herschbach, et al. (2010).	Germany	N= 174 Mean age= 53.7(SD 10.2) 83% female Ethnicity not reported	Various cancer types : Breast cancer Colorectal Bladder Prostate Gynaecological Other cancers	3 arm RCT Cognitive-behavioral group therapy (CBT) Supportive-experiential group therapy (SET)TAU control group –	Each intervention group received 4 sessions, lasting 90 min each	3 months 12 months	Fear of progression (cancer) Anxiety Depression Quality of Life	FoP-Q Questions on Life Satisfaction (FLZ^M, German version) SF- 12 (German version) HADS, German version	CFear of progression, anxiety reduced with short interventions.

Korstjens, et al. (2011).	The Netherlands	N=147 Mean age= 48.8 (SD 10.9) 83.7% female	Various cancer types: Breast Heamatol. Gynae. Urologic Lung Colon Other	Group CBT	PT groups received 12 week (twice weekly, 2 h sessions) CBT group received 12 sessions (weekly, 2h sessions)	End of intervention 3months 9 months	Anxiety Depression Problem-solving	Social Problem- Solving Inventory-Revised (SPSI-R) Hospital Anxiety and Depression Scale (HADS)	Anxiety reduced significantly
Kwekkeboom, et al. (2018).	USA	N= 164 Mean age = 58.71(SD 9.60) 72% female 94% white	Metastatic cancer (various, including breast, lung, gastrointestinal, GYN, Prostate, others) adults, diagnosed with metastatic or recurrent solid tumor cancers, and receiving outpatient chemotherapy	CBS intervention OR Cancer education	9 weeks (each intervention)	6 weeks 9 weeks	Pain Fatigue Sleep Mood	Memorial Symptom Assessment Scale MD Anderson Symptom Inventory Imaging Ability Quest. Outcome Expectancy Scale 10-item Perceived Stress Scale Profile of Mood States—Short Form Tension- Anxiety subscale3 Center for Epidemiologic Studies—Depression questionnaire	Not significant reduction.
Merckaert, et al. (2017).	Belgium	N= 159 Mean age(SD) = 50.6 (SD = 10.1) 100% female Ethnicity not reported	Breast cancer Patients with nonmetastatic breast cancer Women diagnosed with nonmetastatic breast cancer who had been surgically treated were	Group CBT		T2 immediately after intervention	Anxiety regulation Psychological distress	Mental Adjustment to Cancer Scale 4-minute exposure to anxiety triggers 12-minute self-relaxation exercise Fear of Cancer Recurrence Inventory	Anxiety reduced significantly

			approached during radiotherapy or 1 month after intraoperative radiotherapy.					12-minute guided hypnosis exercise in which patients were asked to listen to an audio recording a 10-cm visual analog scale (VAS Relaxation Strategies Questionnaire HADS	
Qiu, et al. (2013).	China	N= 62 Mean age= 50.63(SD 7.09) 100% female Ethnicity = not reported	Breast cancer (stages 0-IV)	2 arm RCT: Group CBT (GCBT) Waiting list control group	10 weekly sessions of 2 h each plus one booster session one month after end of intervention	End of treatment 6 months	Major depression Anxiety Self-esteem	17-Item Hamilton Depression Rating Scale (17-HAMD) Self-Rating Anxiety Scale Functional Assessment of Cancer Therapy – Breast and Self-Esteem Scale (SES)	Reduced anxiety.
Ren, et al. (2019).	China	N= 392 Mean age= 47.06 (8.6) 100%women Ethnicity not reported	Breast cancer	3 groups: CBT , self-care management (SCM), Usual care (UC)		2, 4, 8, 12, 16, and 24 weeks	Depression Anxiety	Chinese version of the 17-item Hamilton Depression Rating Scale (HAMD-17) Chinese version of the 14- item Hamilton anxiety scale (HAMA-14)	Reduced depression and anxiety

Siddons, et al. (2013).	Australia	N= 60 Mean age= 62.34 100% male Ethnicity = not reported	Prostate cancer Who completed post-radical prostatectomy	2 arm RCT cognitive–behavioural group intervention Waiting-list control	8 weeks	End of intervention only	Mood Stress Anxiety Cancer related anxiety Quality of life Sexual functioning	Prostate Cancer-Related Quality of Life Scale (PCa-QoL) Depression Anxiety and Stress Scales Memorial Anxiety Scale for Prostate Cancer Derogatis Interview for Sexual Functioning—Self-Report (DISF-SR)	Improved QoL.

Literature review

This review identified 12 randomised controlled trials of group CBT interventions that examined effectiveness in reducing anxiety for CS. Target population, study characteristics, anxiety outcomes, and study quality in the reviewed studies were summarised and critiqued in this review. The risk of bias was inspected and was generally low for most studies. Tables 3 and 4 illustrate the risk of bias for each study. This thorough synthesis process enabled the identification of literature gaps.

Target Population

The studies included in this review were conducted in various countries, therefore, findings from this review will inform regarding group CBT effectiveness across various cultures. Only one study was conducted in the UK (Chilcot et al., 2014); one study was conducted in Iran (Abad et al., 2016); one in France (Dolbeault et al., 2009); one in Germany (Herschbach et al., 2010); one in the Netherlands (Korstjens et al., 2011) and one in Belgium (Merckaert et al**.,** 2017). In addition, there were two studies conducted in Australia (Edelman et al., 1999; Siddons et al., 2013); two Chinese (Qiu et al. 2013; Ren et al., 2019) and there were a further two American studies (Evans et al., 1995; Kwekkeboom et al., 2018).

Across studies, the sample size ranged from 36 to 392 participants and, when combined, there was 1625 participants in total. All participants included had at least one confirmed cancer diagnosis. Seven of the reviewed studies specifically focused on breast cancer participants (Abad et al., 2016; Chilcot et al., 2014; Dolbeault et al**.,** 2009; Edelman et al., 1999; Merckaert et al**.,** 2017; Qiu et al., 2013; Ren et al., 2019) and only one study included solely prostate cancer participants in their research (Siddons et al., 2013). The remaining four studies (Evans et al., 1995; Herschbach et al., 2010**;** Korstjens et al., 2011; Kwekkeboom et al., 2018) included participants who presented with a range of cancer diagnoses. For example, Herschbach et al. (2010) study included participants with colorectal, bladder, prostate, or gynecological cancers. In sum, more than half of the studies identified in this review were researching breast cancer.

The inclusion of studies with participants from a diverse range of cancer diagnosis enabled conclusions to be drawn regarding group CBT effectiveness for anxiety across different cancer types which were previously unknown for several cancer types.

Regarding cancer severity, three studies included participants with any cancer stage ranging from 0-IV (Herschbach et al., 2010; Qiu et al., 2013; Siddons et al., 2013), only one study had solely included metastatic cancers (Kwekkeboom et al., 2018) and all remaining 10 studies had only included people with cancer stages between 0-III. This is important as this review seemed to have a lack of studies that included participants with advanced cancers.

Whilst looking at participants' characteristics included in this review, the mean age of participants ranged from 47 years to 62 years. Only two studies had mean age above 55 years (Kwekkeboom et al., 2018; Siddons et al., 2013) and most studies included participants of working age, with three studies with mean age below 50 years (Edelman et al., 1999; Korstjens et al., 2011; Ren et al., 2019) and six with mean age between 50-55 years (Chilcot et al., 2014; Dolbeault et al., 2009; Evans et al., 1995; Herschbach et al., 2010; Merckaert et al., 2017; Qiu et al., 2013). Lastly, only one study had not provided mean age (Abad et al., 2016). There seems to be insufficient studies investigating younger adults populations as well as a limited number of studies for older adult populations.

Regarding gender differences, more than half of the studies (n= 7) included solely female participants in their sample (Abad et al., 2016; Chilcot et al., 2014; Dolbeault et al., 2009; Edelman et al., 1999; Merckaert et al., 2017; Qiu et al., 2013; Ren et al., 2019). In contrast, only one study had solely male participants (Siddons et al. 2013). Moreover, although the remaining studies (n= 4) included both men and women in their sample, three of them had more than 70% female participants, whilst only one study (Evans et al., 1995) had more male participants (65%) than female. There was a lack of studies including man in their sample, which is an artifact of the fact that most trials looked at breast cancer, however, this may be a barrier to gaining an understanding regarding therapy effectiveness for male participants.

The vast majority of studies (n= 9) did not report participants' ethnicity. In all the studies that reported this information (n= 3) participants from White ethnical backgrounds were highly represented with Kwekkeboom et al. (2018) reporting their study had 94% White participants and Chilcot et al. (2014) had 85% White participants. The Evans et al. (1995) had 60% White sample.

Study Design and characteristics

All 12 reviewed studies followed a randomised controlled trial (RCT) design. Most studies were a two arm RCT studies (n=7) with some of these studies comparing a group CBT intervention with control groups (Chilcot et al. 2014; Dolbeault et al. 2009; Kwekkeboom et al. 2018; Qiu et al. 2013; Siddons et al. 2013) and other studies comparing two interventions (Edelman et al. 1999; Merckaert et al. 2017). The remaining studies were all three arm RCTs (n= 5) that compared a group CBT intervention with another intervention and control group (Abad et al. 2016; Evans et al. 1995; Herschbach et al. 2010; Korstjens et al. 2011; Ren et al. 2019).

The studies differed in their control groups. Half of the studies included (n=6) had control groups who solely received treatment as usual (Abad et al., 2016; Chilcot et al., 2014; Evans et al., 1995; Herschbach et al.**,** 2010; Korstjens et al., 2011; Ren et al., 2019); two studies had a waiting-list control group, so they would receive the intervention after the study ended (Dolbeault et al.**,** 2009; Qiu et al., 2013), whereas four studies had comparative interventions because their control groups received some input or other types of interventions (Edelman et al., 1999; Kwekkeboom et al., 2018; Merckaert et al.**,** 2017; Siddons et al., 2013). For instance, in Kwekkeboom et al. (2018) study, participants in the control group received information and listened to cancer educational recordings and attention control training. These differences between control groups made it difficult for study comparisons.

All studies (n= 12) included a group CBT intervention addressing at least one cognitive technique and one behavioural technique. Some examples of cognitive techniques included

psychoeducation (Abad et al., 2016; Chilcot et al., 2014; Dolbeault et al., 2009), recognizing catastrophic thoughts, negative beliefs (Chilcot et al., 2014), thought records (Dolbeault et al., 2009), monitoring thoughts (Edelman et al., 1999), challenging and modification of thoughts (Evans et al., 1995; Siddons et al., 2013), problem identification (Herschbach et al**.,** 2010; Korstjens et al., 2011), cognitive restructuring (Merckaert et al**.,** 2017; Qiu et al., 2013), identifying coping strategies (Kwekkeboom et al., 2018) and replacing unhelpful beliefs (Ren et al., 2019). Examples of behavioural techniques included doing home tasks (Chilcot et al., 2014; Abad et al., 2016), practicing relaxation (Abad et al., 2016; Chilcot et al., 2014; Evans et al., 1995; Siddons et al., 2013), imagery exercises (Kwekkeboom et al., 2018), role-play (Dolbeault et al., 2009), goal setting (Edelman et al., 1999), behavioural activation (Qiu et al., 2013), distraction strategies (Ren et al., 2019), practicing problem solving skills (Korstjens et al., 2011; Merckaert et al**.,** 2017) and applying coping strategies (Herschbach et al., 2010).

In addition to the group CBT intervention arm, three arm studies or some control groups (n= 8) also received other types of intervention. Most of these interventions were group interventions (n= 7) such as an acceptance and commitment therapy (ACT) (Abad et al., 2016); supportive therapy (Edelman et al., 1999; Herschbach et al., 2010); a social support group intervention (Evans et al., 1995; Merckaert et al., 2017) where participants were encouraged to talk about their feelings, use self-reflection, and identify shared problems or; a group based self-management cancer rehabilitation with physical training (Korstjens et al., 2011). Only one study compared group CBT with an individual intervention that consisted of a self-care management (SCM) that included receiving information, rehabilitation training and focusing on participants reactions (Ren et al., 2019).

The duration of interventions ranged from four to fifteen sessions (Herschbach et al., 2010; Merckaert et al., 2017). Most studies provided either eight weekly sessions (Abad et al., 2016; Dolbeault et al**.,** 2009; Evans et al., 1995; Siddons et al., 2013) or more than eight sessions (Edelman et al., 1999; Korstjens et al., 2011; Kwekkeboom et al., 2018; Ren et al., 2019; Merckaert et al**.,** 2017; Qiu et al., 2013). Only a few studies provided less that eight

sessions (Chilcot et al., 2014; Herschbach et al.**,** 2010). Despite some studies having the same intervention duration; there were differences in the intensity of the interventions received. For example, although the intervention arm of both Evans et al. (1995) and Doubeault et al. (2009) studies involved receiving eight weekly sessions, in one study each session lasted one hour (Evans et al., 1995); whereas in the other study (Doubeault et al., 2009) each session lasted two hours. Although all studies offered group CBT, there was significant variability between the number of sessions received and intensity of participation required in each study that makes it difficult for study comparison.

The intervention follow-ups ranged from two weeks (Chilcot et al., 2014; Ren et al., 2019) to twelve months (Herschbach et al., 2010). Most studies had at least one or more follow-up outcome evaluations to assess changes over time, with the exception of the studies of Merckaert et al. (2017) and Siddons et al. (2013) which only evaluated effectiveness immediately at the end of the intervention. Furthermore, several studies (n= 5) had a follow-up at about two months (Kwekkeboom et al., 2018; Evans et al., 1995; Ren et al., 2019; Chilcot et al., 2014) and three months (n= 4) (Abad et al., 2016; Herschbach et al., 2010; Korstjens et al., 2011; Ren et al., 2019). Some studies had a follow-up evaluation at one month (Ren et al., 2019; Dolbeault et al., 2009), at four months (Edelman et al., 1999), at six months (Evans et al., 1995, Qiu et al., 2013; Ren et al., 2019) and one study had a follow-up at nine months (Korstjens et al., 2011).

Outcome measures

Anxiety was assessed using self-report outcome measures in all reviewed papers. Three studies assessed anxiety using the Hospital and Anxiety Depression Scale (HADS), which is a standardised measure widely used in assessing depression and anxiety in health settings (Herschbach et al., 2010; Korstjens et al., 2011; Merckaert et al., 2017). The Herschbach et al. (2010) study used the German version of HADS to assess anxiety and this version of HADS also has good validity (Herrmann, Buss, & Snaith, 1995). A further three studies (Dolbeault et

al., 2009; Edelman et al., 1999; Kwekkeboom et al., 2018) used the Profile of Mood States (POMS) which has previously shown to be a reliable measure for assessing anxiety and anger (McNair, Lorr & Droppleman, 1992).

Other self-reported outcome measures used to assess anxiety included the Depression, Anxiety and Stress Scale (DASS) used in Abad et al. (2016) study that is a valid and reliable outcome measure for anxiety and depression (Ng, Trauer, Dodd, Callaly, Campbell & Berk, 2007); the Women's Health Questionnaire (WHQ) used in Chilcot et al. (2014) study that is a good, and standardised, measure of anxiety (Hunter, 1992); the State and Trait Anxiety Inventory (STAI) used in Dolbeault et al. (2009) study that is a standardised measure (Spielberger, 1983); the Symptom Checklist-90-R (SCL-90-R) used in Evans et al. (1995) study that is a valid and widely used measure of anxiety and psychiatric distress (Derogatis, 1975); the 10-cm Visual Analogue Scale (VAS) used by Merckaert et al. (2017) that is a good measure of emotional distress (Davey, Barratt, Butow, & Deeks, 2007) and Siddons et al. (2013) used the Memorial Anxiety Scale for Prostate Cancer that is a valid and reliable measure of anxiety (Roth, 1998, 2003).

Other studies have used Chinese versions of self-reported measures. For instance, Qiu et al. (2013) used the Chinese version of the Self-rating Anxiety Scale that is a reliable measure to assess anxiety (Zung, 1971; Zhang, Liu, Mao, & Yuan, 2015) and Ren et al. (2019) used the valid and reliable Chinese version 14-item Hamilton Anxiety Scale (HAMA) to assess anxiety (Zheng, Zhao, Phillips, Liu, Cai, & Sun, 1988). Overall, it seemed that most studies used good, standardised and reliable measures of anxiety.

Intervention outcomes

Effective studies in reducing anxiety

When examining intervention outcomes, most studies indicated effectiveness of group CBT intervention in reducing anxiety in CS (Chilcot et al., 2014; Dolbeault et al., 2009; Evans et al., 1995; Herschbach et al., 2010; Korstjens et al., 2011; Merckaert et al., 2017; Ren et al.,

2019). Moreover, one of these studies reported that participants who received a multi-component structured group intervention (MGI) that combines CBT and hypnosis demonstrated significant reductions in anxiety symptoms and anxiety regulation even when exposed to anxiety triggers ($p<0.05$) (Merckaert et al., 2017).

A number of studies that indicated significant reduction of anxiety over time, following attending a group CBT intervention, also reported these changes were sustainable at longer-term follow-up (Chilcot et al., 2014, Herschbach et al., 2010, Korstjens et al., 2011, Ren et al., 2019). In Chilcot et al. (2014) study they discovered that their group CBT intervention was effective in reducing anxiety (mean difference −2.90, 95% CI −5.34 to −0.45, $p = 0.020$) at 9 weeks follow-up. Herschbach et al. (2010) also reported group CBT effectiveness in reducing anxiety (HADS-A, $F_{(3;381)}=11.54$, $p<0.001$) and these changes were maintained both at 3 and 12 months following intervention. Similarly, Korstjens et al. (2011) indicated that patients who received combined physical training (PT) and group CBT noticed statistically significant improvements in anxiety visible in the HADS scores, that were sustained at 3 and 9 months post intervention ($p<0.05$).

Regarding study quality, despite these promising results and the fact that most of the studies included in the review had good quality ratings, there were some concerns with the quality of two of these effectiveness studies, so these should be carefully interpreted (Evans et al., 1995, Korstjens et al., 2011). In both Evans et al. (1995) and Korstjens et al. (2011) studies there were some concerns regarding the randomisation process because although the allocation sequence seemed to be random, it is not clear from the published article whether the allocation sequence was concealed until participants were enrolled and assigned to the interventions. Adequate allocation sequence concealment includes a number of measures to prevent either participants or staff from knowing what study arm the participants might enrol after recruitment (Sterne et al., 2019). In these studies because it is unclear what specific steps were taken, there is a risk that researchers might have rejected participants to an intervention if these were

considered "inappropriate" and other participants might have been directed to certain types of intervention if deemed to be the "appropriate" intervention for that participant. Therefore, there might be some bias in results due to recruitment allocation.

Additionally, there were some differences in therapeutic success according to therapy duration and intensity. Results indicated that half of the studies where participants received a standard number of group CBT sessions (eight sessions) and half of the studies that received long-term interventions (more than eight sessions) were effective in reducing anxiety. Interestingly, all of the short-term interventions (less than eight sessions) included in this review indicated that participants experienced improved anxiety following group CBT (Chilcot et al., 2014; Herschbach et al.**,** 2010).

Therapy efficacy seems to be similar across cancer types included in this review.

Non-Effective studies in reducing anxiety

In contrast, several studies indicated that group CBT was not statistically effective in improving anxiety (Abad et al., 2016; Edelman et al., 1999; Kwekkeboom et al., 2018; Qiu et al., 2013; Siddons et al., 2013). Moreover, all studies but one (Kwekkeboom et al., 2018) that found no statistical significant difference for anxiety had smaller sample sizes with $n \leq 62$ participants (Abad et al. (2016); Edelman et al., 1999, Qiu et al., 2013, Siddons et al., 2013). Furthermore, participants were mostly female in all studies with no statistical significant difference for anxiety, except in Siddons et al. (2013) study in which all participants were male.

However, when considering studies that did not find statistically significant changes in anxiety post intervention, it is important to note that there were some concerns regarding the quality of two studies that had a high risk of bias (Kwekkeboom et al., 2018; Siddons et al., 2013). Regarding study quality for Kwekkeboom et al. (2018) study this was deemed to be a high risk of bias study. There were some concerns regarding the potential deviation from the intended intervention because people delivering the intervention were aware of the participants' assigned intervention during the trial. In addition to this, there were some concerns regarding the selection of the reported result. It is unclear whether the data produced resulted from a pre-

planned analysis and whether the researchers might have conducted multiple eligible analysis of the data. Moreover, both Kwekkeboom et al. (2018) and Siddons et al. (2013) studies were both deemed to be high risk of bias, because there seemed to be bias in the selection of the reported results and multiple eligible analyses that may indicate that researchers might want to seek significant or relevant results within their available data for the purpose of publication.

Due to lack of sufficient studies with advanced cancer, it is not possible to draw conclusions regarding group CBT effectiveness for CS with advanced or terminal cancers.

Discussion

A systematic review of the literature was conducted to identify whether group CBT interventions were effective in reducing anxiety in CS. Twelve studies were reviewed and several studies indicated that group CBT seemed effective in reducing anxiety in CS participants. Previous literature reviews have primarily focused on examining group CBT effectiveness in reducing anxiety by cancer type, cancer severity or gender specific findings. Findings from this review add to previous research because it examined group CBT therapy efficacy in reducing anxiety across all cancer types, stages and gender.

The group CBT interventions included in this review had a diverse number of cognitive and behavioural techniques that might have contributed to positive change and reduction in anxiety levels in CS. According to Cognitive theory and CBT, people's thoughts, behaviours and feelings are interlinked, and by using techniques such as challenging negative thoughts CS might change how they feel and what they do leading to reduced anxiety (Beck et al., 1979; Anderson et al., 2008).

Furthermore, one of the techniques used in the reviewed interventions was identifying and applying coping strategies. According to Stress Coping Theory, people use a number of problem-focused and emotional-focused skills by implementing coping strategies to deal with the stressors that they are faced with (Biggs, Brough & Drummond, 2017). CS have often to use these coping skills to deal with the challenges faced, for instance, they might want to use

their problem-focused coping skills to obtain diagnosis or in making informed decisions regarding their treatment options. CS also might have to use their emotional-focused coping skills for example, whilst dealing with information regarding their prognosis that might impact on their emotional wellbeing (Matthews & Cook, 2009).

Authors such as Yalom (Yalom, 1995) might argue that group CBT interventions are successful due to the group interaction factors rather then due to the content or techniques used. There is evidence suggesting a relationship between CS emotional support obtained from the interaction with others and positive outcomes (Helgeson & Cohen, 1996). Although these seem convincing explanations, other research findings had also indicated that negative social interactions may cause added distress in CS (Manne, Taylor, Dougherty, & Kemeny, 1997). Therefore, in line with the Social Cognitive Model of restorative wellbeing the nature of the environment and the group members who attended the group CBT interventions may have had a great influence on therapeutic outcomes (Hoffman, Lent, & Raque-Bogdan, 2013).

The different theories mentioned above might provide some ideas on reasons why therapeutic success might have occurred. Due to the range of techniques used and contributory factors that may have influenced the interventions, it is not possible to ascertain whether therapeutic success of the reviewed studies was due to specific CBT techniques used or group interaction factors. This is what the research project reported in Part B of this thesis dissertation aims to uncover.

Following quality inspection, most studies reviewed were considered to have good study quality ratings. There were two studies where there were some quality concerns and two studies were considered to have high risk of bias, thus, results from these four studies should be considered with caution. The majority of high quality studies suggest that group CBT is effective at reducing anxiety in CS with only two studies revealing some quality concerns as explained above in the results section. Moreover, low quality studies such as the two studies considered to have high risk of bias in this review, have both produced non-statistical significant results for anxiety following the intervention. Therefore, because most high quality

studies suggested effectiveness, on balance the evidence seems to indicate that group CBT interventions tend to be effective in reducing anxiety in CS.

Findings suggest that all short-term interventions offering less than eight sessions and half of the studies offering either eight or more sessions produced positive outcomes regarding anxiety in CS. This is of great importance because results are indicating that clinicians may consider short-term interventions, as these studies seemed to be effective. However, conclusions regarding long-term and medium-term interventions might not be generalised because, due to intervention differences between studies, there is insufficient data to be able to generalise findings. More studies are needed to consolidate these findings.

The vast majority of studies (n=10) included at least one follow-up evaluation post intervention. Follow-ups allowed studies to determine whether CS changes in anxiety levels after receiving group CBT interventions were sustained over time. A number of studies found that anxiety continued to be significantly reduced following the intervention at 9 weeks, 3 months, 9 months and 12 months. These results indicate that anxiety changes were sustained both at short-term and long-term post intervention. This is in line with findings from a meta-analysis for women with early stage breast cancer (Sun et al., 2019) and this review added that group CBT interventions were also successful for people with various types of cancer diagnosis. Furthermore, because a significant proportion of CS experience high levels of emotional distress, and the benefits of these interventions are sustained over time, more interventions should be delivered to help CS reducing their distress levels and improving their QoL.

This review included studies conducted in a wide range of countries worldwide. Having studies conducted in different countries is a strength as it enriches findings supporting efficacy of group CBT for CS across different cultures. However, as there only seems to be fewer than two studies reported in each country, it may not be sufficient to generalize their findings to the setting where they were conducted.

Although ideally research should be specific to their target population rather than having mixed cancer type studies, there is a risk that some cancers might be understudied when compared to others. A project conducted by Carter and Nguyen (2012) showed that there was a significant mismatch between research funding for different cancer types. Their investigation suggested that some cancers such as breast cancer, prostate cancer and leukemia received significantly more funding than other cancers such as bladder, stomach, and uterine. Thus, it is unsurprising that more than half of the studies identified in this review were researching breast cancer for which there is already a review showing effectiveness of group CBT interventions for low mood and anxiety (Sun et al., 2019). Despite this, one of the strengths of this review was the inclusion of studies with participants presenting with various cancer types because it enabled conclusions to be drawn regarding effectiveness across other understudied cancer diagnosis.

There seems to be paucity in the literature for younger adults. This is concerning as cancer diagnosis are increasing in younger adults and a recent study developed with young adults aged between 18-39 years identified that this age group faces a number of specific developmental issues that are not pertinent for older generations such as issues around fertility following cancer treatment (Hydeman, Uwazurike, Adeyemi, & Beaupin, 2019).

In addition to this, there were also a limited number of studies for older adult populations. This is particularly concerning due to the high prevalence of anxiety and cancer diagnosis amongst older adults. According to Weinberger et al. (2011) 60% of new cancer diagnosis occur in older people who, in addition, present the highest levels of suicide and are less likely to be referred for psychological treatments. With the treatment advancements, people are living longer following cancer diagnosis. Therefore, it is likely that a significant proportion of CS are from older generations thus research into these populations are of great importance. Some possible reasons for the lack of studies into older populations may be due to generational differences in seeking and accepting help (Merckaert et al. 2009) and inequities in provision of psychological services. A study has shown that younger people and working age adults

presented greater desire for psychological support when compared with older adults (Merckaert et al. 2009). So despite high prevalence of cancer and emotional distress amongst older adults, because they do not seek psychological support this might explain the lack of research studies when compared with other generations.

Female participants were vastly represented in the studies included in this review. This heightened female participation is not surprising because females are more likely to seek and engage in psychological therapy than males. In addition to this, most trials included participants with breast cancer that is an uncommon cancer site for men. However, due to this gender bias, results should be generalised with more caution for male participants if the sample was predominantly female and more research is needed including men.

Findings regarding ethnicity indicated major predominance of White participants in included studies. This is particularly concerning because there is a higher incidence of several cancer diagnosis in people from Black ethnic backgrounds and 5% higher mortality rates when compared with Caucasians (American Cancer Society, 2019). Efforts should be made to enable the inclusion of people from Black, Asian and Minority Ethnic (BAME) background in future research.

Limitations of review

This review identified a good number of published RCTs, with good study quality, examining effectiveness of group CBT for anxiety in cancer patients. Despite these strengths, this review also had a number of limitations. Due to limited resources, this review only included studies published in English language; therefore it might have omitted relevant studies published worldwide in other languages.

Studies reviewed were conducted in several countries and only one study was conducted in the UK. Therefore, there should be a degree of caution in generalising study results to the UK population due to cultural and contextual differences. For instance, foreign

studies with control groups who have received "treatment as usual" might not be possible to be generalised to the UK, because usual care treatments might differ significantly between nations.

Despite increased research projects in this area, the reviewed studies used different intervention duration, procedure, and intensity. This is a barrier for study comparison and these significant differences between studies might have influenced results. Thus, replication of the most effective interventions would be beneficial for greater generalisation. Another limitation was the fact that only one person extracted the data and reviewed the quality of the papers, due to the resources available to a doctoral Major Research Project.

Clinical and research implications

The current financial constraints in the National Health Service (NHS) mean that clinicians now have to work with limited resources (NHS England, 2015). Results from this review on balance seemed to indicate overall effectiveness of group CBT interventions for anxiety in cancer patients. In addition, studies found that short-term interventions also produced successful outcomes. Therefore, clinicians could opt to offer group interventions, as they usually require less staff resources as more CS could be seen simultaneously. Moreover, offering short-term group CBT for CS could result in significant service improvements such as helping to reduce waiting list times and improving patient satisfaction. Additionally, offering short-term group CBT for CS whilst they are in hospital could also be helpful, as usually CS might stay hospitalised for the minimum time possible and they could receive this intervention earlier. Additionally, the majority of the studies with successful outcomes involved working age adults. Thus, clinicians should take this into consideration when making decisions on what participants to invite for their interventions because evidence from this review seems to be insufficient to make conclusions regarding effectiveness of group CBT for younger adults or older adult populations. To avoid discrimination based on age in relation to service provision, it is important to conduct service evaluation to check whether positive outcomes can also be achieved with other age groups to strengthen findings for different age groups.

This review identified a number of research gaps. More studies are needed looking at coping skills for group CBT offered to CS. Furthermore, there seems to be a significant gap in the literature looking at studies for people from BAME ethnicity backgrounds as well as in studies for younger adults and older adult populations. It is important to develop research in these areas as these participants might have specific needs regarding adjustment to cancer that we are not aware of. Regarding advanced cancers, it was not possible to draw conclusions regarding therapy efficacy due to an insufficient number of studies available. This suggests that there is a lack of research studies in this area. Therefore, more studies are needed with CS with advanced cancers.

There is also paucity in the literature on qualitative studies looking at CS experiences of group CBT that is the main aim of the research project in Part B of this thesis dissertation.

Conclusion

This paper reviewed twelve RCT studies, which investigated the effectiveness of group cognitive behavioural therapy (CBT) interventions for improving anxiety in cancer survivors (CS). Previous literature indicated effectiveness of individual CBT in the treatment of anxiety in CS, however, most findings were specific to a particular cancer, or cancer severity. Although one previous review evaluated effectiveness of all types of psychosocial interventions for CS, this was conducted over 10 years ago. Therefore, information from this review is now outdated. Moreover, with the research attention given to CBT over the last years, there is a need to compare effectiveness of group CBT interventions across cancer groups and cancer severity to be able to determine who could benefit from such interventions that this review aims to explore.

This review indicated that most studies using group CBT seems to be effective in improving anxiety in CS irrespective of their cancer type. No conclusions could be drawn regarding cancer severity due to lack of studies for advanced cancers. These findings are consistent with results obtained from previous literature.

Results identified in this review are that all short-term interventions reviewed produced successful results in reducing anxiety. However, due to substantial differences noted between studies, study comparisons are limited and findings should be cautiously interpreted. Despite the encouraging findings from this review, there were methodological limitations presented by some studies. Moreover, there is a lack of RCT studies conducted in the UK and more studies are needed involving people from BAME ethnic backgrounds, young adults and older adult populations. Future research is needed to replicate interventions in the UK, to be able to draw more solid conclusions.

References

Abad, A., Bakhtiari, M., Kashani, F. L., & Habibi, M. (2016). The comparison of effectiveness of treatment based on acceptance and commitment with cognitive-behavioral therapy in reduction of stress and anxiety in cancer patients. *International Journal of Cancer Research and Prevention, 9*(3), 229-246. Retrieved from https://www.cochranelibrary.com/central/doi/10.1002/central/CN-01245443/full

American Cancer Society. (2019). Cancer facts and figures 2019. Atlanta: American Cancer Society.

Andersen, B. L., Farrar, W. B., Golden-Kreutz, D. M., Glaser, R., Emery, C. F., Crespin, T. R., . . . Carson, W. E. (2004). Psychological, behavioral, and immune changes after a psychological intervention: A clinical trial. *Journal of Clinical Oncology, 22*(17), 3570-3580. doi:10.1200/JCO.2004.06.030

Anderson, T.N., Watson, M.P., & Davidson, R. (2008). The use of cognitive behavioural therapy techniques for anxiety and depression in hospice patients: a feasibility study. *Palliative medicine, 22 7*, 814-21 .

Beck, J. (2011). *Cognitive behaviour therapy: Basics and beyond* (2nd ed.). New York: The Guildford Press.

Beck, A. T., Rush J. A., Shaw. B. F., & Emery, G. (1979). *Cognitive Therapy of Depression*. New York: Guilford Press.

Bellver-Pérez, A., Peris-Juan, C., & Santaballa-Beltrán, A. (2019). Effectiveness of therapy group in women with localized breast cancer. *International Journal of Clinical and Health Psychology, 19*(2), *107-114.* https://dx.doi.org/10.1016/j.ijchp.2019.02.001

Bennett, S., Pigott, A., Beller, E. M., Haines, T., Meredith, P., & Delaney, C. (2016).

Educational interventions for the management of cancer-related fatigue in adults. *The Cochrane database of systematic reviews*, *11*(11), CD008144. https://dx.doi.org/10.1002/14651858.CD008144.pub2

Biggs, A., Brough, P. and Drummond, S. (2017). Lazarus and Folkman's Psychological Stress and Coping Theory. In The Handbook of Stress and Health (eds C.L. Cooper and J.C. Quick). doi:10.1002/9781118993811.ch21

Burgess, C., Cornelius, V., Love, S., Graham, J., Richards, M., & Ramirez, A. (2005). Depression and anxiety in women with early breast cancer: Five year observational cohort study. *British Medical Journal, 330*, 702-706. https://dx.doi.org/10.1136/bmj.38343.670868.D3

Cancer Research UK. (2017, n.d.). *What is cancer?* Retrieved from

http://www.cancerresearchuk.org/about-cancer/what-is-cancer

Carter, A. J., & Nguyen, C. N. (2012). A comparison of cancer burden and research spending reveals discrepancies in the distribution of research funding. *BMC public health, 12*, 526. doi:10.1186/1471-2458-12-526

Chilcot, J., Norton, S., & Hunter, M. S. (2014). Cognitive behaviour therapy for menopausal symptoms following breast cancer treatment: Who benefits and how does it work? *Maturitas, 78*(1), 56-61.

Cohen, M., & Fried, G. (2007). Comparing relaxation training and cognitive- behavioral group therapy for women with breast cancer. *Research on Social Work Practice, 17*(3), 313-323. http://dx.doi.org/10.1177/1049731506293741

Davey, H. M., Barratt, A. L,. Butow, P. N., Deeks, J. J. (2007). A one-item question with a Likert or Visual Analog Scale adequately measured current anxiety. *Journal of Clinical*

Epidemiology, *6*0(4), 356–360.

Derogatis, L. R. (1975). *The SCL-90-R.* Clinical Psychometrics Research Unit, Johns Hopkins University. Baltimore, MD.

Dolbeault, S., Cayrou, S., Brédart, A., Viala, A. L., Desclaux, B., Saltel, P., . . . Dickes, P. (2009). The effectiveness of a psycho-educational group after early-stage breast cancer treatment: Results of a randomized french study. *Psycho-Oncology, 18*(6), 647-656. doi:10.1002/pon.1440

Duncan, M., Moschopoulou, E., Herrington, E., Deane, J., Roylance, R., Jones, L., … SURECAN Investigators (2017). Review of systematic reviews of non-pharmacological interventions to improve quality of life in cancer survivors. *BMJ open*, *7*(11), e015860. https://dx.doi.org/10.1136/bmjopen-2017-015860

Edelman et al (1999). Group CBT Versus Supportive Therapy With Patients Who Have Primary Breast Cancer.

Evans, R. L., & Connis, R. T. (1995). Comparison of brief group therapies for depressed cancer patients receiving radiation treatment. *Public Health Reports (Washington, D.C.: 1974), 110*(3), 306-311.

Faller, H., Schuler, M., Richard, M., Heckl, U., Weis, J., & Küffner, R. (2013). Effects of psycho-oncologic interventions on emotional distress and quality of life in adult patients with cancer: Systematic review and meta-analysis. *Journal of Clinical Oncology*, *31*(6), 782-793. http://dx.doi.org/10.1200/JCO.2011.40.8922

Galway, K., Black, A., Cantwell, M., Cardwell, C. R., Mills, M., & Donnelly, M. (2012). Psychosocial interventions to improve quality of life and emotional wellbeing for recently diagnosed cancer patients. *The Cochrane database of systematic*

reviews, *11*(11), CD007064. https://dx.doi.org/10.1002/14651858.CD007064.pub2

Garland, S. N., Johnson, J. A., Savard, J., Gehrman, P., Perlis, M., Carlson, L., & Campbell, T. (2014). Sleeping well with cancer: a systematic review of cognitive behavioral therapy for insomnia in cancer patients. *Neuropsychiatric disease and treatment*, *10*, 1113–1124. https://dx.doi.org/10.2147/NDT.S47790

Gielissen, M. F., Verhagen, C. A., & Bleijenberg, G. (2007). Cognitive behaviour therapy for fatigued cancer survivors: long-term follow-up. *British journal of cancer*, *97*(5), 612–618. doi:10.1038/sj.bjc.6603899

González-Fernández, S. & Fernández-Rodríguez, C. (2019). Acceptance and Commitment Therapy in cancer: Review of applications and findings. Behavioral Medicine, 45(3), 255 269. https://dx.doi.org/10.1080/08964289.2018.1452713

Greer, J. A., Traeger, L., Bemis, H., Solis, J., Hendriksen, E. S., Park, E. R., … Safren, S. A. (2012). A pilot randomized controlled trial of brief cognitive-behavioral therapy for anxiety in patients with terminal cancer. *The oncologist*, *17*(10), 1337–1345. doi:10.1634/theoncologist.2012-0041

Gregoire, C., Bragard, I., Jerusalem, G., Etienne, A., Coucke, P., Dupuis, G., Lanctot, D., & Faymonville, M. (2017). Group interventions to reduce emotional distress and fatigue in breast cancer patients: a 9-month follow-up pragmatic trial. British Journal of Cancer, 117, 1442-1449.

Helgeson, V. S., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology, 15*, 135-148.

Herrmann, C., Buss, U., Snaith, R. P. (1995). HADS-D Hospital anxiety and depression scale—Deutsche version: ein fragebogen zur erfassung von angst und depressivität in der somatischen medizin. Huber, Bern.

Herschbach, P., Book, K., Dinkel, A., Berg, P., Waadt, S., Duran, G., . . . Henrich, G. (2010). Evaluation of two group therapies to reduce fear of progression in cancer patients. *Supportive Care in Cancer, 18*(4), 471-479. doi:10.1007/s00520-009-0696-1 CBT

Hoffman, M. A., Lent, R. W., & Raque-Bogdan, T. L. (2013). A Social Cognitive Perspective on Coping With Cancer: Theory, Research, and Intervention. *The Counselling Psychologist*, *41*(2), 240–267. https://doi.org/10.1177/0011000012461378

Huang, H. P., He, M., Wang, H. Y., & Zhou, M. (2016). A meta-analysis of the benefits of mindfulness-based stress reduction (MBSR) on psychological function among breast cancer (BC) survivors. *Breast Cancer, 23*, 568-576. https://dx.doi.org/10.1007/s12282-015-0604-0

Hunter, M. (1992). The women's health questionnaire: a measure of mid-aged women's perceptions of their emotional and physical health. *Psychology & Health, 7*(1), 45–54.

Hydeman, J. A., Uwazurike, O. C., Adeyemi, E. I., & Beaupin, L. K. (2019). Survivorship needs of adolescent and young adult cancer survivors: a concept mapping analysis. *Journal of cancer survivorship : research and practice*, *13*(1), 34–42. doi:10.1007/s11764-018-0725-5

Jassim, G. A., Whitford, D. L., Hickey, A., & Carter, B. (2015). Psychological inteventions for wmen with non-metastatic breast cancer. *Cochrane Database of Systematic Reviews, 5*. https://dx.doi.org/10.1002/14651858.CD008729.pub2

Johnson, J. A., Rash, J. A., Campbell, T. S., Savard, J., Gehrman, P. R., Perlis, M., Carlson, L. E., & Garland, S. N. (2016). A systematic review and meta-analysis of randomized

controlled trials of cognitive behavior therapy for insomnia (CBT-I) in cancer survivors. *Sleep Medicine Reviews, 27,* 20-28.

Klotz, L. (2013). Active surveillance, quality of Life, and cancer-related anxiety. *European Urology, 64,* 37-40.

Korstjens, I., Mesters, I., May, A. M., van Weert, E., van, d. H., Ros, W., . . . van, d. B. (2011). Effects of cancer rehabilitation on problem-solving, anxiety and depression: A RCT comparing physical and cognitive-behavioural training versus physical training. *Psychology & Health, 26 Suppl 1,* 63-82. doi:10.1080/08870441003611569

Kwekkeboom, K., Zhang, Y., Campbell, T., Coe, C. L., Costanzo, E., Serlin, R. C., & Ward, S. (2018). Randomized controlled trial of a brief cognitive-behavioral strategies intervention for the pain, fatigue, and sleep disturbance symptom cluster in advanced cancer. *Psycho-Oncology, (no pagination)* doi:10.1002/pon.4883

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P. A., … Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-alaysis of studies that evaluate healthcare interventions: Explanation and elaboration. *The British Medical Journal, 339,* 1-27. https://dx.doi.org/10.1136/bmj.b2700

Manne, S. L., Taylor, K. L., Dougherty, J., & Kemeny, N. (1997). Supportive and negative responses in the partner relationship: Their association with psychological adjustment among individuals with cancer. *Journal of Behavioral Medicine, 20,* 101-125.

Matthews, E. E., & Cook, P. F. (2009). Relationships among optimism, well-being, self-transcendence, coping, and social support. *Psycho-Oncology, 18,* 716-726.

McAlpine, H., Joubert, L., Martin-Sanchez, F. (2015). A systematic review of types and efficacy of online interventions for cancer patients. *Patient Educational Counselling, 98,* 283–295.

McCaughan, E., Parahoo, K., Hueter, I., Northouse, L., & Bradbury, I. (2017). Online support groups for women with breast cancer. *The Cochrane database of systematic reviews*, *3*(3), CD011652. doi:10.1002/14651858.CD011652.pub2

McNair, D. M., Lorr, M., Droppleman, L. P. (1992). *Manual for the Profile of Mood States.* Educational and Industrial Testing Service: EdITS. San Diego: CA.

Merckaert, I., Lewis, F., Delevallez, F., Herman, S., Caillier, M., Delvaux, N., . . . Ogez, D. (2017). Improving anxiety regulation in patients with breast cancer at the beginning of the survivorship period: A randomized clinical trial comparing the benefits of single-component and multiple-component group interventions. *Psycho-Oncology, 26*(8), 1147-1154. doi:10.1002/pon.4294

Merckaert, I., Libert, Y., Messin, S., Milani, M., Slachmuylder, J. L. (2009). Cancer patients' desire for psychological support: prevalence and implications for screening patients' psychological needs. *Psycho Oncology, 19*(2): 141– 149. doi: 10.1002/pon.1568

Mohabbat-Bahar, S., Maleki-Rizi, F., Akbari, M. E., & Moradi-Joo, M. (2015). Effectiveness of group training based on acceptance and commitment therapy on anxiety and depression of women with breast cancer. *Iranian journal of cancer prevention*, *8*(2), 71–76.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine, 6*(7), 1-6. https://dx.doi.org/10.1371/journal.pmed.1000097

Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., et al. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. Systematic Reviews, 4, 1–9. [verify]

National Health Service England (2015). The NHS Core Principles (NHS England). London, England: Author. Retrieved from

http://www.nhs.uk/NHSEngland/thenhs/about/Pages/nhscoreprinciples.aspx

National Institute for Health and Clinical Excellence (2011, January). *Generalised anxiety disorder and panic disorder (with or without agoraphobia) in adults*. London. Retrieved from http://www.nice.org.uk/guidance/CG113

National Institute for Health and Care Excellence. (2004). *Improving supportive and palliative care for adults with cancer.* CSG4. Retrieved from https://www.nice.org.uk/guidance/csg4

Newell, S. A, Sanson-Fisher, R. W., & Savolainen, N. J. (2002). Systematic review of psychological therapies for cancer patients: overview and recommendations for future research. *Journal of the National Cancer Institute, 94*(8), 558-584.

Nikbakhsh, N., Moudi, S., Abbasian, S., & Khafri, S. (2014). Prevalence of depression and anxiety among cancer patients. *Caspian Journal of Internal Medicine, 5*(3), 167–170.

Ng, F., Trauer, T., Dodd, S., Callaly, T., Campbell, S. & Berk, M. (2007). The validity of the 21-item version of the Depression Anxiety Stress Scales as a routine clinical outcome measure. *Acta Neuropsychiatrica, 1*9(5), 304-310. https://dx.doi.org/10.1111/j.1601-5215.2007.00217.x.

NHS England. (2019). *Long term plan implementation.* Retrieved from https://www.england.nhs.uk/cancer/strategy/

Osborn, R. L., Demoncada, A. C., Feuerstein, M. (2006). Psychosocial interventions for depression, anxiety, and quality of life in cancer survivors: meta-analyses. International Journal of Psychiatry Medicine, 36, 13–34.

Parahoo, K., McDonough, S., McCaughan, E., Noyes, J., Semple, C., Halstead, E.J., … & Dahm, P. (2015), Psychosocial interventions for men with prostate cancer: A Cochrane systematic review. BJU, 116, 174-183. https://dx.doi.org/10.1111/bju.12989

Pasquini, M., & Biondi, M. (2007). Depression in cancer patients: a critical review. *Clinical practice and epidemiology in mental health : CP & EMH*, *3*, 2. doi:10.1186/1745-0179-3-2

Qiu, et al (2013). A randomized controlled trual of group cognitive behavioural therapy for chinese breast cancer patients with major depression. Journal of Psychosomatic Obstetrics and Gynaecology, 34(2), 60-67. Doi:10.3109/0167482X.2013.766791

Ren, W., Qiu, H., Yang, Y., Zhu, X., Zhu, C., Mao, G., . . . Li, C. (2019). Randomized controlled trial of cognitive behavioural therapy for depressive and anxiety symptoms in chinese women with breast cancer. *Psychiatry Research, 271,* 52-59. doi:10.1016/j.psychres.2018.11.026

Roth, A. (1998). Rapid screening for psychologic distress in men with prostate carcinoma: a pilot study. *Cancer, 82,* 1904–1908.

Roth, A. J., Rosenfeld, B., Kornblith, A. B., Gibson, C., Scher, H. I., Curley-Smart, T., Holland, J. C., & Breitbart, W. (2003). The Memorial Anxiety Scale for Prostate Cancer. *Cancer, 97,* 2910-2918. https://dx.doi.org/10.1002/cncr.11386

Semple, C., Parahoo, K., Norman, A., McCaughan, E., Humphris, G., & Mills, M. (2013). Psychosocial interventions for patients with head and neck cancer. *Cochrane Database of Systematic Reviews, 7.* https://doi.org/10.1002/14651858.CD009441.

Siddons, H. M., Wootten, A. C., & Costello, A. J. (2013). A randomised, wait-list controlled trial: Evaluation of a cognitive-behavioural group intervention on psycho-sexual

adjustment for men with localised prostate cancer. *Psycho-Oncology, 22*(10), 2186-2192. doi:10.1002/pon.3273

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (Forme Y).* Consulting Psychologists Press: Palo Alto, CA.

Sterne, J. A. C., Savović, J., Page, M. J., Elbers, R. G., Blencowe, N. S., Boutron, I., … Higgins, J. P. T. (2019). RoB 2: A revised tool for assessing risk of bias in randomised trials. *The British Medical Journal, 366, 1-8.* https://dx.doi.org/10.1136/bmj.l4898

Sun, H., Huang, H., Ji, S., Chen, X., Xu, Y., Zhu, F., & Wu, J. (2019). The Efficacy of Cognitive Behavioral Therapy to Treat Depression and Anxiety and Improve Quality of Life Among Early-Stage Breast Cancer Patients. *Integrative cancer therapies, 18*, 1534735419829573. doi:10.1177/1534735419829573

Torre, L.A., Bray, F., Siegel, R. L., Ferlay, J., Lortet-Tieulent, J. & Jemal, A. (2015). Global cancer statistics 2012. *CA A Cancer Journal for Clinicians, 65*, 87-108. http://dx.doi.org/10.3322/caac.21262

Vartolomei, L., Shariati, S. F., & Vartolomei, M. D. (2018). Psychotherapeutic interventions targeting prostate cancer patients: A systematic review of the literature. European Urology Oncology, 1(4), 283 – 291. https://dx.doi.org/10.1016/j.euo.2018.04.011

Watson, M., White, C., Lynch, A., & Mohammed, K. (2017). Telephone-delivered individual cognitive behavioural therapy for cancer patients: An equivalence randomised trial. Psycho-Oncology, 26, 301-308.

Weinberger, M. I., Bruce, M. L., Roth, A. J., Breitbart, W., & Nelson, C. J. (2011). Depression and barriers to mental health care in older cancer patients. *International journal of geriatric psychiatry*, *26*(1), 21–26. https://doi.org/10.1002/gps.2497

Weston, L., Hodgekins, J., & Langdon, P. E. (2016). *Effectiveness of cognitive behavioural*

therapy with people who have autistic spectrum disorders: A systematic review and meta-analysis. doi:https://doi.org/10.1016/j.cpr.2016.08.001

World Cancer Research Fund International. (2018, n.d.). *Worldwide data.* Retrieved from http://www.wcrf.org/int/cancer-facts-figures/worldwide-data

World Health Organization. (2019). *Cancer: Early diagnosis*. Retrieved from https://www.who.int/cancer/prevention/diagnosis-screening/en/

Yalom, I. D. (1995). *The theory and practice of group psychotherapy*. New York: Basic Books.

Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health, 15*, 215-228.

Ye, M., Du, K., Zhou, J., Shou, M., Hu, B… & Liu, Z. (2018). A meta-analysis of the efficacy of cognitive behavior therapy on quality of life and psychological health of breast cancer survivors and patients. Psycho-Oncology, 27(7), 1695-1703. https://dx.doi.org/10.1002/pon.4687. Epub 2018 Mar 26.

Zhang, Y., Liu, R., Li, G., Mao, S., & Yuan, Y. (2015). The reliability and validity of a Chinese-version Short Health Anxiety Inventory: an investigation of university students. *Neuropsychiatric disease and treatment*, *11*, 1739–1747. doi:10.2147/NDT.S83501

Zheng, Y.P., Zhao, J.P., Phillips, M., Liu, J.B., Cai, M.F., Sun, S.Q., (1988). Validity and reliability of the Chinese Hamilton Depression Rating Scale. *British Journal of Psychiatry,152,* 660–664.

Zung, W. W. K. (1971). A rating instrument for anxiety disorders. Psychosomatics,12, 371–379.

SECTION B:

Sonia Lopes BSc, MSc

Title: Exploring cancer survivors' experiences of receiving group Cognitive Behavioural Therapy for anxiety

Word count: 7,922 (1570)

For potential submission to the Integrative Cancer Therapies Journal

SALOMONS INSTITUTE FOR APPLIED PSYCHOLOGY

CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Background:

Despite cancer survivors (CS) living longer, cancer diagnosis impacts significantly on their anxiety and quality of life (QoL). Although studies investigating the effectiveness of group CBT in CS have increased, there remains a paucity of data exploring CS experiences.

Methods:

Qualitative grounded theory methodology (GTM) was applied to investigate CS' experiences of receiving group CBT for anxiety.

Results:

Thirteen CS with different cancer types, aged 29-75, took part in an interview. A framework was developed of CS group experiences for anxiety as well as mechanisms of change. Findings indicated that group CBT seemed to have helped improving anxiety. Some of the mechanisms of change were normalising their feelings, sense of belonging, greater support, understanding and learning new ways of dealing with anxiety, cancer acceptance and greater hope about the future. Negative experiences included a focus on negative narratives that could lead to dropout.

Conclusion:

Group CBT intervention seemed to be acceptable for CS. A range of experiences was reported but the positives outweighed the negatives. Despite a small sample size and a lack of ethnic diversity within participants, clinicians may benefit from using these interventions with CS. Future research is needed to confirm current findings.

Keywords
group CBT, anxiety, adults, cancer survivors, experiences

Introduction

Quality of life issues in cancer survivors

Cancer survivors (CS) refer to all people diagnosed with cancer and it includes those who have not yet started treatment, are undergoing treatment or that have completed treatment (World Cancer Research Fund, 2018) (WCRF). It was predicted that there might be around 24 million more people diagnosed with cancer by 2035 (WCRF, 2018). Cancer survival is also increasing (Torre et al., 2015) with CS often experiencing a high prevalence of mood disorders. This impacts negatively on other quality of life (QoL) factors such as sleep or pain (Nikbakhsh, Moudi, Abbasian & Khafri, 2014).

Coping with cancer-related distress

Many CS experience significant cancer-related distress during their cancer journey (Albrecht & Rosenzweig, 2012). Studies investigating effective coping styles have identified that greater self-efficacy and higher social support experienced were key coping factors for distress in CS. CS presenting with these coping styles also experienced less stress and better overall QoL (Haugland, Wahl, Hofoss & Devon, 2016).

Literature findings conducted with the general population discovered that the desire to belong to the society is a basic human need and a sense of belonging to a group increases survival (Maslow, 1954; Barrett, Dunbar & Lycett, 2002). This possibly explains why CS with strong social support achieved better outcomes as reported in Haugland et al. (2016) study. Thus, intervening to increase social support might help improve emotional wellbeing and reduce distress in CS.

In an attempt to gain a greater understanding of social interaction, social comparison theory developed by Festinger (1954) suggests that individuals tend to determine their social and personal worth by comparing themselves against others. Festinger (1954) added that people tend to prefer to make comparisons with those who are similar in a certain domain.

Bellizzi and collaborators (2006) found that CS often compare themselves against others. However, little is known regarding the positive and negative impact of these social

comparisons in CS. Therefore, a group intervention could be a good way of observing and exploring these factors. Moreover, previous literature (Albrecht et al., 2012) found links between greater social support and improved emotional wellbeing. Thus, group interventions could offer CS social support whilst also allowing comparisons to be made with those in similar situations to themselves; consequently, improving their emotional wellbeing.

Benefits of group interventions for people with anxiety

Yalom (1995) conducted extensive research into therapeutic group factors and identified 11 primary therapeutic group factors. A number of these factors were identified in an online peer-support group such as group cohesiveness, catharsis, imparting of information and universality (Diefenbeck, Klemm & Hayes, 2014). Another study conducted by Behenck and collaborators (2016) identified a number of relevant Yalom's (1995) therapeutic factors for those who improved in symptomatology after attending group CBT for obsessive-compulsive disorder. The factors included interpersonal learning-input and output, self-understanding, self-altruism, enactment, existential factors and guidance, and universality. Similarly, another study conducted by Choi and Park (2006) identified some group therapeutic factors that positively impacted on outcomes in patients attending group CBT for social anxiety such as interpersonal learning-output, guidance, group cohesiveness and universality.

However, group processes and dynamics are complex and include personal motivation, cognitive, social, intergroup and intragroup processes resulting from the interaction between group members (Hogg, 1996). Hence, despite the existing literature confirming the efficacy of group therapy, little is known regarding the most significant therapeutic processes that lead to its success (Vogel, Blanck, Bents & Mander, 2016).

Group interventions for CS

Previous literature indicates group therapy increases breast CS social support and reduces anxiety (Liu et al., 2008). Thus, offering group therapy seems beneficial for CS.

Amidst trying to understand what are the most beneficial types of support for CS, a review compared types of support. It showed that participants attending psychoeducational

groups experienced significantly greater benefits when compared with those attending peer-led support groups (Edelman, Craig & Kidman, 2000). Consequently, evidence on psychological support groups for CS has grown significantly over the years (Edelman, Bell & Kidman, 1999). Henceforth, a review conducted by Faller and colleagues (2013) identified a number of psycho-oncology randomised-controlled trials suggesting that some individual and group interventions had an effect in reducing emotional distress and improving QoL. Despite these encouraging results, these interventions seem to be more effective for patients significantly psychosocially distressed at the start of the group program (Carmack-Taylor et al., 2007), therefore generalisations of findings may be limited.

Regarding therapeutic group factors, a recent study conducted with breast cancer patients looked at group processes including group climate, working alliance and therapeutic realizations as well as their impact in treatment outcomes (Manne, Kashy, Siegel & Heckman, 2016). However, the study showed that there is still limited evidence regarding CS experiences and inconsistent findings regarding mechanisms of change including therapeutic group processes in CS (Manne et al., 2016).

Group CBT interventions for CS

Given the high prevalence of mood disorders in CS and previous findings showing the efficacy of CBT in reducing mood problems in the general population, research within CBT and CS has burgeoned. CBT is an evidence-based intervention recommended by the National Institute for Health and Clinical Excellence (NICE, 2011) for treating mood disorders. Due to its efficacy, a number of group CBT studies for CS were conducted and some have shown its benefits in reducing distress in cancer populations (Edelman et al., 1999).

Notwithstanding, these studies tended to focus on its efficacy in symptom reduction including on distress levels, fatigue or sleep quality (Cohen & Fried, 2007) or describing content of the interventions (Edelman & Kidman, 1999). Regarding condition-specific group CBT factors, some studies identified some of the factors and techniques that seemed to impact

positively in outcomes such as cognitive restructuring and automatic thoughts for clients with social anxiety (Hope, Burns, Hayes, Herbert & Warner, 2010).

Rationale and aims

Although Hope et al. (2010) showed that group CBT for anxiety in patients with social anxiety resulted in improvements in quality of life symptoms, CBT techniques used to change patients' cognitions did not seem to explain these improvements. Thus, it is still unclear what were the mechanisms of change or key ingredients involved in QoL improvements (Oei, McAlinden & Cruwys, 2014).

Moreover, although there has been a growing number of CS and group CBT interventions offered to CS, most studies conducted were RCT's. There is paucity of qualitative studies looking at CS experiences of attending group CBT. The current study is a qualitative research project that aims to address this by gaining a deeper understanding of CS experiences and identifying the mechanisms of change at play when CS attend group CBT for anxiety.

A study conducted by Balabanovic and collaborators (2012) investigated breast CS experiences of receiving group CBT for hot flushes and night sweats to gain a better understanding of mechanisms of change. Most participants in this study reported positive experiences of group CBT particularly in relation to acceptance and reduction of symptoms of hot flushes and night sweats. This was a qualitative study following a RCT, and it differs from the proposed project as this was a study conducted with female only participants. Moreover, participants had only one cancer diagnosis and the aim of the CBT group was focused on hot flushes and night sweats. The proposed study in this report aims to include a sample of people with mixed gender; including various cancer types and the group CBT aims to address anxiety.

In summary, although there are theories that seemed to have attempted to understand some of the change processes, for example, Yalom's (1995) group processes or looking directly at CBT techniques, there are limited studies looking at other mechanisms of change in group CBT for CS. Previous studies do not seem to be consistent with each other and each theory

seemed to have a specific focus on what they aim to understand. Thus, they do not fully acknowledge other factors that might have contributed for positive or negative change, thus existing theory seems to be insufficient to explain the phenomena.

This study is in line with the NHS values (NHS England, 2015) as it includes people from all backgrounds and it meets the commitment to quality of care, as the central aim of the study is to learn from service users' feedback.

Considering significant literature gaps, the main aim of this research project is to develop a framework for understanding experiences and key factors or mechanisms of change impacting on those experiences from the perspective of cancer patients who received group CBT. Therefore, this project aims to answer the following research questions:

What experiences do a sample of CS report after attending group CBT for anxiety?

What appears to be the mechanism of change when CS participate in group CBT?

Methods

Ethical considerations

Ethical approval was obtained from the Health Resource Authority (HRA) and from the NHS Research Ethics Service (REC) and by two other local Trust research services (please see Appendices D-G). Main ethical considerations included how consent was obtained, confidentiality, data protection, and the possibility of participation causing emotional distress. The procedure section explains how these were addressed.

Design

Due to the limited knowledge regarding CS' experiences of receiving group CBT, qualitative research seemed to be the most appropriate design and grounded theory methodology (GTM) (Strauss & Corbin, 1998) was applied in order to generate a theory regarding data collected. Epistemologically, a critical realist approach was used therefore it did not aim to hinder an objective "truth" of the role of group CBT, but instead it assumed that

there is an element of subjectivity because a number of factors can influence data such as researcher biases and assumptions (Strauss & Corbin, 1990).

Participants

Participants who met the inclusion criteria (Table 1) and who were alive were approached and recruited from one oncology hospital in Trust A.

Thirteen participants took part in this study of which 10 opted for a telephone interview. Length of interviews ranged between 46 and 65 minutes, mean 52 minutes. To ensure confidentiality, a brief summary of participants' demographics was shown in Table 2. Three CS declined to participate due to feeling unwell or having memory difficulties following brain surgery.

Table 1. Inclusion and exclusion criteria

Inclusion	**Exclusion**
Be over the age of 18 years English speakers Diagnosed at some point in adulthood with cancer Attended, within the last three years, group CBT for anxiety during or after cancer treatment	If did not meet all inclusion criteria Still attending group CBT during recruitment period Physically unwell to take part

Table 2. Brief summary of demographics

Age range	**Gender**	**Ethnicity**	**Religion**	**Occupation**	**Cancer diagnosis**	**Date attended group CBT**
29-75	7 female 6 male	All White	4 Christian 8 No beliefs 1 Other	5 Working full-time 2 Working part-time 5 Not working (illness) 1 Retired	2 Breast 2 Tongue 2 Throat 1 Brain 1 Lung 1 Prostate 2 Soft rare tissue 2 Non Hodgkin's Lymphoma	3 Feb-April 2016 1 Feb-April 2017 4 Oct-Dec 2017 2 Feb-April 2018 3 Oct-Dec 2018

There are inconsistent views regarding the quantity of participants required in qualitative research, however, some suggest that qualitative studies should include at least 6-10 interviews (Morse, 1994). Therefore, the researcher aimed to recruit until data saturation or when 15 interviews had been completed. Due to recruitment difficulties, only 13 participants were recruited which might be low, however later interviews were not yielding any significant new data, thus it is hoped that data collected was enough for the development of a theory (Mason, 2010).

Procedure

A brief socio-demographical questionnaire and an interview topic guide using open questions were developed by the researcher and piloted with a CS on the 12th May 2017 prior to recruitment to increase its face validity. Questions on the topic guide were subsequently amended taking into consideration the CS feedback.

The researcher had initially contacted five hospitals, however, only one hospital reported having offered group CBT for anxiety for CS. Therefore, all participants were recruited solely from one hospital.

Eligible participants were initially approached by the clinical psychologist who conducted the CBT group. Participants received an invitation letter, a patient information sheet and a consent form (see Appendices H-J). All patients who expressed an interest in participating were contacted by telephone to check their eligibility.

Eligibility criteria included group CBT interventions conducted in the last three years prior to the research interview. The participants interviewed attended group interventions conducted in 2016, 2017 and 2018 (see Table 2). Therefore, the data from this research project included information regarding CS experiences from a total of five CBT groups, representing both recent group experiences and groups conducted two or three years prior to the research interview.

Interviews were held in a private room in the hospital or by telephone, depending on participants' preference. Semi-structured interviews were conducted using an interview topic guide (Appendix I).

It had been previously discussed with supervisors that some questions might cause emotional distress due to bringing some difficult memories such as experiences of cancer diagnosis. Therefore, all participants were treated with respect, dignity and with compassion particularly if distressed in accordance with NHS values (NHS England, 2015). They were also informed that they could withdraw from study participation at any time. As CS can be quite vulnerable participants, if their distress was significant, they could discuss concerns with the researcher, or project lead supervisor, or GP, or the group CBT facilitator. Despite some participants becoming distressed with certain questions, none of them required further support.

All written and digital data, was kept confidential, anonymous and stored on password protected computers. The interviews were audio-recorded and stored securely on an encrypted USB and followed the rules specified by the Canterbury Christ Church University. Participants received up to £10 for travel expenses. A confidentiality agreement (Appendix K) was signed by the company that assisted with data transcription and transcripts were checked for accuracy.

When possible, grounded theory procedure of interviewing was followed and further interview questions were added as new themes emerged from the data (Appendix J). For example, one participant mentioned issues around disclosing diagnosis to relatives, therefore, a question about disclosure was added to subsequent interviews.

Data analysis

Due to limited research in this area, the Strauss & Corbin (1998) and Urquhart's (2013) approach to grounded theory appeared appropriate for data analysis because it would produce a new theory regarding the data that was gathered (Urquhart, 2013; Strauss & Corbin, 1990). According to Urquhart (2013), GTM involves an effort to try to put theories aside in order to allow a new theory to emerge, to gain a broader understanding of mechanisms of change in

group CBT for CS. New theory in this study resulted from interviews conducted, providing an understanding and relationship between a range of concepts. The researcher attempted to put theories aside and be open minded in how the theory was developed, being significantly guided by what participants shared from their own experience.

Data analysis involved following a number of steps of GTM including a systematic data collection and analysis, memo writing, coding and categorising, constant comparison, and selective coding (Urquhart, 2013; Charmaz, 2006). Open coding was applied using a line-by-line approach that led to the identification of categories. Then axial coding elevated and combined categories and, was used to make theoretical links between codes. Constant comparison was conducted between data findings and memos were used to reflect on data and discover links between categories and subcategories. Selective coding sought to identify core categories that developed into the theory.

Despite efforts to contact a number of psycho-oncologists and several charities to discover whether they knew other oncology sites or hospitals that might deliver group CBT interventions for anxiety, only one site was identified. Moreover, because the researcher had access to few participants, it was not possible to select participants based on how likely they are to develop the theory. For these reasons, it was not possible to conduct theoretical sampling because the researcher had no control regarding the selection of the types of participants due to limited sites available that led to a limited number of participants available to interview. Despite this and partially to overcome this issue, the researcher was able to change, adapt and select interview questions; and new questions were added to the interview schedule in subsequent interviews.

Regarding reflexivity, some potential biases of the analysis were identified such as the researcher familiarity with the area due to having worked in a psycho-oncology service and awareness of previous literature findings. Therefore, sharing reflections with supervisors and completing a research journal (Appendix L) helped minimising biases.

The Critical Appraisal Skills Programme (CASP) (Zeng et al., 2015) Qualitative Checklist and the Yardley's Evaluative Criteria (Yardley, 2000) were used to guide the project design and face validity of coding process was checked with supervisors.

Results

A grounded theory describing CS' experiences of receiving group CBT for anxiety is presented.

Table 3. Core Categories and Subcategories

Category	**Subcategory**
Journey to accessing group CBT	Initial contact with the group Hopes about group CBT that led to engagement
Power of hearing other CS stories	*Feeling normal* by hearing other people's stories Learning from comparison with other CS The impact of negative narratives
Connection with other CS	Worries about *speaking in the group* Preference of *talking to others who really understand* Mutual support and a sense of *belonging* in the group
Gaining an understanding of anxiety	Limited prior understanding on *how anxiety works* Making sense of anxiety experiences
Coping mechanisms that can be put in place	New ways of *dealing with anxiety* Practical exercises during sessions and *homework* Challenges to ongoing use of techniques
Accepting that I had cancer and I can deal with it	Challenges to cancer diagnosis acceptance Moving towards cancer acceptance
Looking differently at the future	Developing hope about the future New things CS might be anxious about

Initial analysis identified hundreds of open codes. See Appendix N for an example coded transcript. Codes were refined to produce seven core categories and seventeen subcategories displayed in Table 3. These contributed to the development of a theory describing cancer patients' experiences of receiving group CBT.

This section describes each category and subcategory with anonymised supporting quotes from participants to illustrate how this data emerged from open codes (see Appendix M). Quotes were selected to reflect a range of CS views and at least one quote per participant is provided. Links between categories and subcategories are described and the theory developed is explained.

Category: Journey to accessing group CBT

This category describes how participants came to be in group CBT. This provided some context for the experiences within the group and has three subcategories.

Subcategory: Initial contact with the group

The most common factor resulting in participants initial contact with group CBT was presenting with significant psychological distress which was impacting on their functioning. Eligibility for group CBT was the presence of anxiety, which all participants reported difficulties with, however, this was often accompanied by other symptoms such as panic, fear of dying or fear of cancer recurrence.

> *"It was really all around anxiety and it impacting on my life… I've possibly had anxiety a long time but it's never been that much of a problem. But I think since I've had cancer… my anxieties are more around." Eric*
>
> *"Anxiety... Fear of dying really, which is linked to the cancer." Alice*

Some CS were recommended to attend group CBT, usually by a health professional such as a psychologist, nurse or consultant. However, some had actively requested support and self-referred to the group.

"I think I saw it... I'm quite proactive so… I tend to look for support groups to help me through it. And this was one of those." Kylie

"I just didn't want to go into a dark place, so I knew I needed some kind of help." Elsa

Subcategory: Hopes about group CBT that led to engagement

Participants had a number of expectations of group CBT and were willing to try anything that might help them to manage psychological distress. They hoped to hear other CS experiences, and learn new information, strategies and perspectives around coping with anxiety and fear of cancer recurrence.

"I wanted to try anything to help with my anxiety and I thought hearing other people's stories might help, like hearing people that could empathise with what I had been through." Emma

"Because I have read up about CBT and group therapies and… I was hoping to get those strategies to manage my anxiety." Eric

Category: Power of hearing other CS stories

This category explains the power of hearing other CS stories and what changed as a result. This category consists of three subcategories.

Subcategory: 'Feeling normal' by hearing other people's stories

There was an absence of contact with other CS prior to group CBT attendance. Participants explained that others do not seem to understand their experiences and that it was difficult to explain to others what they had been through. Some participants felt alone and uncertain about whether their reactions to diagnosis, treatments and outcomes were "normal".

'*…you can tell people you've had cancer and you've had cancer treatment but they don't understand what that means*.' Oliver

Group CBT provided direct contact with other CS and the opportunity to hear stories that normalised their feelings and experiences of cancer and anxiety. For example, hearing that other

CS had been through similar experiences was seen as validating of their feelings and treatment reactions.

> *"It was quite nice to know that other people felt the same as I did and that my symptoms were normal." Lisa*

> *"I really was more interested in hearing what other people were going through… other people's reactions to cancer... not just mental health but cancer as well… And I found out that the fears were shared and it was normal, in a way." Kylie*

Subcategory: Learning from comparison with other CS

Group CBT participants varied in their type of cancer, gender and age, enabling CS to learn from a wide range of experiences and perspectives. This helped some to broaden their own views on cancer; for others it helped to learn new tips on how to cope with cancer related anxiety.

> *"I like to mix with diverse people so, for me, that worked, because it was a different perspective." Kylie*

> *"… it was nice to have some tips on anxiety and then you heard people's stories and people were able to share how they cope with different aspects."* Elsa

Also, hearing stories of others undergoing unsuccessful treatments or having worse outcomes helped some participants to put their experiences into perspective and feel more positive about their own experiences.

> *"…I felt really lucky because I saw other situations where they really are struggling worse than I do… it was an eye-opener in that I'm strong, and I can do better than other people actually cannot manage, for different reasons; for age related things, for the gravity of their cancer compared to mine."* Beth

> *"When you listen to some of the hardships that other people had experienced it put yours into perspective." Rob*

Subcategory: The impact of negative narratives

There were many positives of hearing other CS stories, however, for some they also had a negative impact. Some CS felt some participants were constantly moaning and that their negativity led them to feel down. Others described experiencing it as distressing or difficult to observe other people getting upset in the group.

> *"… there was a lot of people in the group and they just seemed to moan. There were never any positives, always a negative. So if you go in there positive, you could easily walk out very depressed.*" Harry

> *"… watching people getting upset, where they are getting very emotional and breaking down. I didn't like that because you feel sorry for people then."* Harry

Hearing people talking about cancer recurrence or death caused greater anxiety for some. This was especially strong for one participant who experienced a panic attack as a result and left the group and did not return.

> *"I felt probably slightly more anxious because I have met real world people that the cancer had come back, so that was a bit of a negative. But also it's positive because you can see that they are still going through treatment and you still have help."* Oliver

> "*Well, in the end I left because I found a lot of people were talking about death and the cancer coming back which I had never ever thought of… it just made my anxiety worse… I started having a panic attack, so I left the group*." Emma

Category: Connection with other CS

This category explains how the interaction between group members resulted in a greater connection with other CS. Some of the challenges to group participation as well as some of the advantages of group interaction are described through three subcategories.

Subcategory: Worries about speaking in the group

A number of CS considered it anxiety provoking to be in a group and to talk in the group. Reasons for this included a lack of confidence talking in groups, fear of rejection, being judged, laughed at, or over sharing, or simply having a preference for individual interaction.

> *"I am not so keen on being in a group… I think I would have been much better if I had had a one-to-one."* Lisa

> *"At first it was quite nerve-racking because of my anxiety and I thought that I might be judged or laughed at… but as I got into the group… that subsided a bit." Elsa*

Despite the challenges of talking in groups, some CS considered the positives of attending group therapy to outweigh the negatives because of the improved symptoms and quality of life.

> *"I think all the negative aspects were that it did create an anxiety going there. So in a sense, the positives outweighed the negatives, in that I've got better quality of life now." Eric*

CS reported that feeling safe to talk, being understood and listened to were contributing factors that enabled their active participation in the group.

> *"You do feel safe there and you can say whatever you want and you are listened to, so it is good.*" Oliver

> *"It was a positive experience, because you feel like you can talk with somebody who can understand what you feel inside, and it's like sharing, companion, and caring.*" Beth

Subcategory: Preference of 'talking to others who really understand'

CS expressed how valuable it was talking to others about their experience of cancer. They felt that it was cathartic to talk to people who understood their difficulties first hand. Some CS did not feel able to share their experiences with family or friends because they felt they would

not understand. Some felt that a good way of getting support was by sharing with other CS as they would implicitly understand their experiences.

> *"I think sharing your experiences is quite cathartic." Jack*
>
> *"… shared experiences with other cancer survivors. So it was very useful to share with others... because I'd made the decision not to involve anybody at all." Kylie*

Subcategory: Mutual support and a sense of 'belonging' in the group

Mutual support was obtained from the interaction between group members. Some CS felt an increased sense of connection and belonging to the group, being able to express how they were feeling with other CS. This was possible due to the great sense of respect between group members. Some found it rewarding to be able to help other group members, which in turn led to participants providing support to each other.

> *"Knowing that I had support and I was able to express things… The people were very pleasant and we all had something in common. It was a bit of a support system, we respected each other and we were free to just speak about what was troubling us."* Elsa
>
> *"Listening to other people's experiences and being able to sometimes help, offer them support... I think most of us want to help other people so it gives us a feeling of ownership, of belonging, I suppose." Eric*

Category: *Gaining an understanding of anxiety*

This category explains how attending group CBT helped CS move from a position of limited knowledge of anxiety to gaining an understanding of anxiety and how it works. This has two subcategories.

Subcategory: Limited prior understanding on 'how anxiety works'

CS experienced a variety of cancer related anxieties such as cancer recurrence, survival and death, as well as what impact it may have on their loved ones and on their career. Despite

this, prior to group CBT attendance, CS reported having limited knowledge and understanding of anxiety and how to cope with it.

> *"Around cancer, it started as soon as I was referred. I knew it was really serious. So obviously the first anxiety was will I survive.*" Kylie

> *"My anxiety. I can always remember what the woman on the desk said. She said, 'Do you know what anxiety is?' I said no. I didn't know what it was because it is a lot of things."* Jacob

Subcategory: Making sense of anxiety experiences

Group CBT enabled CS to make sense of their experiences of anxiety by learning new information, connecting with new ideas that led to a greater understanding of anxiety and how it works.

> *"I think the educational side of it… anxiety is a natural response and… we've evolved to have this anxiety from fight or flight, it's a chemical response in your body as well, an actual physiological response. It was so hard for me to relate it to me, and that educational side of the group was really helpful for me to understand and then once I got over that… actually, right, okay, I understand that now." Eric*

It helped that the group facilitators seemed to have empathy for the CS and used simple language to explain psychological concepts and connecting ideas.

> *"I think she [facilitator] had empathy, she understood… and I think she was pretty good at relating to us about that… She asked questions, she'd tie things together. I thought she was very good." Jack*

> *"…wasn't talking about strange psychological concepts; it was clear and understandable. I found it generally… it was pretty logical." Jack*

Learning about the links between thoughts, anxious feelings and behaviours and that this becomes a vicious cycle, as well as knowing these feelings were shared between CS, helped

them understand anxiety and connect with new ideas, such as the importance of detecting early signs.

> *"…and being able to recognise when I am anxious because sometimes you don't know you are anxious until it's too late… The early signs, what leads into that spiral of habits and thoughts. I was able to start pinpointing things that made me anxious and this cycle that it sets up, having negative thoughts that feed into your anxiety and your mind starts to think negatively and it sort of spirals down into this feeling of no hope that you can't get out of. So that really helped." Eric*

Category: *Coping mechanisms that can be put in place*

This category has three subcategories including information about new coping mechanisms and CBT techniques learned via group CBT.

Subcategory: New ways of dealing with anxiety

Participants seemed to have benefited from learning new ways of dealing with anxiety. In addition to the previously reported subcategory *learning from comparison with other CS*, participants spoke about benefiting from learning specific CBT techniques taught in the group. Interestingly, different participants appeared to find different techniques helpful. For example, for some, the mindfulness and relaxation techniques such as diaphragmatic breathing were described as particularly helpful; in that the deep breathing helped to reduce anxiety.

> *"I guess all the techniques were helpful." Lisa*
>
> *"I thought the mindfulness part of it was helpful… the positiveness and deep breathing when you are a bit anxious, diaphragmatic breathing." Eric*

Other participants highlighted that the thought challenging was relevant as it would allow them to replace negative thoughts with positive thoughts. Other CBT techniques mentioned that helped to reduce anxiety included identifying triggers, visualisation techniques, trying to focus on the positives, and problem solving techniques.

> *"Well it's just like challenging how you are thinking, that you've got negative thoughts and trying to replace them with different kinds of thoughts, speaking in a different way."* Elsa

Overall, participants talked positively about the CBT techniques despite different techniques being helpful for different people.

Subcategory: Practical exercises during sessions and 'homework'

Practicing some of the techniques learned during group sessions, such as mindfulness, was useful as they learned how to do this. Furthermore, CS were asked to complete in between sessions 'homework', for instance, to complete a journal or practice relaxation.

> *"Different techniques that were being shown, they were really helpful, like massage your hands and stuff like that."* Beth

> *"There were some little worksheets…They are just like homework! I remember the back of the bus exercise where you put your negative thoughts to the back of the bus. That was quite impactful."* Alice

Subcategory: Challenges to ongoing use of techniques

For many CS there were some challenges of continuing to apply these techniques when the group CBT finished. For some people, the challenge was the context that might prevent their ability to put the techniques into practice. For others, the ability to continue to use strategies was significantly impacted by their mood or changes in circumstances, such as cancer recurrence. Other participants also mentioned that whilst learning a range of techniques was helpful, they chose to only use a few based on their own preference as different things work for different people.

> *"… it all depends on how you feel at the moment you want to apply those techniques. It's not always possible or useful, but they were useful at that point [during group sessions], and I think they are useful for anybody else to take away as an experience."* Beth

> *"That was quite impactful [techniques] although … I just hung onto the things that worked for me and thought I only need one or two things. I don't need the whole smorgasbord of choices, but you have got to offer them because different things work for different people."* Alice

Although some CS stopped using techniques post group intervention, others mentioned that they continued to use some of the coping strategies after the group. Some of the coping strategies that participants continued to use were: mindfulness, relaxation techniques, goal setting, focusing on the positives, identifying and breaking anxiety patterns. CS who continued to use one or two of these strategies post intervention considered this helpful in managing anxiety.

> "*I thought the mindfulness part of it was helpful which I continue with now*." Eric

Category: *Accepting that I had cancer and I can deal with it*

This category concerns the process of CS accepting their cancer diagnosis and cancer experiences, as well as some of the challenges towards this acceptance. This had two subcategories.

Subcategory: Challenges to cancer diagnosis acceptance

The process of accepting a cancer diagnosis seemed to be different for different people. For some, the acceptance process started prior to attending group CBT, whereas for others, it seemed that they were still in their journey to cancer acceptance during group CBT.

CS identified some of the challenges that prevented them moving towards accepting their diagnosis prior to attending group CBT. These included experiencing a wide range of emotional distress before and after their confirmed diagnosis, such as feeling worried, scared, awful, confused, devastated, horrible, and terrified. Some CS described it being a traumatic experience. For instance, for some CS the absence of symptoms prior to a cancer diagnosis led them to be in

complete emotional shock when their diagnosis was confirmed which might have prevented them accepting it.

> *"It was absolutely terrifying. I was really terrified, really afraid and shocked. I didn't believe... It was certainly a trauma." Kylie*
>
> *"It was a shock at first, because I didn't have any symptoms whatsoever." Beth*
>
> *"I never was ill at any point throughout, so that was where the shock was."* Harry

Other barriers to cancer acceptance were the presence of certain cancer beliefs, such as not believing it has happened to them and being in denial regarding their symptoms. Understandably, it was hard to talk about life and death with being in denial as a strong defence mechanism. This was linked to the *impact of negative narratives* subcategory mentioned above as for some CS who might still be in this journey for cancer acceptance, hearing others talking about their cancer experiences was so distressing that they disengaged with the group.

> *"It's not that you don't want to believe, you can't believe it because it's like, 'It doesn't happen to me,' it may happen to other people but it doesn't happen to you. Because you're okay, you don't have anything, but at the end of the day, it can happen to anybody." Beth*
>
> *"I knew something was going wrong… I didn't get diagnosed for some time, I just put it off and put it off until my wife passed away and then I was diagnosed with advanced prostate cancer."* Rob

Some CS mentioned how being diagnosed with advanced cancer made it harder to accept and come to terms with, because it implicitly meant they had a good chance of dying.

> *"…it's more the psychological issue of it which is thinking that you've got a decent chance of dying is something I hadn't come to terms with before and that was the worst bit…and just be thinking about whether the treatment would be successful or not. It was a horrible six months and just worrying and worrying about whether I was going to die or not." Jack*

For some CS, having negative treatment experiences significantly contributed to high levels of anxiety, including worries about cancer recurrence and dying, which in turn hindered cancer acceptance.

> *"So from radiotherapy I was obviously constantly being sick…obviously a lot more dizzy. And with the brain surgeries, I'm now left disabled on the left-hand side because the tumour was on my cerebellum which controls a lot of your movement and the signals that are sent around the body… I think the worst pain I had…so that was horrific, that was very painful…So I suffer with severe anxiety now." Emma*

Subcategory: Moving towards cancer acceptance

Participants explained how attending group CBT helped them to move towards accepting and understanding their cancer diagnosis, treatment and outcomes. For instance, receiving cancer-specific information directly from the facilitators of group CBT and other CS, helped CS to gain a greater awareness of how to live more positively with cancer.

> *"The experience just was accepting that I had had cancer." Harry*

> *"So I just found it very helpful in terms of dealing with that diagnosis and shared experiences with other cancer survivors…What I took away from the group was the cancer-specific information. So by cancer-specific information, I mean by that how to live with that diagnosis. So the really cancer-specific things. That's where it was very useful. To be more aware and to give ourselves a break. It's okay, it's happened." Kylie*

Regarding cancer treatment, attending group CBT helped CS to not only accept the treatments received, but also to accept that CS have a chronic condition with their cancer being in remission rather then cured.

> *"The experience just was accepting that I had had cancer and I'd had a major operation. I think that was the two main reasons."* Harry

"[learned] how to live with people saying you're in remission rather than you're cured." Kylie

Following group CBT attendance, some CS seemed to have changed their views regarding cancer outcomes and fears of dying. For example, some CS spoke about experiencing a shift in their views regarding cancer as a 'death sentence'. Hearing stories of people who completed treatment successfully helped to develop a more positive perspective and believe that some people can survive it. The group also helped CS to learn strategies to cope with the fear of cancer recurrence, such as adopting health behaviours.

"It made me accept that yes the big bad C word is not good, but it's not as bad. It's not always a death sentence. So I've come away thinking well, you know, because horrible as it might seem, I look at other people and think well I'm a lot more luckier than them because there were people in there a lot younger with a lot more serious probably outcomes than myself." Harry

"How to cope with the fear and the positivity that it might come back. And I'm, at the moment, more likely to get it than the general population because I'm within the five years. So it's living with that that it helped me with…it was very useful…it's okay, it's happened and I just need to do the very best that I can to ensure it doesn't happen again. That means looking after myself." Kylie

"They were talking about diets and things like that. I stopped smoking, I moderated things. They said about the food and things like that and I ate what I was supposed to eat." Jacob

Category: Looking differently at the future

This category explains how attending group CBT changed CS' views regarding the future. The potential benefits and challenges are captured in the two identified subcategories.

Subcategory: Developing hope about the future

Overall, participants appeared to benefit from group CBT and self-reported that their anxiety symptoms reduced following attendance or were perceived not to be as severe as before. Participants explained that the group had helped them understand, accept and deal with anxiety by using new coping strategies.

> *"I just wasn't in such a dark space, continually in a loop, feeding back into yourself with negative thoughts… there's no point in worrying about what you can't control." Rob*
>
> *"Well I still felt anxious but the edge was taken off… I was perceiving things that would happen when they don't actually happen, so that causes a lot of my anxiety and then I had like a phobia of being around a lot of people, so being in the group was the first step to opening up a bit." Elsa*
>
> *"I can't cure the anxiety or what makes me anxious, I've learnt to deal with it and I've learnt strategies to reduce it just to make my life better, less stressful." Eric*

Some of the highlighted benefits included experiencing greater hope about the future, being generally more positive, and having greater self-efficacy. For some, this was achieved by having positive statements on the fridge door to have a daily exposure and reminder; or by managing to take the bus alone to attend group CBT which led to a greater sense of independence that could be maintained in the future.

> "*I've written stuff on my kitchen door, is covered with…just a little reminder, that I walk past every day: 'Stay positive, look to the future, be mindful about what you can influence, don't get cross'. [Laughs]… But I walk past it every day and try and live by it*." Rob
>
> *"…it helped me kind of get my independence back a bit because I made sure I would travel alone now." Emma*

Some participants mentioned that talking with other CS and the CBT techniques helped not only coping with cancer-related trauma. CS also learned that they could seek help in the future if needed.

> *"So I think the group helped with that trauma… Because I think people get PTSD after diagnosis and treatment of such a serious life-threatening condition." Kylie*

> *"Well, before, I didn't go for any support, I felt like I was alone and stuff, but now I know that there's support out there if you ask for it, so I'm more open and willing to do so." Elsa*

Subcategory: New things CS might be anxious about

Some CS were left with new things to be worried about as a result of attending group CBT. CS who thought cancer recurrence was unlikely before attending group CBT, ended up starting to worry about this after hearing stories of cancer recurrence in some of the group participants.

> "*I guess I felt probably slightly more anxious because, I have met real world people that the cancer had come back, so that was a bit of a negative. But also, it's positive because you can see that they are still going through treatment and you still have help. So yes, it's a difficult balan*ce." Oliver

Hearing about others' cancer diagnoses and traumatic treatment experiences caused great anxiety and distress in some CS, such as learning about new possible ways of dying. For some people this impacted negatively on their future behaviour. For example, after hearing one participant express beliefs that they acquired throat cancer due to oral sex, another participant decided not to engage in oral sex after attending group CBT.

> *"Of course that then becomes overwhelming as you find out about all the other cancers that you could possibly get as well and all the other reasons or ways that you could die." Alice*

"…this woman said the reason why she got throat cancer was from oral sex, so of course now I can't have oral sex with my husband… because the fear of getting a cancer like hers is overwhelming." Alice

Selective codes and emergent theory

The theory developed (Figure 1) is informed by seven main categories and seventeen subcategories representing CS' experiences and mechanisms of change following participating in a group CBT for anxiety. In the model, categories are written in bold and underlined and subcategories are written in bullet points.

Firstly, the model illustrates the '**Journey to accessing group CBT'** which describes how participants came to be in group CBT as well as some of the CS hopes for group CBT which led to their engagement. For those CS who decided to engage in group CBT, there were a number of positive and negative experiences that described the **'Power of hearing other CS stories'**, such as feeling their experiences are normal and 'learning from comparison with other CS. However, this category is compromised by the power of 'negative narratives' that, for some CS, led to such levels of distress that they dropped out of the group.

Another identified benefit of attending group CBT was the '**Connection with other CS** developed through a 'mutual support and sense of belonging', particularly because several CS had a 'preference of *talking to others who really understand'*. However, there were also 'worries about *speaking in group*' and if they were not able to talk in the group they might not obtain that mutual support.

Most CS explained that they '***Gained a greater understanding of anxiety****'* and made sense of their anxiety experiences' through the material they learned from facilitators and other group members. This seemed to be impacted by their views and 'limited understanding on *how anxiety works*' prior to group attendance.

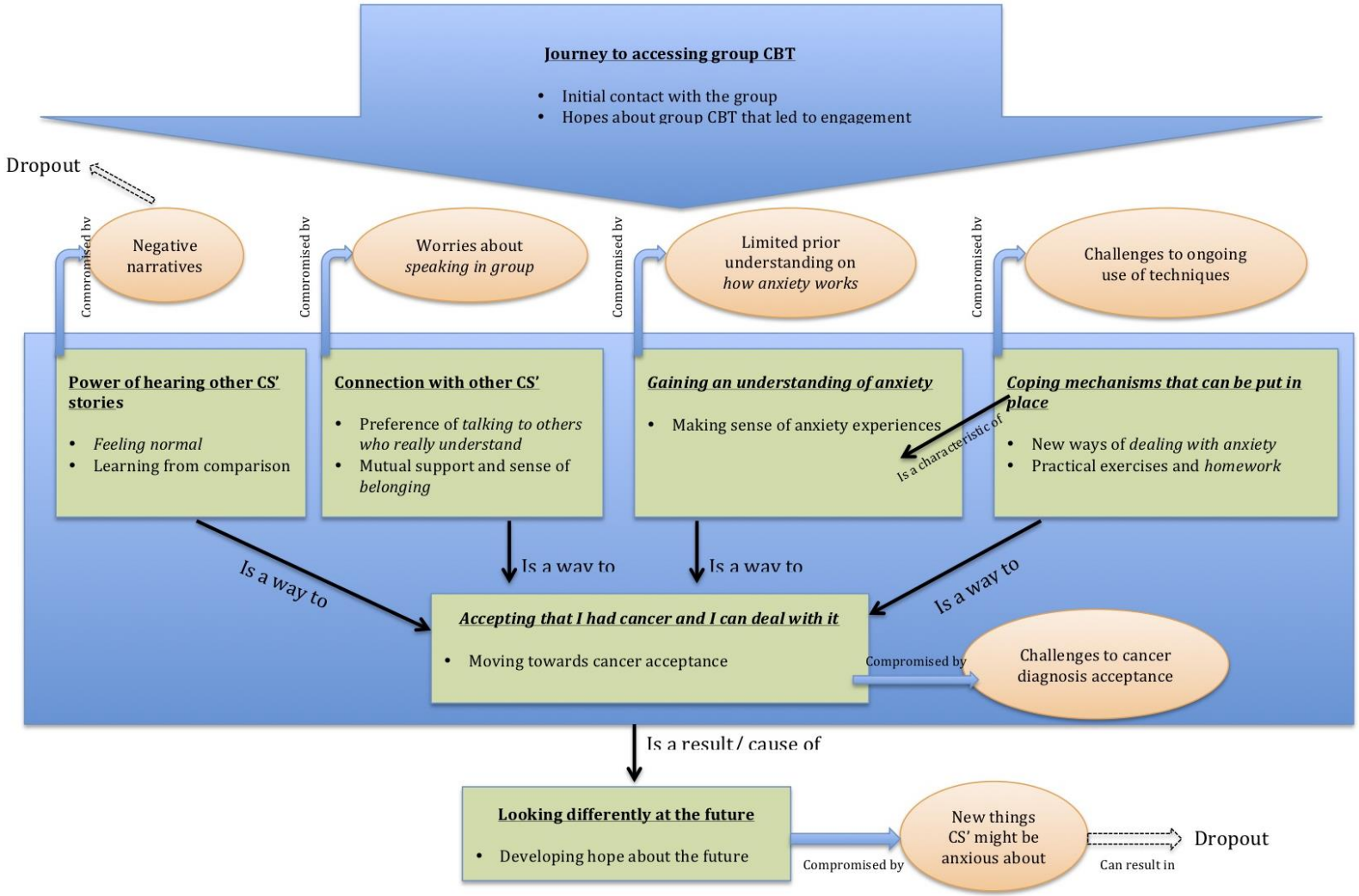
Other perceived benefits resulting from group attendance was learning a number of '***Coping mechanisms that can be put in place****'*. This was a characteristic of the category

'gaining a greater understanding of anxiety'. CS explained that learning 'new ways of *dealing with anxiety'* as well as practicing some of these new techniques during the sessions and in between sessions via 'homework', were helpful in managing and reducing anxiety. Despite these perceived benefits, only some CS continued to use these techniques after the group ended. A number of 'challenges to ongoing use of techniques' were identified by some CS.

Some CS were still in the process of cancer acceptance during group CBT. Interestingly, there seemed to be a link between the previous four categories and the category '***Accepting that I had cancer and I can deal with it'*** as they seemed to contribute to CS 'moving towards cancer acceptance'. Despite this, there were a number of factors and 'challenges to cancer diagnosis acceptance' that seemed to prevent CS from shifting their views towards cancer acceptance.

Lastly, as a result from the experiences and views of cancer and anxiety prior, during, and after attending group CBT, several CS seemed to have started '**Looking differently at the future**'. Several CS reported having changed some of their views and having developed greater self-efficacy and 'hope about the future'. Although overall CS seemed to have benefited from group CBT by reducing anxiety levels as well as gaining several additional benefits from group attendance as mentioned in the seven categories of this model, some CS also reported having 'new things to be anxious about'. For example, worries about cancer recurrence or other ways of dying as a result from attending group CBT. This can consequently result in greater distress or even group dropout.

Figure 1. Framework developed for understanding CS' experiences of receiving group CBT for anxiety



Discussion

Overall, CS across tumour groups seemed to have had a wide range of positive experiences resulting from group CBT attendance that seemed to outweigh negative experiences. These included perceived reduced symptoms of anxiety and panic, and positive experiences as a result from group members interaction such as greater connection and support from the group. These findings are consistent with previous literature indicating that breast CS had an overall positive experience of receiving group CBT for hot flushes and night sweats (Balabanovic et al., 2012) as well as another study which shown it to be helpful in reducing emotional distress in CS (Edelman et al., 1999). Moreover, having higher social support has been identified as one of the main coping strategies for CS and it was linked with reduced stress and better QoL (Haugland et al., 2016).

Having positive expectations and hopes regarding group CBT seemed to influence and contribute to their engagement in group therapy. Similar findings found that clients holding a more positive and open mind regarding CBT prior to engaging in an online CBT intervention found it more acceptable (Beattie, Shaw, Kaur & Kessler, 2009).

One of the main factors contributing to positive experiences of group CBT was the ability, and preference, to talk with others who had a shared understanding about their experiences that helped normalising their thoughts and feelings. Talking had a cathartic effect for some CS and it helped connecting with the group members. Yalom (1995) has previously identified catharsis as a powerful therapeutic group factor that people might experience.

Another change from group interaction was developing a sense of belonging. Sense of belonging is a basic human need and it has been previously linked with increased survival (Maslow, 1954; Barrett et al., 2002). Other studies (for example, Diefenbeck et al., 2014) evaluating online support groups have also noticed the importance of other Yalom's therapeutic group factors such as imparting of information and universality. The latter helps normalise feelings and experiences that might also be experienced by others in the group. Although at

times this was a contributing factor for positive experiences, not all experiences were shared between CS, particularly in the present study which included people diagnosed with a variety of cancers. This seemed to be the main factor for the distress caused between group members. Being exposed to different experiences and negative narratives might increase anxiety levels such as when members shared experiences of cancer recurrence. The interaction between group members is complex and dynamic and these intergroup processes can have a significant impact on people (Hogg, 1996).

Moreover, CS reported learning new ways of dealing with anxiety. This included learning about CBT techniques such as: mindfulness, goal setting, recognising early signs of anxiety; learning about links between thoughts, feelings and behaviours; and identifying, challenging, and replacing negative thoughts. Previous research has indicated positive experiences of cognitive restructuring and dealing with negative automatic thoughts for people with social anxiety (Hope et al., 2010). For Hope et al. (2010) study, it was important to practice some of these new coping strategies during group sessions as well as in-between sessions via *homework*. However, the present study seems to have identified a wider range of acceptable CBT techniques specifically for CS. Despite finding beneficial learning about a wide range of CBT techniques, participants selected a few CBT techniques that were helpful for them that some participants continued to use beyond group participation. These findings are in line with those experienced by breast cancer survivors (Balabanovic et al., 2012).

Some of the mechanisms of change identified were having a greater understanding of anxiety and better cancer acceptance. A review indicated great benefits of psychoeducation group interventions for CS (Edelman et al., 2000). Furthermore, a breast cancer study also acknowledged the importance of accepting symptoms of anxiety (Balabanovic et al., 2012). Factors that seemed to prevent cancer acceptance included experiencing a wide range of emotional reactions to diagnosis such as shock or denial, or obtaining an advanced stage diagnosis. Contributing factors for cancer acceptance included obtaining cancer-specific

information, understanding that they had a chronic condition, and knowing they could do something about it in the future.

CS also seemed to have experienced greater hope about the future and self-efficacy following group attendance which was achieved through comparison with others, which seemed to help put their experiences into perspective. Social comparison theory might help in explaining this because it states that social and personal worth is achieved by comparison with others and Bellizzi et al. (2006) also found this in his research project with adult CS. In the present study it seemed that when CS compared themselves and found similar experiences it helped them to gain a sense of shared understanding and universality. When CS compared themselves and found that they might actually be doing better than others in the group, this helped them getting a greater sense of hope and self-efficacy that they would not have been aware of if there was not an element of comparison with others.

Clinical implications

The present study provides information regarding experiences of receiving group CBT in hospital and overall it seemed acceptable and beneficial across cancer types, therefore, hospital-based clinicians might consider providing this type of intervention for CS.

The present study also gathered important information regarding some challenges that seemed to prevent CS from continuing to attend group CBT such as when group participants focused on negative narratives or heard about other cancer types or other ways they might die. This information might help improve practice quality in the future, for example, clinicians might be able to moderate group discussions more closely and encourage a balance between negative and positive narratives. Clinicians might also consider excluding clients with untreated cancer-related PTSD to avoid them experiencing significant further distress. Moreover, facilitators could inform participants in advance that they might hear about other cancer diagnosis and difficult treatments during group CBT, so that they are better prepared for this and this might help preventing future dropouts.

The findings from the model obtained provided relevant information regarding mechanisms of change and factors that influenced and prevented some changes in CS. For example, it highlighted some of the challenges that might prevent CS from continuing to use CBT techniques beyond group attendance. Therefore, facilitators might find strategies to overcome these barriers such as providing information regarding the importance of practicing coping strategies to maintain their reduction in anxiety levels.

Strengths and study limitations

Despite the increased interest in group CBT interventions for CS, there is a significant paucity in the literature regarding CS experiences of receiving such interventions; thus the present study added significant value to research and future clinical practice.

Regarding the sample, although it was not possible to conduct theoretical sampling due to the limited number of participants available to recruit; it was a great strength having included participants with a variety of cancer diagnosis, cancer stages, age groups, and occupational status. This is particularly important due to the fact that a lot of the cancers studied, such as tongue cancer, are underrepresented in the literature.

This study had a small sample size that might prevent inferences from conclusions of this study to be made regarding all CS. Despite not having found new themes in the last two interviews, due to the small sample size it is not possible to conclude that saturation was achieved.

Another limitation was the lack of participants from different ethnic backgrounds as solely White participants took part in this study. Therefore, results should be interpreted with caution as they might not be representative of the views of all CS.

Although the present study included CS from five group CBT interventions for anxiety conducted between 2016 and 2018, it only included participants from one hospital site, therefore, limiting the ability to generalise results to the wider cancer population.

Another significant limitation was that the majority of the interview schedule questions were quite directive and additional open questions might have helped exploring mechanisms of change further that is one of the main research questions. Consequently, the content obtained was heavily focused on clinical outcome as a result.

Future research

Due to the lack of qualitative studies looking at CS experiences of group CBT, results from this study were encouraging, however, more studies are needed to be able to confirm findings obtained. Furthermore, information obtained from this study might help the design of future projects and trials. For instance, exploring whether views obtained are also shared by CS from other ethnic backgrounds or other cultures.

Conclusion

Due to paucity in the literature, this study developed a framework of CS' experiences of receiving group CBT for anxiety as well as understanding mechanisms of change at play. Findings indicated that although overall group CBT seemed to be acceptable for CS with regards to improved anxiety outcomes, there were a range of positive and negative experiences reported. Numerous CBT techniques were identified as helpful although CS tend to use only a few of these techniques. Some of the mechanisms of change identified were: better understanding of anxiety, greater support through hearing and talking to other CS which normalised feelings, enabled a sense of belonging, connecting with the group members, accepting cancer, and developing hope about the future by having access to new coping techniques.

Most findings seemed comparable with other psycho-oncology literature. However, novel findings indicated the importance of accepting cancer in order to be able to move forward. Despite these promising results, being exposed to different CS experiences and negative narratives might increase anxiety levels such as, for example, when group members shared experiences of cancer recurrence or hearing stories regarding other cancer types, difficult

treatments and *other ways of dying*. Results from this study support the use of group CBT for CS experiencing anxiety and provide ideas on how clinicians might adapt these interventions to meet CS needs and overcome some of the challenges identified. Some limitations included small sample size and a lack of ethnic diversity within participants. More research is needed to confirm findings obtained in this study and the framework developed.

References

Albrecht, T. A., & Rosenzweig, M. (2012). Management of Cancer Related Distress in Patients with a Hematological Malignancy. *Journal of hospice and palliative nursing : JHPN : the official journal of the Hospice and Palliative Nurses Association*, *14*(7), 462–468. doi:10.1097/NJH.0b013e318268d04e

Balabanovic, J., Ayers, B., & Hunter, M. S. (2012). Women's experiences of group cognitive behaviour therapy for hot flushes and night sweats following breast cancer treatment: An interpretative phenomenological analysis. *Maturitas, 72*(3), 236-242. http://dx.doi.org/10.1016/j.maturitas.2012.03.013

Barrett, L., Dunbar, R., & Lycett, J. (2002). *Human Evolutionary Psychology*. Princeton, NJ: Princeton University Press.

Beattie, A., Shaw, A., Kaur, S. and Kessler, D. (2009), Primary-care patients' expectations and experiences of online cognitive behavioural therapy for depression: a qualitative study. Health Expectations, 12: 45-59. http://dx.doi.org/10.1111/j.1369-7625.2008.00531.x.

Behenck, A. S., Gomes, J. B., & Heldt, E. (2016). Patient rating of therapeutic factors and response to cognitive-behavioral group therapy in patients with obsessive-compulsive disorder. *Journal of Issues in Mental Health Nursing, 36*(6), 392-399. http://dx.doi.org/10.3109/01612840.2016.1158335

Bellizzi, K., Blank, T., & Oakes, C. (2006). Social comparison processes in autobiographies of adult cancer survivors. *Journal of Health Psychology, 11*(5), 777–786. http://dx.doi.org/10.1177/1359105306066637

Carmack-Taylor, C. L., Kulik, J., Badr, H., Smith, M., Basen-Engquist, K., Penedo, F., & Gritz, E. R. (2007). A social comparison theory analysis of group composition and efficacy of cancer support group programs. *Social Science & Medicine (1982), 65*(2), 262-273. http://dx.doi.org/10.1016/j.socscimed.2007.03.024

Charmaz, K. (2006) *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. SAGE publications: London.

Choi, Y. H., & Park, K. H. (2006). Therapeutic factors of cognitive behavioural group treatment for social phobia. *Journal of Korean Medical Science, 21*(2), 333-336. http://dx.doi.org/10.3346/jkms.2006.21.2.333

Cohen, M., & Fried, G. (2007). Comparing relaxation training and cognitive- behavioral group therapy for women with breast cancer. *Research on Social Work Practice, 17*(3), 313-323. http://dx.doi.org/10.1177/1049731506293741

Diefenbeck, C. A., Klemm, P. R., & Hayes, E. R. (2014). Emergence of Yalom's therapeutic factors in a peer-led, asynchronous, online support group for family caregivers. *Journal Issues in Mental Health Nursing, 35*(1), 21-32. http://dx.doi.org/10.3109/01612840.2013.836260

Edelman, S., Bell, D. R., & Kidman, A. D. (1999). A group cognitive behaviour therapy programme with metastatic breast cancer patients. *Psycho-Oncology, 8*(4), 295-305. http://dx.doi.org/10.1002/(SICI)1099-1611(199907/08)8:4<295::AID-PON386>3.0.CO;2-Y

Edelman, S., Craig, A., & Kidman, A. D. (2000). Group interventions with cancer patients: Efficacy of psychoeducational versus supportive groups. *Journal of Psychosocial Oncology, 18*(3), 67-85. http://dx.doi.org/10.1300/J077v18n03_05

Edelman, S., & Kidman, A. D. (1999). Description of a group cognitive behaviour therapy programme with cancer patients. *Psycho-Oncology, 8*(4), 306-314. http://dx.doi.org/10.1002/(SICI)1099-1611(199907/08)8:4<306::AID-PON387>3.0.CO;2-Y

Faller, H., Schuler, M., Richard, M., Heckl, U., Weis, J., & Küffner, R. (2013). Effects of psycho-oncologic interventions on emotional distress and quality of life in adult patients

with cancer: Systematic review and meta-analysis. *Journal of Clinical Oncology*, *31*(6), 782-793. http://dx.doi.org/10.1200/JCO.2011.40.8922

Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, *7*(2), 117–140. https://doi.org/10.1177/001872675400700202

Haugland, T., Wahl, A. K., Hofoss, D., & Devon, H. A. (2016). Association between general self- efficacy, social support, cancer- related stress and physical health- related quality of life: A path model study in patients with neuroendocrine tumors. *Health and Quality of Life Outcomes, 14*, 11. http://dx.doi.org/10.1186/s12955-016-0413-y

Hogg, M. A. (1996). Social psychology and personality: Group processes. In *The Blackwell Encyclopedia of Social Psychology online. Retrieved from* http://www.blackwellreference.com/public/tocnode?id=g9780631202899_chunk_g9780631202899_ss1-9#citation

Hope, D. A., Burns, J. A., Hayes, S. A., Herbert, J. D., & Warner, M. D. (2010). Automatic thoughts and cognitive restructuring in cognitive behavioral group therapy for social anxiety disorder. *Cognitive Therapy and Research*, *34*(1) 1-12. http://dx.doi.org/10.1007/s10608-007-9147-9

Liu, C. J., Hsiung, P. C., Chang, K. J., Liu, Y. F., Wang, K. C., Hsiao, F. H., Ng, S. M., & Chan, C.L. (2008), A study on the efficacy of body–mind–spirit group therapy for patients with breast cancer. Journal of Clinical Nursing, 17: 2539-2549. doi:10.1111/j.1365-2702.2008.02296.x

Manne, S. L., Kashy, D., Siegel, S. D., & Heckman, C. J. (2016). Group therapy processes and treatment outcomes in two couple-focused group interventions for breast cancer patients. *Psycho-Oncology*. http://dx.doi.org/10.1002/pon.4323

Maslow, A. H. (1954). The instinctual nature of basic needs. *Journal of Personality*, *22*(3), 326-347. DOI: 10.1111/j.1467-6494.1954.tb01136.x.

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. *Forum: Qualitative Social Research, 11*(3), 1-19. http://dx.doi.org/10.17169/fqs-11.3.1428.

Morse, J. M. (1994). Designing funded qualitative research. In Norman K. Denzin & Yvonna S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp.220-35). Thousand Oaks, CA: Sage.

National Health Service England (2015). The NHS Core Principles (NHS England). London, England: Author. Retrieved from http://www.nhs.uk/NHSEngland/thenhs/about/Pages/nhscoreprinciples.aspx

National Institute for Health and Clinical Excellence (2011, January). *Generalised anxiety disorder and panic disorder (with or without agoraphobia) in adults*. London. Retrieved from http://www.nice.org.uk/guidance/CG113

Nikbakhsh, N., Moudi, S., Abbasian, S., & Khafri, S. (2014). Prevalence of depression and anxiety among cancer patients. *Caspian Journal of Internal Medicine, 5*(3), 167–170.

Oei, T. P. S., McAlinden, N. M., & Cruwys, T. (2014). Exploring mechanisms of change: The relationships between cognitions, symptoms, and quality of life over the course of group cognitive-behaviour therapy. *Journal of Affective Disorders, 168,* 72-77. http://dx.doi.org/10.1016/j.jad.2014.06.040

Strauss, A., & Corbin, J. (1990). Basics of qualitative research: Grounded theory procedures and techniques. London: Sage.

Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research Techniques*. Thousand Oaks, CA: Sage publications.

Torre, L.A., Bray, F., Siegel, R. L., Ferlay, J., Lortet-Tieulent, J. & Jemal, A. (2015). Global cancer statistics 2012. *CA A Cancer Journal for Clinicians, 65*, 87-108. http://dx.doi.org/10.3322/caac.21262

Urquhart, C. (2013). *Grounded Theory for Qualitative Research: A Practical Guide*. Sage: Los Angeles.

Vogel, E., Blanck, P., Bents, H. & Mander, J. (2016). Change factors in group therapy: Development and validation of a questionnaire. *Europe PMC, 66(5),* 170-179. http://dx.doi.org/10.1055/s-0042-104495

World Cancer Research Fund International. (2018, n.d.). *Worldwide data.* Retrieved from http://www.wcrf.org/int/cancer-facts-figures/worldwide-data

Yalom, I. D. (1995). *The theory and practice of group psychotherapy*. New York: Basic Books.

Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health, 15*, 215-228.

Zeng, X., Zhang, Y., Kwong, J. S. W., Zhang, C., Li, S., Sun, F., . . . Du, L. (2015). The methodological quality assessment tools for preclinical and clinical studies, systematic review and meta-analysis, and clinical practice guideline: A systematic review. *Journal of Evidence Based Medicine, 8*(1), 2-10. http://dx.doi.org/10.1111/jebm.12141

SECTION C:

Sonia Lopes BSc, MSc

Appendices and Supporting Materials

Appendix A Search terms list

Participants (all fields)	**Interventions (all fields)**	**Comparisons (all fields)**	**Outcomes (all fields)**
Cancer survivor* OR Cancer Patient* OR Neoplasm*	Group cognitive behav* Group cognitive Group behav* Group CT Group CBT Group based cognitive Group based behav* Group based CT Group based CBT	RCT Randomised controlled Randomized controlled Random*	Anxiety OR Worry* OR Worrie* OR Anxious

Appendix B HRA approval

This has been removed from the electronic copy.

Appendix C NHS ethics approval

This has been removed from the electronic copy.

Appendix D Email with confirmation of capacity and capability

This has been removed from the electronic copy.

Appendix E Applied Health Research in Cancer Governance Group Approval

This has been removed from the electronic copy.

Appendix F Participant information sheet

Faculty of Social and Applied Sciences
Clinical Psychology Doctoral Programme
Canterbury Christ Church University
Tunbridge Wells Campus

Participant Information Sheet

Cancer survivors' experiences of receiving group Cognitive Behavioural Therapy (CBT)

Hello. My name is Sonia Lopes and I am a trainee clinical psychologist at Canterbury Christ Church University. I would like to invite you to take part in a research study. Before you decide it is important that you understand why the research is being done and what it would involve for you.

What is the purpose of the study?
The study aims to explore how people with different types of cancer experience group Cognitive Behavioural Therapy (CBT). This project hopes to develop an understanding of what factors impacted on your experiences including which aspects of receiving group CBT were helpful and less helpful.

Why have I been invited?
According to the World Cancer Research Fund (2018) *"… cancer survivors are defined as all people who have been diagnosed with cancer, including before, during and after treatment."*
You have been invited to take part in the study because you have been previously diagnosed with cancer and have taken part in a group CBT programme within the last two years.

Do I have to take part?
Taking part in this study is entirely voluntary and it is up to you if you decide to join the study. If you agree to take part, I will then ask you to sign a consent form. You are free to withdraw at any time, without giving a reason. This would not affect the standard of care you receive. The researcher will stop interviewing after completing 15 interviews; therefore, there is no guarantee that you will take part if you contact the researchers after they conducted 15 interviews.

Faculty of Social and Applied Sciences
Clinical Psychology Doctoral Programme
Canterbury Christ Church University
Tunbridge Wells Campus

What will happen to me if I take part?
If you are interested in taking part, you will be asked to attend an interview with the researcher. Please contact me (Sonia) either by email or telephone, using my contact details below. I will then contact you to arrange a suitable date and time for the interview to take place. We can either arrange a telephone interview or a face-to-face interview at central London or at the University campus, whichever is most convenient for you. If it is uncomfortable for you to sit in a fixed position for an hour, we will try to ensure a comfortable environment and allow time for breaks as needed.
The interview will have open questions and we anticipate that it will take approximately one hour though you will be free to take breaks if you need. The interview will be audio-recorded but all information will be anonymised and destroyed when no longer needed.
You will be asked a number of questions about your experience of living with cancer and taking part in the group CBT programme. We understand that some experiences can be difficult to talk about, and you will be free to talk at your own pace. There will be a space to discuss your experience of the interview process at the end.

Expenses and reimbursements
You are able to claim for up to £10 for travel costs of participating in the study.

What are the possible benefits of taking part?
If you choose to take part in the study we have an opportunity of gaining a better understanding of the experience of people living with cancer who have completed the group CBT programme. It may also help us better understand what factors are important and this may help tailoring and improving treatments in the future.

What are the possible disadvantages and risks of taking part?
Your views could potentially help improving services in the future however; this is more likely to be of the benefit of cancer survivors attending group CBT in the future, rather than benefiting those taking part in this project.
To get a clear understanding of your experience, although most questions are quite broad, you might feel sensitive or find it difficult to answer some of these. The researcher will ask questions in a sensitive manner, and you are free not to answer some of them if you prefer.
Although it is not expected that taking part in this research project will cause great distress in participants, questions will be asked about sensitive information. However, please let the researcher know if you experience any distress during the interview. The researcher will then stop the interview and give you the option for to continue the interview later or at a different time or, to end participation in the research project. In the unlikely event of the level of distress being substantial then the researcher may suggest that you contact your GP.

Will my taking part in this study be kept confidential?
Data from this study will be handled in accordance with the provisions of the General Data Protection Regulations (GDPR) 2018 and what you tell the researcher will be kept confidential except if you disclose information that indicate that you or others might be at risk of harm.

Appendix G Consent form

Faculty of Social and Applied Sciences
Clinical Psychology Doctoral Programme
Canterbury Christ Church University
Tunbridge Wells Campus

Informed Consent Form

Cancer survivors' experiences of receiving group Cognitive Behavioural Therapy (CBT)

Please initial each statement:

1. I confirm that I have read the information sheet Version 4 dated 06/12/2018 for the above project and have had the opportunity to ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and I am free to withdraw consent at any time, without giving a reason, and without my legal rights being affected.	☐
3. I agree to have the telephone or face-to-face interview audio-recorded and anonymous quotes will be used in reports.	☐
4. I understand that data collected may be looked at by responsible representatives from the Canterbury Christ Church University a[redacted] give permission for these individuals to have access to relevant information.	☐
5. I understand that such information will be treated as strictly confidential and handled in accordance with the provisions of the General Data Protection Regulations (GDPR) 2018.	☐
6. I understand that data will be kept for five years at Canterbury Christ Church University, and results from this project might be published and I agree that information resulted from this interview to be used for that purpose. Confidentiality and anonymity will be maintained and it will not be possible to identify me from any publications.	☐
7. I agree to participate in the interview.	☐

Name of participant (Print)	Signature of participant	Date
Name of researcher (Print)	Signature of participant	Date

1 copy is for the participant and 1 copy for the investigator file

Appendix H Invitation letter Trust A

This has been removed from the electronic copy.

Appendix I Interview topic guide

Faculty of Social and Applied Sciences
Clinical Psychology Doctoral Programme
Canterbury Christ Church University
Tunbridge Wells Campus

Interview – Topic Guide

Exploring cancer survivors' experiences of receiving group Cognitive Behavioural Therapy

Introductions and Background

Briefly introduce myself; say the aims of study, check length of interview, audio-recorded, signed consent form.

1. **Experiences of having cancer**
    a. What was your experience of having cancer?
        i. Prompt: cancer type, stage and treatment type, and when had cancer diagnosis
    b. What symptoms did you experience?
    c. What treatment side effects did you experience?

2. **Finding the CBT group**
    a. How did you find the group CBT?
        i. Prompt: who referred you?

ii. Prompt: how long were you waiting between the referral and starting the group?

b. What led you to attend group CBT?
c. What problems were you experiencing at the start of the group?
d. When did you attend group CBT?
    i. Prompt: recently or a few years ago

3. Experience of receiving group CBT

a. What was your experience of receiving group CBT?
b. What was helpful?
c. What was unhelpful?
    i. Prompt: Positive and negative aspects of your experience

4. Characteristics/Factors that influenced your experience

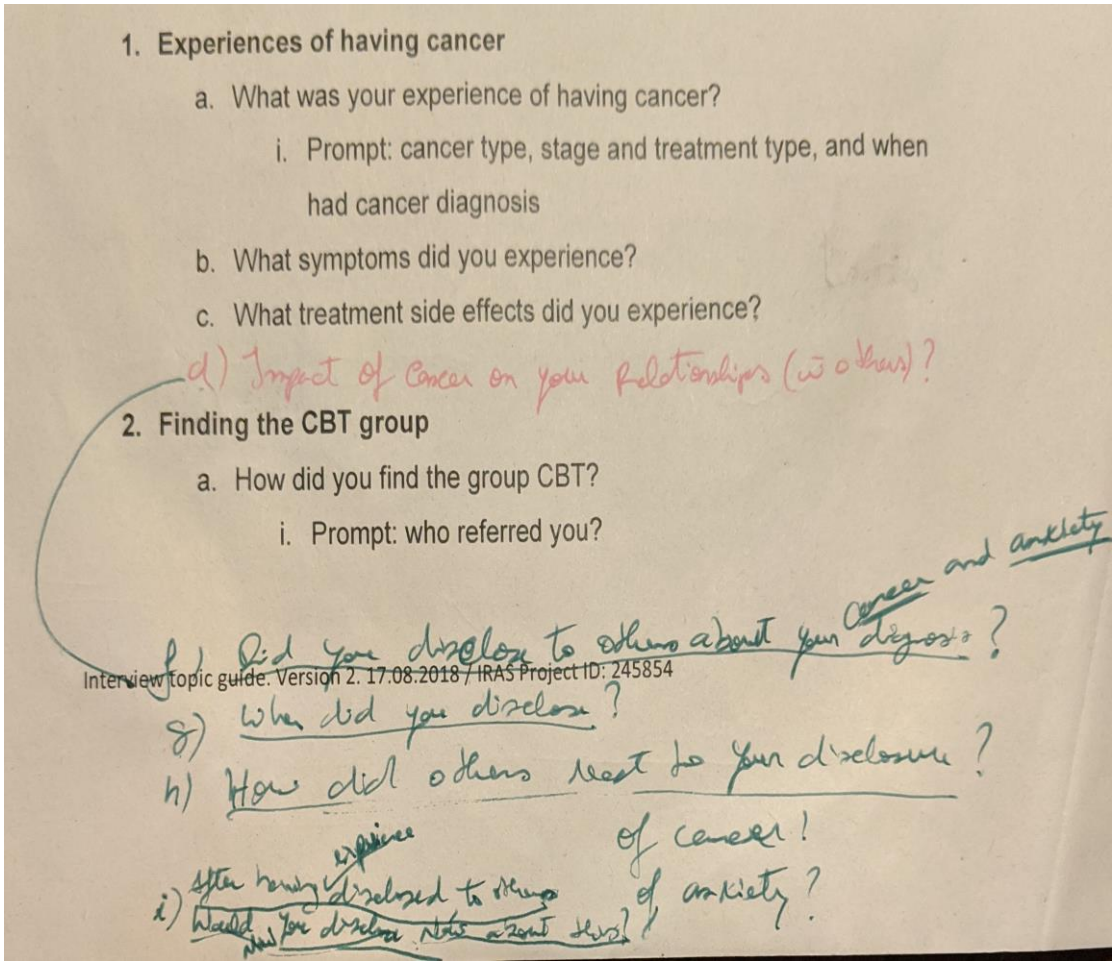
a. What characteristics or factors that influenced your experience?
    i. Prompt: both positive and negative factors

5. Views regarding group format and CBT therapy received

a. What are your views regarding the group format?
b. What are your views regarding CBT therapy received?
    i. Prompt: What was helpful? What was unhelpful? (e.g. information received, learning to accept symptoms, goal setting, problem solving, how many sessions did you attend)
    ii. Prompt: Are you using or have you used any techniques that you learned at the group CBT?
    iii. Prompt: What could or should have been included?

6. Perceived impact of group CBT on general wellbeing

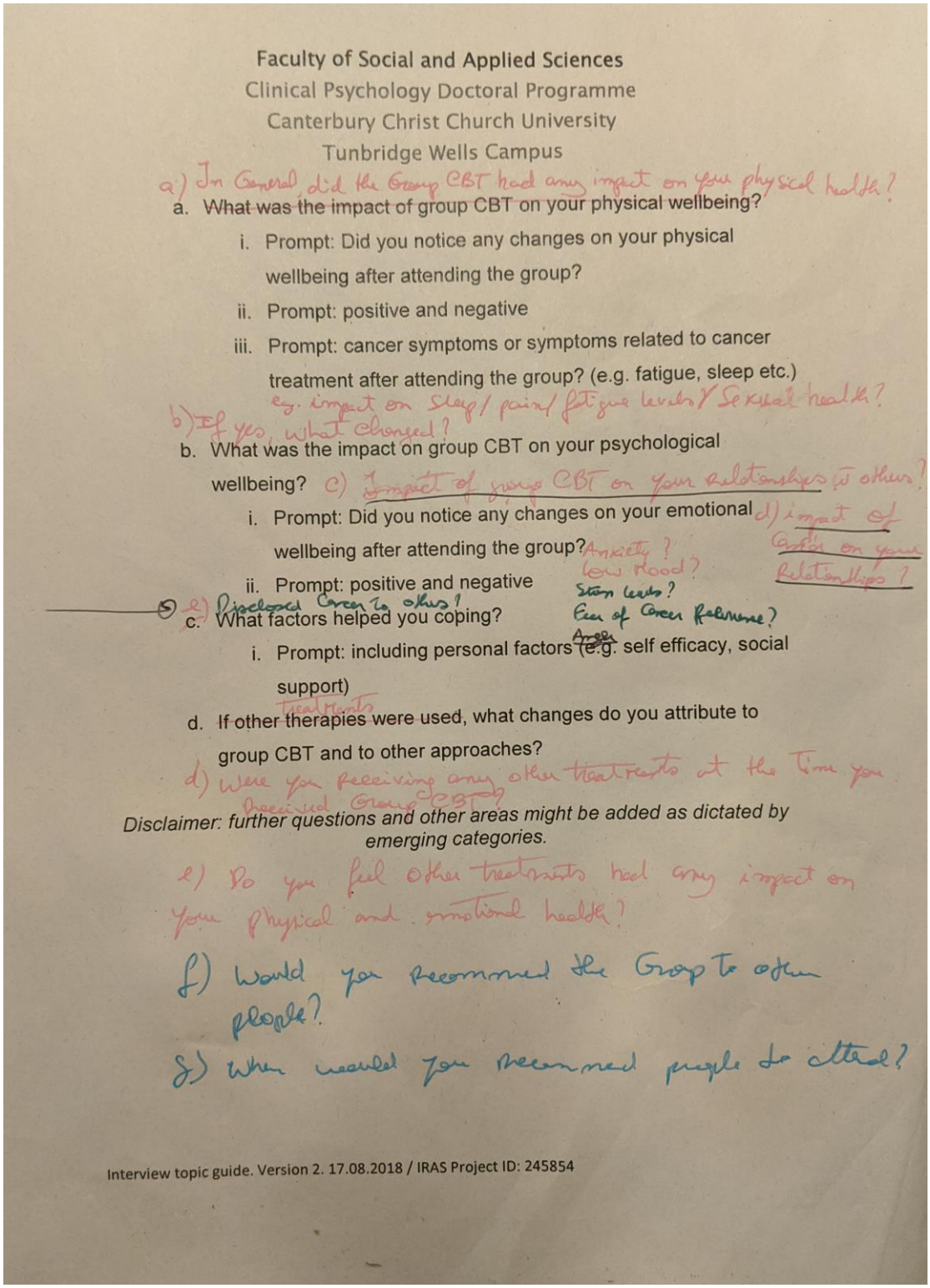
Appendix J Interview topic guide (topic questions progression)



1. **Experiences of having cancer**
    a. What was your experience of having cancer?
        i. Prompt: cancer type, stage and treatment type, and when had cancer diagnosis
    b. What symptoms did you experience?
    c. What treatment side effects did you experience?
    d) Impact of cancer on your relationships (w others)?
2. **Finding the CBT group**
    a. How did you find the group CBT?
        i. Prompt: who referred you?

f) Did you disclose to others about your cancer and anxiety diagnosis?
g) When did you disclose?
h) How did others react to your disclosure?
i) After having experience disclosed to others of cancer and anxiety? Would you disclose more about this?

Interview topic guide. Version 2. 17.08.2018 / IRAS Project ID: 245854



Faculty of Social and Applied Sciences
Clinical Psychology Doctoral Programme
Canterbury Christ Church University
Tunbridge Wells Campus

a) In General, did the Group CBT had any impact on your physical health?

a. What was the impact of group CBT on your physical wellbeing?
   i. Prompt: Did you notice any changes on your physical wellbeing after attending the group?
   ii. Prompt: positive and negative
   iii. Prompt: cancer symptoms or symptoms related to cancer treatment after attending the group? (e.g. fatigue, sleep etc.)

eg. impact on sleep / pain / fatigue levels / Sexual health?

b) If yes, what changed?

b. What was the impact on group CBT on your psychological wellbeing?

c) Impact of group CBT on your relationships to others?

   i. Prompt: Did you notice any changes on your emotional wellbeing after attending the group?
   ii. Prompt: positive and negative

d) impact of Cancer on your Relationships?

Anxiety? Low Mood? Stress levels? Fear of Cancer Relapse? Anger

e) Disclosed Cancer to others?

c. What factors helped you coping?
   i. Prompt: including personal factors (e.g. self efficacy, social support)

treatments

d. If other therapies were used, what changes do you attribute to group CBT and to other approaches?

d) Were you Receiving any other treatments at the Time you Received Group CBT?

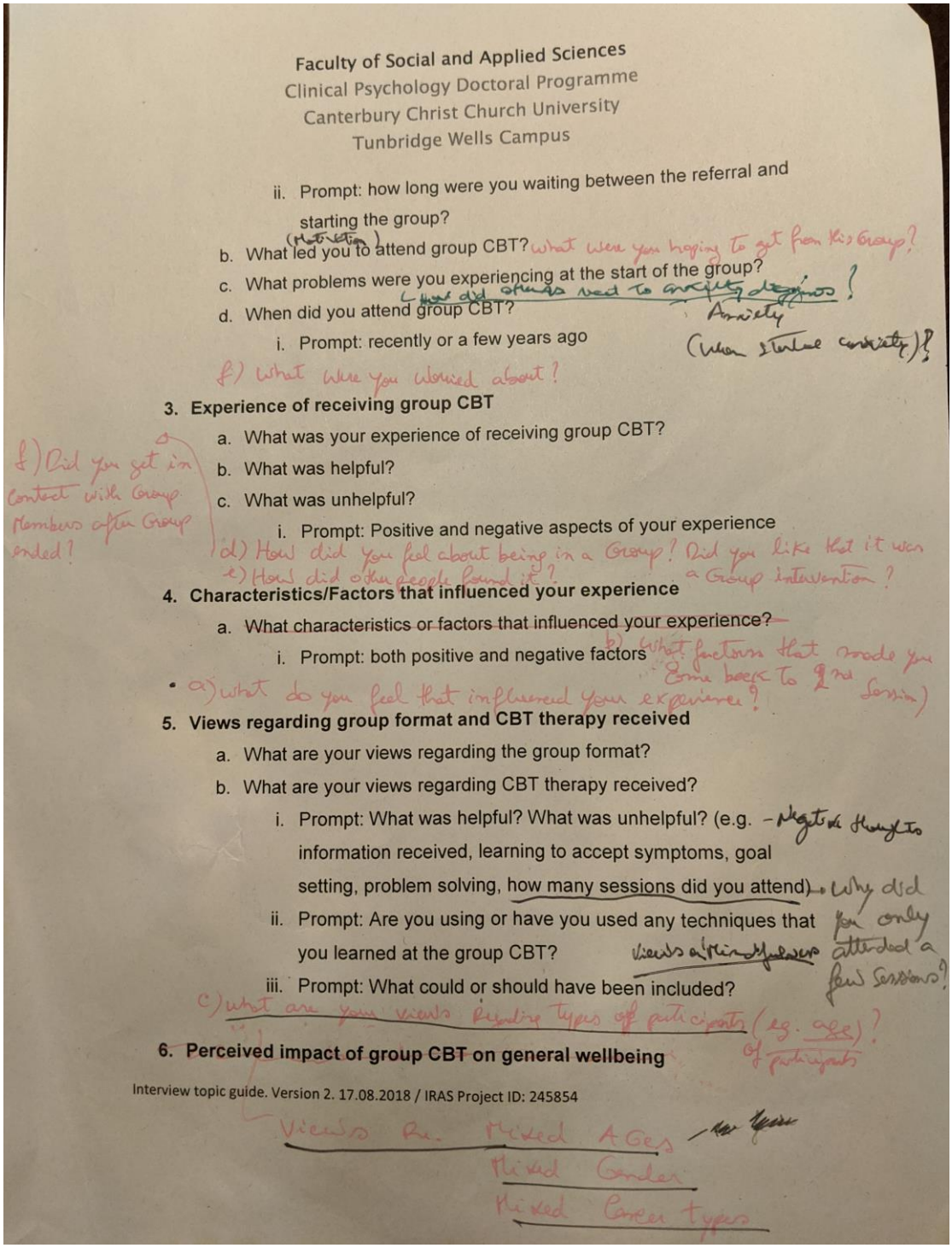
Disclaimer: further questions and other areas might be added as dictated by emerging categories.

e) Do you feel other treatments had any impact on your physical and emotional health?

f) Would you Recommend the Group to other people?

g) When would you Recommend people to attend?

Interview topic guide. Version 2. 17.08.2018 / IRAS Project ID: 245854



Faculty of Social and Applied Sciences
Clinical Psychology Doctoral Programme
Canterbury Christ Church University
Tunbridge Wells Campus

ii. Prompt: how long were you waiting between the referral and starting the group?

b. What led you to attend group CBT?

c. What problems were you experiencing at the start of the group?

d. When did you attend group CBT?

i. Prompt: recently or a few years ago

3. Experience of receiving group CBT

a. What was your experience of receiving group CBT?

b. What was helpful?

c. What was unhelpful?

i. Prompt: Positive and negative aspects of your experience

4. Characteristics/Factors that influenced your experience

a. What characteristics or factors that influenced your experience?

i. Prompt: both positive and negative factors

5. Views regarding group format and CBT therapy received

a. What are your views regarding the group format?

b. What are your views regarding CBT therapy received?

i. Prompt: What was helpful? What was unhelpful? (e.g. information received, learning to accept symptoms, goal setting, problem solving, how many sessions did you attend)

ii. Prompt: Are you using or have you used any techniques that you learned at the group CBT?

iii. Prompt: What could or should have been included?

6. Perceived impact of group CBT on general wellbeing

Appendix K Confidentiality transcribing agreement

This has been removed from the electronic copy.

Appendix L Extracts from research journal

Selected extracts

May 2017

I feel that I should have started my research journal earlier, but it is better earlier than never.

I was really excited today as I met with a cancer survivor who reviewed my research project design and she found it really interesting topic and acceptable for cancer survivors to take part. She did also review my first draft of the Interview Topic Guide and her help with this was greatly appreciated. She identified a number of questions that did not seem to be clear for her, I made note of her suggestions.

July 2017

Finally submitted my MRP proposal today after having done more than five versions that were back and forth between supervisors. It was really hard work but I feel it was worth it. I suggested doing IPA for my methodology, lets hope it is accepted.

September 2017

I am excited to start my second year of doctorate even though scared with how much it still needs to be done for my MRP. I already worked on the Interview Topic Guide and changed the questions that were not acceptable to the cancer survivor who piloted it. I sent it to my supervisors and one of them gave me her comments today and she made further changes, as some were not well constructed.

August 2018

It does feel like a huge milestone achieved as today I finally passed my MRP proposal. I had to change my methodology for grounded theory as examiners felt it was more adequate for my research question. It does sound quite huge to use grounded theory and I am both excited to learn a new methodology but also really worried it might be too complex to learn and understand. I am really glad that my main supervisor is an expert in qualitative research and has several publications using grounded theory.

October 2018

I finally got my NHS ethics approval for my project today. I never thought it would take so long as they did not seem to be ever satisfied and asked me to amend so many questions. I lost count how many emails I have exchanged and, after our telephone meeting (well it had to be over the telephone) they ended up asking me to make so many changes to my research protocol. Anyway, I should celebrate now that one big step is taken. Now, I am still waiting to hear from HRA.

December 2018

Yay, I just got my HRA approval, finally!!! In reflection, I feel really upset about the whole process. I lost count how many emails we I have exchanged between HRA and NHS ethics. I feel a little bit annoyed with the fact that some of the changes they have asked me to do had already been reviewed by NHS ethics and HRA advice was going a little bit against what NHS had said. So now, I have to contact NHS ethics again to see if they are happy for me to make those changes to satisfy HRA. It just feels that I am doing one step forward, two steps back. My supervisor said this is unusual also because usually HRA is the overarching committee that was supposed to make the whole process easier, not the opposite.

February 2019

This is getting a bit ridiculous now. So, not only I had to contact Ethics and HRA again several times since being granted their approvals, I was now told I need another approval, that is from a specific research oncology group within the Trust where I am recruiting most of my participants. None of my supervisors had heard about this before so again, this feels a little bit unusual. My thoughts are: Will I ever be granted full permission to start recruitment? It seems pretty clear to me now that I will most likely not be able to finish my thesis on time for April submission that is disappointing.

February 2019

I can't believe that finally I have all approvals I need. I got accepted to the research oncology group fairly quickly and then I was told I needed another approval and I almost felt desperate about approvals. But the latter was really quick, it was a few weeks and I had it, its called the Confirmation of Capacity and Capability approval and I am finally ready for starting recruitment.

April 2019

I am feeling a bit sad today. Even though I made significant efforts to contact more than 3 charities and they had advertised my project, I have not heard from anyone yet, no participants so far. I also chased Dr XXXXX who is the clinical psychologist who runs the group CBT for anxiety for CS and her clients are likely to be my main source of participants for my study. The problem is that she is understandably very busy at work and said she can not contact her patients this month because of being busy and going on holiday soon.

June 2019

I am continuing to chase Dr XXXXXX but she said to me again that she is quite busy. Without her help, I am not sure I will actually have any patients as none from charities had contacted me. I contacted three more charities that also advertised but again no one had contacted me back. I hope my project is viable and that I don't have to change my topic as recruitment is basically in standby.

August 2019

I interviewed my first participant today. The interview went really well and it lasted 54 minutes. I was so curious to see what the patient might say in answer to my questions but also a little bit anxious to see if my interview topic guide was acceptable, and it was. I already have 4 more interviews booked for September. I tried to space them out as much as I could to do analysis interim interviews.

September 2019

A few participants had to re-schedule their interview to October. One was going on holiday and the other two I am not sure but they sounded like they really wanted to take part so hopefully they will not give up. I am really excited that I have further patients in my list that might be eligible. New themes had already emerged between interviews and I added more questions to the Interview topic guide. I find this bit so exciting, finding new themes!

October 2019

It has been interview after interview. I am currently on interview number 8. I can't believe that finally it is happening. It has been so interesting learning from CS' experiences. One I was particularly surprised as he said that he went to the group feeling very positive about his health and about the group. However, he has lung cancer and I know really well that lung cancer patients have a very poor prognosis and might have a significant short life expectancy. It was really interesting to challenge my views on how patients with lung cancer might feel about their cancer and themselves. He was such a happy and positive person that I was lovely to witness.

November 2019

I interviewed my last participant today. I am so excited and over the moon. The data I gathered is indeed great, all my interviews lasted more than 48 minutes which I was not expecting as patients with cancer usually struggle to concentrate for long periods of time, or have pain and find it hard due to this. I feel I have learned so much from my participants and they have definitely challenged my views on many things. For example, being positive when having a bad prognosis, or feeling really anxious and panicky when actually they had just been granted the full clear after five years of watchful waiting. My participants' anxiety had also somewhat impacted on my interviews. For example, one participant re-scheduled our interview four times. I spoke with my main supervisor about this because I would not usually chase participants more than twice but he kept asking me to ring him at a later date. And when we did the interview,

I realised it was all due to anxiety. He was avoiding talking to me because part of him did not want to talk about his experience of cancer. However, the other part of himself wanted to help as he really enjoyed attending group CBT and felt it had helped him so much. So, I am glad I was so grateful to his participation and to minimise his anxiety, on the day of the interview, I said "I will ask you 5 follow up questions about your cancer experience and then all the others will be about the group". And this really seemed to have helped him engage in my interview and he was so much more relaxed talking about the experience of the group CBT. Now is further analysis and discussion with my supervisor. I love my project because psycho-oncology is the area I want to become a specialist clinical psychologist. I am so glad I did not give up on it even though I faced all the approvals and recruitment obstacles.

Appendix M Coding table

Category	Subcategory	Open codes
Journey to accessing group CBT	Initial contact with the group Hopes about group CBT that led to engagement	Problems at time referral Referred to group Self-referral to group Reasons for going Waited short time Waited long time Attended group recently Motivation for group Positive expectations Negative expectations
Power of hearing other CS stories	*Feeling normal* by hearing other people's stories Learning from comparison with other CS The impact of negative narratives	Feeling normal as others also experience same problem Hearing about others struggling puts own case into perspective, helpful Listening to others stories, helpful Listening to other stories helpful as others doing worse than me Valued people in different working circumstances (context) Valued different gender Valued different age groups Good to compare with others and put our experience in perspectives Learning coping strategies from participants Learning from others with different ways of coping Learning coping strategies from other participants Focus on negatives and lack of positives Space for people to moan about things Left group because focus on negatives causing emotional harm Attending group provoked panic attacks Got panic attack as a result of attending group Reason for NOT continuing to go to other sessions (drop off – difficulties attending) Hearing negative stories is sad and traumatic Would prefer to have people with same cancer Difficult to witness others getting upset
Connection with other CS'	Worries about *speaking in the group* Preference of *talking to others who really understand* Mutual support and sense of *belonging* in the group	Being in a group helpful (format) Groups are anxiety provoking but positive Group as unhelpful Don't like talking in groups/anxiety provoking Like groups Challenge myself going to groups Confidence in talking in groups If uncomfortable talking in groups can be difficult to attend Safe place to talk Being in a group unhelpful (format) Worried over sharing in group Worried about being judged Views on format Smaller groups Group too big Bigger groups mean less time for people to participate Balance nr of people depressed in each group Good to speak with people who understand what having cancer means Disclosure of cancer or not Disclosing to others not helpful Negative experiences of disclosure Disclosing to others difficult as others have MH problems not helpful Disclosing helpful Positive experiences of disclosure Disclosing to others Disclosure and relationships Disclosing info to mother and children, including reactions of children to diagnosis Impact cancer diagnosis on relationships with others Talking to others helped Talking to others who really understand as have similar experience Sharing with others as catharsis Helpful to share with cancer survivors as not wanting to share with others like family Helpful being able to help others Being in a group Helped with isolation and realising those who are not isolated also do not

		do well Talking and group discussions helpful Support system mainly from group itself Unhelpful talking about breast cancer in front of men Mixed experiences about group Neither did good nor bad Positive and negative simultaneously Got in contact with group members after it ended
Gaining an understanding of anxiety	Limited prior understanding on *how anxiety works* Making sense of anxiety experiences	Learning about understanding how anxiety actually works Views CBT facilitators Valued facilitators support when someone needed Facilitators had empathy Facilitators good Learning information on how anxiety works and that is a physiological response Identifying and breaking anxiety patterns Recognise early signs of anxiety Identifying and breaking anxiety patterns Anxiety was the common factor Better understanding of anxiety
Coping mechanisms that can be put in place	New ways of dealing with anxiety Practical exercises during sessions and *homework* Challenges to ongoing use of techniques	Views CBT psychoeducational techniques Views all other CBT techniques Learning coping strategies from facilitators Learning how to challenge negative thoughts Helped being reminded of what helps and asked to do them Techniques/therapy helpful overall Learning tips on how to deal with anxiety from facilitators Thinking and challenging negative thoughts Replacing negative thoughts with alternatives Dealing with triggers through group Links between thoughts, feelings and behaviours Visualisation techniques were helpful Relaxation through diaphragmatic breathing Problem solving techniques Doing mindfulness exercise in session helps Practical exercises were helpful Provided materials to bring home helpful Mindfulness at end of sessions was great Relaxation through diaphragmatic breathing Goal setting helpful Journal to complete weekly Homework Techniques used after group ended Mindfulness Relaxation through diaphragmatic breathing Focus on positives Goal setting helpful Journal completed weekly Put positive quotes on my kitchen fridge door Factors that CBT techniques was unhelpful Divided into little groups to deliver a project CBT can feel like an assignment Negative beliefs about helpfulness of psychology
Accepting that I had cancer and I can deal with it	Challenges to cancer diagnosis acceptance Moving towards cancer acceptance	Avoiding getting cancer diagnosis No symptoms prior diagnosis Several symptoms prior diagnosis Diagnosis Type cancer Emotional reaction (diagnosis Cancer acceptance Cancer beliefs Helped accepting cancer diagnosis Helped coping with cancer trauma Learning to accept symptoms and cancer Learned how to live with cancer-related uncertainty and fear of recurrence Valued people with different diagnosis Helped with pain acceptance Helped with medication acceptance (morphine/pain) Better cancer acceptance

Looking differently at the future	Developing hope about the future New things CS might be anxious about	Being signposted to other specialists Going to sessions helped getting independence and a routine Focus on positives Learn that I can seek support if needed Hearing all these other ways of dying Listening to traumatic treatment or experiences causes more anxiety Listening about peoples experience of cancer recurrence unhelpful Unhelpful hearing moans about NHS Unhelpful hearing about other reproductive organ cancers Positive physical impact Helped with sleep Helped with sleep by reducing anxiety and reducing panic attacks, & travelling by bus to session was helpful Helped with dealing with hypochondria/health anxiety by talking Psychological changes Positive psychological impact CBT improved mood Deal better with anxiety Deal better with anxiety and stress Deal better with fear of cancer recurrence Still have anxiety but not so severe Reduced social phobia Knowing what helps Got tools to improve sleep Focused more on positives Ability to think/hope about the future Improved relationships at home and work Negative psychological impact More anxious due to witnessing others having cancer recurrence

Appendix N Coded transcript

Table with Interview, Open Codes, Subcategories and Categories.

This has been removed from the electronic copy.

Appendix O Author guidelines for the Integrative Cancer Therapies Journal

This has been removed from the electronic copy.

Appendix P End of study report

This has been removed from the electronic copy.

Appendix Q Participant feedback form

End of study summary for participants

Study Title: Cancer survivors' experiences of group CBT for anxiety

Aims

- Despite cancer survivors (CS) living longer, cancer diagnosis impacts significantly on their anxiety and quality of life (QoL).
- Although studies investigating the effectiveness of group CBT in CS have increased, there remains a paucity of data exploring CS experiences.

Methods

- To investigate CS' experiences of receiving group CBT for anxiety and mechanisms of change at play.
- Due to limited research in this area, qualitative grounded theory methodology (GTM) was applied to the data gathered from interviews.

Findings

- Thirteen CS with different cancer types, aged 29-75, took part either in a telephone or face-to-face interview.
- A framework was developed of CS group experiences for anxiety as well as mechanisms of change.
- Findings indicated that group CBT seemed acceptable amongst CS because, although a range of experiences were reported, CS felt that the positives outweighed the negatives because anxiety improved.
- The main mechanisms of change were understanding anxiety, and accepting anxiety, greater support and access to tools. Findings indicated that CS considered that group CBT helped improving anxiety. Some of the mechanisms of change were feeling that their experiences were normal, sense of belonging, greater support, understanding and new ways of dealing with anxiety that all seemed to have contributed to cancer acceptance and greater hope about the future. Some of the negative experiences reported included a focus on negative narratives including hearing about cancer recurrence or about other possible ways of dying.

Implications

- Group CBT intervention seemed to be acceptable for CS who reported improved anxiety and range of experiences.
- Despite a small sample size and ethnicity underrepresentation, clinicians may benefit from using these interventions with CS.
- Future research is needed to confirm current model and findings.

Thank you very much for your participation in this study. If you have any queries regarding the study results please do not hesitate in contacting me.

Yours Sincerely,

Sonia Lopes
Trainee Clinical Psychologist

Appendix R Feedback form for NHS Ethics and R&D

This has been removed from the electronic copy.