

AFTER and beyond: cancer recurrence fears and a test of an intervention in oral and oropharyngeal patients

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Aim: Fear of recurrence has been identified as a major factor for cancer patients. The aim was to assess effects of psychological intervention to reduce recurrence fears and anxiety in outpatients previously treated for oral and oral pharyngeal cancer. **Methods:** Trial of 90 new patients randomly assigned to psychological intervention or control (usual-care) condition. Patients completed questionnaires to assess psychological distress and quality of life at 3, 7, 11 and 15 months following treatment for oropharyngeal cancer. Simple randomisation occurred immediately after 7 month assessment. Assessor was blind to group assignment. Intervention was delivered in the interval between 7 and 11 month assessments, and consisted of 6 weekly sessions of individual therapy delivered by trained specialist nurse following standardised manual (named AFTER). **Results:** Three patients were excluded prior to randomisation. The remaining 87 were randomised; 53 in the intervention arm and 34 in the control arm. Overall 10 patients were lost. Change score differences of groups between 7 and 11 month assessments showed reduction in fears of recurrence, anxious preoccupation with cancer ($p < .05$) but not general anxiety and depression. Some evidence of indirect effects on longer term fears of recurrence was found. **Conclusion:** Psychological intervention for fear of recurrence in the first year following treatment conferred a small benefit.

Key Words: recurrence fears, anxiety, depression, oropharyngeal cancer, psychological intervention, randomised controlled trial, head and neck cancer

INTRODUCTION

Patients treated for cancer live with the fear that their disease could recur and possibly become unmanageable and life-threatening (Sanders and Kardinal, 1977). When patients who had been treated recently for head and neck cancer were asked systematically about their concerns, the foremost concern was fear of recurrence (Rogers *et al.*, 2009). Though, the risk of recurrence is an important issue for patients, this concern is not always immediately obvious to the clinician (de Swann, 1990). There are several explanations for this. Patients may prefer to keep recurrence concerns to themselves or deny the possibility of a recurrence. Also staff tend to avoid the topic of recurrence and attend to the specifics of providing medical treatment (Maguire *et al.*, 1996).

Leventhal reported a study of ex-breast cancer patients (4 years clear of the disease) and matched controls (Easterling and Leventhal, 1989). The participants were invited to rate their worries about cancer and perceived risk of cancer. Ratings of the presence of neutral symptoms, such as numbness or tingling sensation, were also collected. The cancer group were found to be more worried about cancer. More importantly it was shown that common, non-cancer like symptoms played a major role in evoking worries about cancer by activating thoughts of risk of malignancy. When ex-patients experience a neutral symptom episode it appears that they inflate their perceived risk of

recurrence that promotes increased worry about cancer.

A report by Hammerlid *et al.* presented two pilot studies of psychological interventions aimed at reducing anxiety and depression in head and neck cancer patients (Hammerlid *et al.*, 1999b). These were essentially feasibility studies and not randomised. Despite having small patient numbers the value of psychological intervention was supported. The first study tested the effect of long-term group psychotherapy with newly diagnosed patients. Of the eight patients that completed the therapy and assessments some improvement in quality of life was found. The greatest improvement (i.e. from diagnosis to one-year follow-up) was emotional functioning in the intervention group compared to the controls. The second study observed 14 patients taking part in a 1 week psycho-educational programme delivered one year following surgery. Positive changes, including a 15% reduction in the proportion of patients scoring >7 on either scale of the Hospital Anxiety and Depression scale, were reported.

The positive benefit of early preliminary work (Hammerlid *et al.*, 1999b) prompted the current investigators to explore further the psychological distress resulting from fears of recurrence (Humphris and Ozakinci, 2006). Subsequent research has shown the preference by patients with head and neck cancer for individual psychological interventions rather than group therapeutic approaches (Semple *et al.*, 2006). A preliminary

study of a cross-sectional sample of oropharyngeal patients (n=100) showed that fears of recurrence strengthened significantly approximately 6 months following treatment. In addition we are aware that fears of recurrence in these patients with this disease are common (Rogers *et al.*, 2010) and tend to resist change (Ghazali *et al.*, 2012). These findings support the development of a systematic psychological intervention called the AFTER (Adjustment to the Fears, Threat and Expectation of Recurrence) (Humphris and Ozakinci, 2008).

The aim was to trial the new AFTER intervention programme comparing results of progress and outcome with standard care. The hypothesis was that patients who attend the AFTER intervention will show lower levels of recurrence fears and reduced psychological distress.

METHOD

Design of study

Four assessment points were planned for the 12 month duration of the study to catalogue the levels of the primary and secondary outcome variables. Each point was spaced evenly, that is at 3, 7, 11 and 15 months following initial treatment. A two-group randomised control trial (RCT) was employed with the AFTER intervention provided in the interval between the 7 and 11 month data collection points. The control arm received usual care. A power analysis was calculated to determine the sample size to detect a difference of psychological state between the two groups. The key outcome variable chosen was the anxiety sub-scale of the Hospital Anxiety and Depression Scale (HADS). Estimates from our pilot study were used. We expected a moderate effect size of 0.5 with a standard deviation = 3.7 and set the alpha level to 0.05 at 80% power. We estimated that 53 patients per group would be required.

The randomisation procedure was managed by the nurse specialist (see procedure). A research assistant completed all assessments of the patient via interview, and was blind to group assignment. Hence assessment was independent from the delivery of the intervention.

AFTER Intervention

The Self-regulation Model of Leventhal was adopted as the overall theoretical basis for the intervention's development (Leventhal *et al.*, 1992). This model includes cognitive, emotional and behavioural reactions to a health-threatening situation. The expression of fears was expected to reduce recurrence concerns. Failure to address personal appraisals of threat tends to increase their intensity and develop case-level psychological disorder. (Parle *et al.*, 1996; Gallagher *et al.*, 2002) The major features of the AFTER intervention are summarised in *Figure 1*. Further details are available (Humphris and Ozakinci, 2008).

Data Collection

The catchment area of the Maxillo-facial Unit at Aintree University Hospital was 2.4 million people. Virtually all patients with oral mucosal cancers in the catchment area were referred centrally to the Unit under the care of three consultants at the time of the study. Joint clinic sessions were held weekly with

Radiation Oncologists and other members of the multidisciplinary team.

Measures

Quantitative Details of diagnosis (confirmed by histology and pathology reports), site, size of primary and treatment methods (surgery, radiotherapy, chemotherapy) were recorded. Gender, date of birth, marital and employment status were collected at the first interview. Any data not collected at initial interview due to administrative error were retrieved from the Unit's database. The following questionnaires were completed by patients at all four assessment points in the same pre-specified order adopting the instructions and response formats published:

1. Hospital Depression and Anxiety Scale (HADS) (Zigmond and Snaith, 1983). This scale is a 14 item measure that has been used extensively in the psycho-oncology area. The scale functions well as a screening tool, and is not distressing to patients on completion. Support for specific assessment of these two psychological constructs has remained firm (Johnston *et al.*, 2000; Kugaya *et al.*, 2000). It has been used in a large Swedish/Norwegian head and neck cancer study reported recently. The Cronbach alphas for the anxiety and depression subscales were 0.89 and 0.82 respectively (n=356). The multitrait analysis also tested discriminant validity and both subscales performed adequately. The investigators regard the measure to possess reasonable psychometric properties for obtaining valid information about mental distress in head and neck cancer populations (Hammerlid *et al.*, 1999a)
2. Worry of Cancer Scale (WOC) (Easterling and Leventhal, 1989). This measure consisted of 3 items that are scored by summing the items together, however to correct for different ranges of the rating scales employed (one 4 point scale and two ten point scales) a transformation procedure was adopted as specified in the original paper.
3. The European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ C30) version 2 consists of 5 functional scales (physical, role, cognitive, emotional, social) as well as a separate global QOL domain (Bjordal and Kaasa, 1992). Three symptom scales measuring fatigue, pain and emesis are included. The functional and global sub-scales were entered into the set of measures for this study. The standard system of transformation to provide scales ranging from 0 to 100 was employed. The head and neck specific module (EORTC QLQ H&N35) (Bjordal *et al.*, 1998) was also adopted. Both assessments were used to check for differences between study groups at the first assessment.
4. The Mental Adjustment to Cancer Scale (MAC) (Watson *et al.*, 1988) was developed to assess a number of broad categories of adjustment to cancer. It consists of 40 items for self-rating. Two studies were reported on 235 and 55 cancer patients respectively, to demonstrate that the scale

possesses reasonable validity (Watson *et al.*, 1988, Greer *et al.*, 1989). The scale has been compared to clinical ratings performed by psychiatrists with some success (Kappa 0.72).

Procedure

The policy of the Unit was to review patients each month in the first year. The research assistant approached all suitable patients when they attended for routine review. Ethical approval for the project was obtained from the local NHS research ethics committee. Written consent was obtained and the first interview was conducted in an interview room adjacent to the clinic. The interview date was noted and placed onto the study database. Patients included in the study were flagged by the Unit. The research assistant inspected the out-patient list provided by the Unit Administrator to match the date of the second interview to the 4 month interval (as per protocol). On completion of the second interview the name of patient was transferred to the specialist nurse. She subsequently made contact with the study administrator who picked the next numbered envelope from the computer-generated random number sequence (independently prepared by the faculty statistician). Patients who were included in the experimental arm of the study were contacted by the specialist nurse to arrange visits at the clinic to deliver the intervention.

An invitation to attend the first intervention session was made. The first session was completed and arrangements for further sessions discussed. Patients were encouraged to bring their spouse or another member of the family to the following session. The patient could choose to bring a confidant if preferred. Following

each session the patient was asked to complete an evaluation questionnaire and a daily diary of anxiety and health concern ratings.

Patients not given the AFTER intervention (i.e. controls) received 'treatment as usual'. This consisted of routine monthly check-up examinations in the out-patient clinic. If a control group patient reported a serious psychological concern (e.g. suicidal ideation) then the clinic coordination nurse informed the relevant health professionals. All patients were interviewed again at 11 and 15 months following initial treatment.

Statistical analysis

Non-parametric tests were performed on the substantive hypotheses to avoid making distributional assumptions about aggregated group data. To prevent extensive multiple significance testing, change scores were calculated between the 2nd and 3rd interviews which was coincident with the introduction of the AFTER intervention in the experimental group. Intention to treat analysis was applied (Hollis and Campbell, 1999). Compliance (only patients with complete data are entered into the analyses) and Last Variable Carried Forward (LVCF) procedures were compared to assess the sensitivity of the results to missing observations. All p values were two-sided. Alpha of 5% was used throughout. A secondary analysis using AMOS (Arbuckle, 2007) was performed using a path analytical approach with maximum likelihood bootstrapping and Bayesian estimation of parameters to assess intervention effects on the fears of recurrence assessments (MacKinnon, 2008).

Figure 1. Features of AFTER (Adjustment to the Fear, Expectation or Threat of Recurrence) Intervention

- Time limited (maximum of six sessions)
- Structured (use of flow diagrams with choice points and prompts)
- Theory driven (cognitive behavioural model based upon self-regulation)
- Patient centred (assessment at first session for tailored intervention)
- Encouragement of the expression of fears of recurrence
- Incorporates care-giver in programme if desired by patient
- Invites the patient to explore illness beliefs and behaviours
- Relaxation practised in session

RESULTS

Adherence to study design

Ninety patients were entered into the study, however three patients were later found on inspection of their pathology reports to have pre-malignant mucosal lesions and were withdrawn from the study. One patient in the control group did not return to the Unit after the first two interviews to complete the last two assessments. Three patients (1 control, and 2 intervention) found completing the full questionnaire arduous and large sections of the questionnaire had to be left uncompleted. Six patients died of recurrence (1 control and 5 intervention). The numbers of patients at each stage of the study are presented in the trial profile (*Figure 2*). The recruitment period was over 34 months (determined by the duration of external funding) and the number of new cancer patients presenting during this time was less than anticipated.

The intervals expressed in days, from baseline interview at 3 months following initial treatment to the three subsequent interviews (i.e. 7, 11 and 15 months) were examined. The means (standard errors) for the control and intervention groups over the four time periods were 84(4), 204(4), 331(6), 456(7) and 86(3), 213(4), 334(5), 462(6) respectively. Analysis of variance confirmed that there was no systematic difference between the groups.

To determine the influence of losing 10 patients from the study over the 12 months follow-up period an analysis to compare those that were successfully followed and those lost to the study during the data-collection was performed. On all baseline variables including demographic, social, medical and psychological there were no statistical differences between the two groups. On psychological variables there was a tendency ($P > .05$) for the patients who left the study to have higher baseline scores on psychological distress and lower quality of life.

The nurse therapist used a checklist to indicate that areas included in the intervention schedule were raised with each patient at attended sessions. An independent assessor confirmed that content of sessions was delivered as intended. Patient self-completed ratings of therapist performance was assessed by three 5 point Likert scales, the sum of which was from 3 (least positive) to 15 (most positive); Cronbach's alpha was 0.77. Items included the extent that the therapist listened, understood and allowed the patient to express themselves. Patients completed these on a question sheet following each session they attended and their data were collected blind to the therapist in sealed, coded and opaque envelopes. Over 75 percent of patients gave positive ratings (12 and above) of therapist performance over all sessions. No obvious changes were discernable across sessions.

Comparison using baseline clinical variables

Patient clinical characteristics were quite well balanced in the two arms (*Table 1*) as shown by the diagnosis, site and size of primary details tabulated. Treatment provided including radiotherapy, chemotherapy and reconstruction was similar across study groups. All patients received surgery. Similar proportions of patients were diagnosed with squamous cell carcinoma in the control and intervention groups (91 vs 83% respectively). The most frequent site of primary tumour was the tongue (41

vs 34%). Sixty-two percent of patients in the intervention group received radiotherapy compared with 41% in the control group. This level of discrepancy was not significant statistically ($p < .1$). The large majority (94%) did not receive chemotherapy. Over 80% overall received reconstruction.

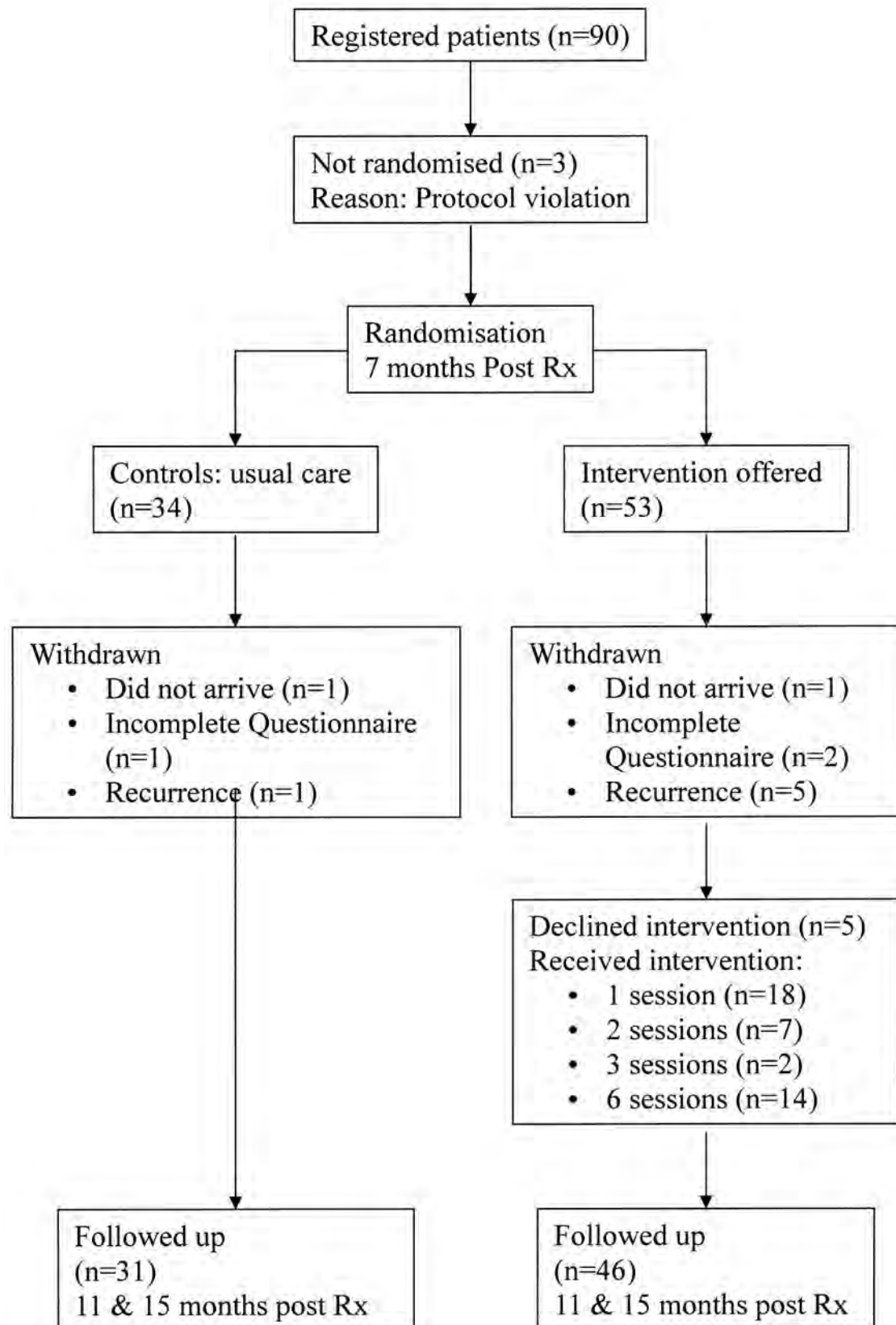
Baseline Quality of Life and psychological distress: comparison of control and intervention groups

The EORTC QLQ C30, and EORTC H&N specific module data were inspected to determine differences between the control and intervention groups at baseline (i.e. 3 months following initial surgery). No statistically significant differences were found. Likewise the psychological measures (HAD, Worry of Cancer scale, MAC scales) were inspected for comparability at baseline between groups. No obvious differences were found.

Participation in AFTER intervention

Fifty-three patients were randomised to the AFTER intervention arm of the study. Following the 7 withdrawals, 5 patients (10.9%, 5/46) declined to take part in the AFTER intervention when informed that they had been randomised to that arm of the investigation. Reasons for not accepting the invitation to participate included: too far to travel or did not want to get involved in detailed discussion ('all that chat'). Of those who took part was 18 patients (39%) attended for a single session, 7 patients (15%) attended for two sessions and only 2 patients (4%) attended three times. Fourteen patients (30%) came for all 6 sessions.

Figure 2. Trial Profile



Cancer recurrence fears

Table 1. N sizes (percentages), unless otherwise stated, of Control and Intervention arms at baseline of demographic, disease site, severity and treatment mode variables

		Group			
		Control		Intervention	
		N	(%)	N	(%)
	Group size	34	(100)	53	(100)
Age	Mean	61		57	
	Median	61		59	
	SD	9		12	
Sex	Male	26	(76)	35	(66)
	Female	8	(24)	18	(34)
Occupation	Non-manual	13	(38)	19	(36)
	Manual	12	(35)	19	(36)
	Not ascertained	9	(26)	15	(28)
Diagnosis	Squamous Cell Carcinoma	31	(91)	44	(83)
	Other Malignancy	3	(9)	9	(17)
Site	Ant. 2/3 tongue	14	(41)	18	(34)
	Cheek Mucosa	0	0	5	(9)
	Gum Unspecified	2	(6)	1	(2)
	Hard Palate	0	0	1	(2)
	Hypopharynx	0	0	2	(4)
	Lower Gum	4	(12)	3	(6)
	Mandible	1	(3)	3	(6)
	Maxilla	2	(6)	2	(4)
	Parotid	0	0	1	(2)
	Retromolar	4	(12)	3	(6)
	Soft Palate	3	(9)	2	(4)
	Tonsil	0	0	1	(2)
	Floor of mouth	3	(9)	8	(15)
	Oropharyngeal	1	(3)	3	(6)
			N	(%)	N
Primary size	0-1	2	(6)	1	(3)
	1-2	6	(18)	6	(11)
	2-3	8	(24)	16	(30)
	3-4	8	(24)	13	(25)
	4-5	8	(24)	10	(19)
	5-6	0	0	5	(9)
	>6.00	2	(6)	2	(6)
Radiotherapy	Yes	14	(41)	33	(62) *
	No	20	(59)	20	(38)
Chemotherapy	Yes	2	(6)	3	(6)
	No	32	(94)	50	(94)
Reconstruction	Yes	26	(76)	46	(87)
	No	8	(24)	7	(13)

* p<.1

Table 2. Summary statistics (Mean, Standard Error and Median) for outcome variables with change in median value between 7 and 11 month data points

	CONTROL				INTERVENTION				P
	3 mths		7 mths		3 mths		7 mths		
	N	34	33	31	31	53	50	46	
ANXIETY (HAD sub-scale) †									
Mean	6.74	5.06	6.68	5.52		6.49	6.10	6.09	5.41
SE	0.75	0.79	1.01	0.79		0.67	0.64	0.70	0.70
Median	5.50	4.00	6.00	6.00	-2.00	5.00	5.00	5.00	4.00
DEPRESSION (HAD sub-scale) †									
Mean	5.44	3.82	4.19	3.74		5.13	4.54	5.22	4.54
SD	0.68	0.56	0.64	0.55		0.52	0.46	0.60	0.58
Median	5.00	3.00	3.00	3.00	0.00	5.00	4.00	5.00	3.50
ANXIOUS PREOCCUPATION (MAC sub-scale) ††									
Mean	22.18	20.64	20.74	19.52		21.72	21.20	19.65	19.39
SD	0.89	0.80	0.70	0.74		0.60	0.67	0.68	0.71
Median	22.0	20.0	21.0	20.0	-1.00	22.0	22.0	20.0	20.0
FEAR OF RECURRENCE (WOC scale) ‡									
Mean	11.24	8.88	11.42	8.29		10.58	9.62	8.67	7.39
SD	1.36	1.33	1.63	1.41		1.04	1.08	0.98	0.95
Median	10.00	8.00	9.00	8.00	-1.00	11.00	10.50	8.00	6.50

* calculated as change score between 11 minus 7 months median values for comparison between intervention and control groups, so that positive difference indicates improvement

† Possible range: 0-21; †† Possible range 9-45; ‡ Possible range 0-30. All scales: a higher score denotes more negative rating.

Outcomes

The primary outcome variable was the change between the 2nd (7 month) and 3rd (11 month) assessments of anxiety subscale of the HAD. The control group increased their anxiety from the median value of 4 to 6, whereas the intervention group remained at 5 on both occasions (Table 2). Analysis of ranked change scores (MWU) was non-significant ($z = 1.09, p = .28$).

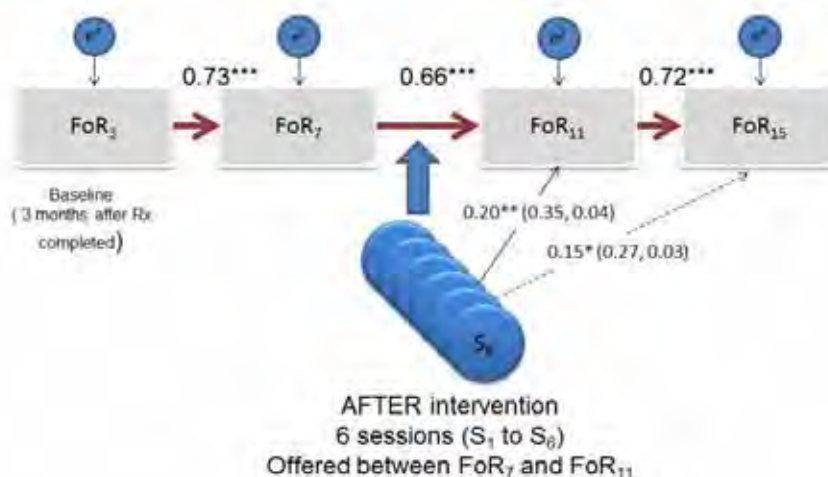
The secondary outcome variables were inspected. Little effect on mood was found. The depression subscale of the HAD showed a single point difference between the change scores for the two groups. The intervention group deteriorated from a median of 4 to 5 over the four month interval in comparison with the control group who showed no change in median (MWU: $z = 0.78, p = .44$). Fear of recurrence as assessed by the Worry of Cancer Scale did improve significantly in the intervention as opposed to the control group (MWU: $z = 2.06, p = .039$). The overall difference was 3.5 points in the median values. Similarly, the anxious preoccupation subscale of the MAC demonstrated a significant difference in the ranked change scores between the two groups amounting to 3 points in the median values in favour of the intervention (MWU: $z = 2.04, p = .042$). Fighting spirit and hopelessness change scores from the subscales of the MAC were found not to be significant between groups (MWU: $z = 1.50$ and 1.29 respectively, p 's $> .10$). LVCF imputation ($n = 87$) analyses were compared with analyses of only those patients who completed the trial ($n = 77$); no substantive differences in results were found ($\pm p$ values of $.01$ only). For exploratory purposes additional comparisons were made between the groups to ascertain if changes noted between 7 and 11 month assessments were

reflected in the 7 and 15 month assessments. No significant findings from 7 to 15 months were found suggesting that the group differences were restricted to the immediate short term follow up and not sustained to the 15 month assessment.

Secondary analysis

A further secondary analysis was performed on the fear of recurrence data. The four ratings of the WoC scale were entered as raw variables into a simple path analytical model as shown in Figure 3. The ratings were specified as having an effect on subsequent ratings as shown by the straight line arrows. Errors were specified on each rating as in conventional path models. The intervention (scored as 1, control scored 0) was introduced as an explanatory dummy variable to explain via direct effects on the 3rd rating (11 months post treatment) and the 4th rating (15 months post treatment). Inspection of direct and indirect effects was made using a Bayesian approach available in AMOS which calculates the 95% confidence intervals and unbiased standard errors. Goodness of fit was inspected. The chi square was non-significant ($\chi^2 = 11.6, df = 6, p = .07$), the Comparative Fit Index (0.97) and Root Mean Square Error of Approximation (0.10) were of levels which indicated reasonable fit (Hu and Bentler, 1999). The Bayesian estimation results showed a significant direct effect (standardised parameter = 0.20; $p = .01$) of the intervention on 1st follow up but not on the 2nd follow up (standardised parameter = 0.06; $p = 0.38$). Inspection of the indirect effect of the intervention on the 2nd follow up was significant (standardised parameter = 0.15; $p < .05$).

Figure 3. Path diagram of Fears of Recurrence (WoC scale) over the study period (FoR3 to FoR15) showing autocorrelations and AFTER intervention input with direct (unbroken arrow) and indirect (broken line) standardised effects with 95% confidence intervals.



DISCUSSION

Main findings

The median level of attendance for the AFTER intervention was two sessions. This compares favourably with other psychological interventions designed for cancer patients particularly as our sample was not selected for psychological distress (Greer *et al.*, 1992). Greer reported a mean attendance of two visits for their experimental sample exploring adjuvant psychological therapy in a mixed cancer group and apart from the obvious difference on focus their study targeted only patients with evidence of psychological morbidity.

The results of the trial indicate that there was no meaningful difference in the changes in anxiety between the intervention and control groups between the 7 and 11 month assessments. Similarly, no discernible difference in mood change was found over the identical time points across groups. However, patients' fears of recurrence and their anxious preoccupations were improved in the intervention group relative to those receiving standard care. Both of these mild effects were not sustained at final follow up.

Statistical considerations

The effects reported for the fears of recurrence (0.5) and anxiety preoccupation (0.7) variables were unchanged when the different approaches to handling missing data were applied. This insensitivity to analytical method provided some reassurance that these findings were robust. The effect sizes were moderate even though the trial was not optimally powered.

The secondary analysis using structural equations proved interesting as the results confirmed the conservative non-parametric methods adopted. The parameter estimates for the effect of the intervention showed a near identical magnitude, if not more positive influence on patients' recurrence fears on the immediate follow up assessment. Of interest particularly was the demonstration that the effect of the intervention did not directly influence the final follow up assessment but had an indirect effect, that is a longer term effect was mediated by the immediate follow-up recurrence fears (MacKinnon, 2008). It is possible that the use of change scores to compare intervention and control groups does not reflect the improvements in recurrence fears and that the intensive analytical approach which uses all available information produces a more powerful and considered test. Caution needs to be applied to both statistical approaches. It is recognised by the authors that the study was underpowered and that further controlled trials are required.

Implications of study

Although the trial was not optimal from a sample size consideration, some interesting effects were noted, especially in the short term. The trial has a number of lessons for future interventions of this type.

First, a number (n=5) of intervention patients who had attended all six sessions reported to the nurse therapist (and written in patient records) at the conclusion of the intervention that they would have preferred to have received the sessions earlier in their recovery and proposed the period soon after three months following initial medical/surgical treatment(s). This confirms

another report recommending the timing of introducing a formal psychological intervention for cancer patients soon after the first quarter post treatment (Hammerlid *et al.*, 1999b). A recent study commends the use of pre-treatment support following diagnosis (Horney *et al.*, 2011). Hence, the issue of timing any intervention with this group of patients is a very important consideration. Secondly, the intervention was not targeted at patients who showed evidence of high levels of recurrence concerns. Fifteen percent (7/46) of the intervention group at 7 months assessment scored recurrence fears at minimum level (comparable figures for the control group were 19%, 6/31). A strong case can be made to target the intervention at patients with high levels of fear or concern on the grounds of efficiency (Luckett *et al.*, 2011) and also on the basis that in this sub sample of patients avoidance coping is frequently employed which unwittingly reinforces fear levels (Elani and Allison, 2011). Finally, the results of this research strengthen the need to investigate further the development of specific cancer concerns on the mental health status of the patient (Ghazali *et al.*, 2012).

In conclusion, a clinically significant effect of a structured psychological intervention on patients with oral and oropharyngeal cancer was demonstrated by a short-term reduction of recurrence fears and anxious preoccupations about cancer.

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