Title: A Systematic Review: The effects of orientation programs for cancer patients and their family/carers

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Abstract

Objectives: To assess the effects of information interventions which orient patients and their carers/family to a cancer care facility and the services available within the facility.

Design: Systematic review of randomised controlled trials (RCTs), cluster RCTs and quasi-RCTs.

Data sources: MEDLINE, CINAHL, PsycINFO, EMBASE and the Cochrane Central Register of Controlled Trials.

Methods: We included studies evaluating the effect of an orientation intervention, compared with a control group which received usual care, or with trials comparing one orientation intervention with another orientation intervention.

Results: Four RCTs of 610 participants met the criteria for inclusion. Findings from two RCTs demonstrated significant benefits of the orientation intervention in relation to reduced levels of distress (mean difference (MD) -8.96, 95% confidence interval (95%CI) -11.79 to -6.13), but non-significant benefits in relation to the levels state anxiety levels (MD -9.77 (95%CI -24.96 to 5.41). There are insufficient data on the other outcomes of interest.

Conclusions: This review has demonstrated the feasibility and some potential benefits of orientation interventions. There was a low level of evidence to suggest that orientation interventions can reduce distress in patients. However, other outcomes, including patient knowledge recall/ satisfaction, remain inconclusive. The majority of trials were subjected to high risk of bias and were likely to be insufficiently powered. Further well conducted and powered RCTs are required to provide evidence for determining the most appropriate intensity, nature, mode and resources for such interventions. Patient and carer-focused outcomes should be included.

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updated as new evidence emerges and in response to feedback, and The Cochrane Library should be consulted for the most recent version of the review.

Conflict of interest

None declared

What is already known about the topic?

- Patients who are new to a cancer care facility and cancer treatment are often stressed and anxious due to a number of reasons such as recent cancer diagnosis, uncertainty about treatment, and unfamiliarity with the environment and care providers.
- Information needs exist across the continuum of cancer care for patients and family/carers, but information needs of patients and carers are often not well met.
- A possible strategy for optimising information giving is orientation programs; however, the effectiveness of orientation programs for patients with cancer and their carers remain unknown.

What this paper adds

- Orientation programs can provide standard structured information giving to patients and their caregivers, and are feasible in ambulatory cancer care settings.
- There was low evidence to suggest that orientation programs can improve distress in cancer patients at the beginning of their journey in a cancer care facility.
- Methodology of existing studies is weak and there is very limited information relating to costs, levels of satisfaction, service use and outcomes of relatives/carers.

1. Introduction

There is consensus that information needs exist across the continuum of cancer care for patients and family/carers (Rees and Bath, 2000, Rutten et al., 2005, Rutten et al., 2006); However, we know little about the best timing for providing specific information. The initial visit of a cancer patient to the oncology centre can be especially distressing (Mohide et al., 1996). Factors contributing to this anxiety and distress may include recent cancer diagnosis, uncertainty about treatment, needle phobias, concerns about treatment length, and unfamiliarity with the environment and care providers (Carelle et al., 2002). It has been demonstrated that information provision can reduce anxiety and mood disturbances in cancer patients (Mills and Sullivan, 1999).

While much attention has focused on preparing cancer patients for threatening medical treatment such as chemotherapy and radiotherapy (Dunn et al., 2004, Schofield et al., 2008), information in relation to the actual facility and supportive services available can easily be left out of structured information-giving interventions. Therefore, the intervention under consideration is any program or strategy that orients patients to a cancer care facility; that is, any intervention aiming to familiarise patients and their carers by giving them information about the cancer care facilities and services available to them therein (e.g. opening hours, role of the healthcare team). The introduction of the healthcare team to patients has become particularly important with the increasing size of the multidisciplinary team over the past decade.

Information provision may reduce distress by enhancing patients' sense of control. An enhanced sense of control, in turn, relieves anxiety and enhances management of illness (Chelf et al., 2001). Specifically, evidence has suggested that providing cancer and surgical

patients with information about the procedure they are about to undergo can significantly reduce their emotional distress and improve their psychological and physical recovery (Jacobsen and Jim, 2008, Sjöling et al., 2003). Other benefits related to the provision of information for cancer patients may include increased patient satisfaction (Loiselle and Dubois, 2009); and improved communication with family members (Rutten et al., 2006).

Information is important for cancer patients and their family/carers throughout the continuum of cancer care. Although the benefits of information have been emphasised, patients and family members often report that their information needs are not sufficiently met (Champman and Rush, 2003, Rees and Bath, 2000). Orientation programs aim to address information needs at the start of a person's dealings with a cancer care facility. These programs may consume considerable resources particularly in large cancer facilities where there may be hundreds of new patients per year, but the extent of any benefit is unknown. Indeed, we acknowledge that it is possible that too much information may be undesirable and not useful in new cancer patients (Dubois and Loiselle, 2008). We also acknowledge that this review is narrowly focused as we are considering the intervention at a particular time point (before the first cancer treatment). However, meeting information needs at different stages is important in cancer care.

2. Aims

To assess the effects of information interventions which orient patients and their carers/family to a cancer care facility and the services available within the facility.

3. Methods

3.1. Criteria for inclusion

We included randomised controlled trials (RCTs), cluster RCTs and quasi-RCTs, in which the effect of an orientation intervention could be compared with a control group which received usual care, or with studies comparing one orientation intervention with another orientation intervention. Participants were new oncology patients and their family/carers who were about to receive treatment or care in a cancer centre or a cancer department of a general medical facility. This systematic review only considered adults (18 years old and above) due to the different nature of information needs in paediatric patient populations. Participants could have had any type of cancer at any stage, and scheduled to receive inpatient or outpatient treatment.

The interventions had to have the primary goal of orienting patients and their carers to a cancer care facility or services. Content had to include information about the care facility and services available in the facility (such as information about the healthcare team) as the core component of the intervention. The intervention could be delivered by healthcare professionals, administrative staff, volunteers or a combination. It could be delivered in any mode or a combination of modes, including individual face to face; group intervention (including family-based interventions); telephone; video or audio materials; computer based/technology based (e.g. internet), and written materials.

The intervention could be a single intervention with the primary goal of orientation, or part of a complex intervention. If part of a complex intervention, it must have been possible to separately identify the effects of the orientation intervention. The orientation intervention could be compared to usual care or compare different modes and intensities of the

intervention. Intensities may be measured by duration of the intervention or number of components involved in the intervention. Based on the nature of the orientation, we excluded interventions which were delivered after the first cancer treatment had commenced. This was to avoid the inclusion of educational interventions during the course of treatment. The intervention may have been presented in any setting, for instance in hospital or at home.

The specified outcomes were knowledge and understanding, health status and wellbeing, evaluation of care, harms, communication, skills acquisition, behavioural outcomes, service delivery level and health professional outcomes measured by any instrument used by the trial investigators (shown in Box 1).

Box 1. Inclusion criteria by types of outcome

Consumer-oriented outcomes:

- Knowledge and understanding (e.g. knowledge acquisition; retention of information; ability to recall information);
- Health status and wellbeing (e.g. physical or psychological health, coping or quality of life);
- Evaluation of care (e.g. satisfaction of patients and carers measured by any instrument used by the trial investigator);
- Harms (any adverse effects caused in the patients);
- Communication e.g. improved communication or relationship with provider;
- Skills acquisition e.g. self-care skills;
- Behavioural outcomes e.g. adherence to visits/ adherence to treatment.

Service delivery oriented outcomes:

- Service delivery level e.g. cost of orientation interventions, service use;
- Health professional outcomes e.g. satisfaction.

3.2. Identification of studies

We searched the following electronic databases: Cochrane Central Register of Controlled Trials (CENTRAL) on The Cochrane Library (Issue 2, 2011), MEDLINE Ovid SP (1966 to 23/06/2011), EMBASE Ovid (1988 to 23/06/2011), CINAHL EBSCO (1982 to 23/06/2011), and PsycINFO Ovid (1967 to 23/06/2011). There was no restriction on language.

3.3. Study screening

Two review authors pre-screened all search results (titles and abstracts) for possible inclusion, and those selected by either or both authors were subject to full-text assessment. Two review authors independently assessed the selected articles for inclusion. Discrepancies were resolved by consensus.

3.4. Data extraction

Data were extracted by two reviewers independently onto a pre-designed, piloted form. Data were collected on participants, intervention (including content and format of interventions, setting and delivery provider; delivery of any co-interventions, timing of intervention, the use of standardised protocols, training of the intervention provider, components of intervention, theoretical basis of intervention if stated), measurement tools, outcomes, analysis and results. These data are summarised in Table 1. Any discrepancies, errors or inconsistencies were resolved by consensus between the two authors.

3.5. Study quality assessment

The risk of bias of included studies were assessed and reported in accordance with the guidelines in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins and Green, 2008), which recommends the explicit reporting of individual domains including sequence generation, allocation concealment, blinding of participants, personnel and outcome assessors (assessed for each main outcome or class of outcome), incomplete outcome data (assessed for each main outcome or class of outcome), selective outcome reporting, and other sources of bias.

This led to an overall assessment of the risk of bias of the included studies (Ryan et al., 2007). We assessed each risk of bias items as either low, unclear or a high risk of bias based on the trial reports and/or additional information provided by trial authors.

Two review authors independently assessed the risk of bias in included studies, with any disagreements resolved by discussion and consensus. We contacted trial authors for additional information about the study methods as necessary. We incorporated the results of the risk of bias assessment into the review through narrative description and commentary about each of the items mentioned.

3.6.Data analysis

The mean differences (MD) and associated 95%CI were reported for continuous outcomes. Where studies were sufficiently similar in terms of population, inclusion criteria, interventions and/or outcomes (including the time(s) at which these are assessed), we pooled the data statistically using meta-analysis. We performed formal fixed-effects model meta-

analysis, which reported pooled MDs (continuous variables using the same scale). Random effects model meta-analysis was carried out if substantial heterogeneity was detected among trials. The decision to carry out meta-analyses was made by consensus of all authors. We also used narrative review to present the results of the studies as relative and absolute percentage change and direction of effect for each of the outcomes.

4. Results

4.1. Search results

Study screening of 14,319 citations identified a total of 21 articles that were potentially relevant, and the full texts were retrieved. Of these 21 studies, four studies met the inclusion criteria (Burish et al., 1991, Hoff and Haaga, 2005, McQuellon et al., 1998 and Mohide et al., 1996) and 17 studies that did not meet the inclusion criteria were excluded. All trial authors were contacted and asked if they were aware of any other studies. No extra studies were identified from this process. A flow chart detailing the identification of studies can be found in Fig. 1.

Fig. 1. Flow chart of study selection process

4.2. Interventions

All interventions in the four studies were orientation programs comprising a combination of eight different components, none of which were common to all studies. These components included information about the health care team (Hoff and Haaga, 2005, McQuellon et al., 1998, Mohide et al., 1996), a clinic tour (Burish et al., 1991, Hoff and Haaga, 2005, McQuellon et al., 1998), information about the actual facility (e.g. map, parking and opening hours) (Hoff and Haaga, 2005, McQuellon et al., 1998, Mohide et al., 1996), description of clinical procedures (Burish et al., 1991, McQuellon et al., 1998), information about supportive services available in the cancer centre and provided by external organisations (McQuellon et al., 1998), a question and answer session (Burish et al., 1991, Hoff and Haaga, 2005, McQuellon et al., 1998) and treatment related information (Burish et al., 1991, Hoff and Haaga, 2005).

Two formats/ modes were used in the interventions; written materials (used in all studies) and audiovisual equipment (i.e. DVD/ videos) (used in one trial) (Burish et al., 1991). In terms of delivery methods, the interventions were delivered either via mail (Mohide et al., 1996) or face to face (Burish et al., 1991, Hoff and Haaga, 2005, McQuellon et al., 1998). Table 2 illustrates the components, materials and delivery methods used in the included studies.

Table 2. Components, modes and delivery methods of the orientation interventions in the included studies (A tick in the appropriate boxes represents the components, modes and delivery methods used.)

<i>Study</i>	Components							
	Information of health care team (e.g. roles, contact numbers)	Clinic tour	Information of the facility (e.g. map, parking, opening hours)	Description of clinical procedures	Information of supportive services	Resources available after treatment	Question and answer session	Treatment related information (e.g. coping strategies, understanding chemotherapy/radiotherapy)
Burish 1991		√		√			√	√
Hoff 2005	√	√	√			√	√	√
Mohide 1996	√		√		√			
McQuellon 1998	√	√	√	√	√		√	

Providers of the intervention

One trial did not use a delivery provider, but used materials in an information package (Mohide et al., 1996). Another trial used oncology nurses who worked in the department to deliver their program, but did not describe their qualifications (Hoff and Haaga, 2005). In another trial, an oncology counsellor was used (rotated by three Masters level counsellors, one doctoral student and one PhD psychologist) (McQuellon et al., 1998). Burish and colleagues described the person who delivered the intervention as "the therapist" without further qualification (Burish et al., 1991). None of these studies mentioned use of a script or a standard protocol to ensure consistency between interventions delivered by different people.

Timing of the intervention

In one trial, participants were mailed the orientation package before their first appointment at the cancer care centre (Mohide et al., 1996). For the face-to-face sessions in the McQuellon trial, participants received the interventions during their first appointment at the cancer care centre before they saw the physician (McQuellon et al., 1998). Participants of the Burish trial received their intervention immediately before their first chemotherapy session (Burish et al., 1991). The participants of the Hoff trial received their intervention on the day of their first meeting with their physicians, only if they were recommended for radiotherapy (Hoff and Haaga, 2005).

Intensity of intervention

Although interventions of all included studies involved written materials, no studies reported the number of pages, the size of prints in these materials, the time patients took to understand the materials, or how many times patients need to refer to the information. For this reason, the intensity of intervention could only be measured by the length of time for reading the

materials or watching the videos. For the studies that used face-to-face contacts, video, or a combination of both, the interventions took 90 minutes (Burish et al., 1991) and 15-20 minutes (McQuellon et al., 1998). The Hoff trial and the Mohide trial did not report on the duration the intervention required (Hoff and Haaga, 2005, Mohide et al., 1996).

4.3. Methodological quality of studies

All possible attempts were made to contact authors to seek more information about any unclear reporting in relation to risk of bias in the included studies. All authors replied and were able to give information only to some of the questions, but not all that were asked by the review authors.

Included studies used random allocation to allocate participants to the treatment groups. McQuellon and colleagues generated the allocation sequences using random number tables. Cancer populations are often heterogeneous and therefore can have very different treatment experience and treatment regimens across patients with different diagnoses (McQuellon et al., 1998). Therefore, stratification is an appropriate strategy in this type of trial. The Burish and Mohide trials mentioned that participants were assigned using stratified random assignment (Burish et al., 1991, Mohide et al., 1996). The Mohide trial stratified the random allocation by disease site: breast, gynaecological, lung or prostate (Mohide et al., 1996), and it was not clear how the Burish trial stratified the random assignment (Burish et al., 1991).

With regards to allocation concealment, three studies (Burish et al., 1991, Hoff and Haaga, 2005, Mohide et al., 1996) did not report on the mechanism used to implement the random allocation sequence, nor did they describe any steps taken to conceal the sequence until

interventions were assigned. The trial authors of the McQuellon trial confirmed that the person who phoned to recruit patients was not aware of the allocated group.

Blinding of the intervention was not possible in these trials. It was also not possible to blind outcome assessment in the Hoff trial, because self-reported questionnaires were used (Hoff and Haaga, 2005). The remaining studies did not mention if those conducting the outcome assessment were blinded.

4.4.Effectiveness of interventions

4.4.1. Knowledge and understanding

Two trials incorporated treatment related information into their orientation interventions (Burish et al., 1991, Hoff and Haaga, 2005), and reported outcomes of knowledge in relation to chemotherapy (Burish et al., 1991) and radiotherapy (Hoff and Haaga, 2005). The Burish trial reported that patients who received their orientation program rated "the explanation they received about the risks and benefits of chemotherapy to be significantly better" ($p < 0.05$), and were significantly "more knowledgeable about the side effects of their specific treatments" ($p < 0.002$) and were significantly "more knowledgeable about cancer and chemotherapy in general" ($p < 0.001$), compared with controls. However, the mean scores of these outcomes and number of participants analysed were not reported by the trialists (Burish et al., 1991). The Hoff trial reported non-significant differences in the patients' and relatives' knowledge of radiotherapy between those who received the orientation program and those who did not (MD: -0.18, 95%CI: -1.02, 0.66) (Hoff and Haaga, 2005).

Fig. 2. Forest plot of comparison: Effects of intervention to reduce anxiety compared with control (outcome: STAI-S)

4.4.2. Health status and wellbeing

Psychological outcomes

State anxiety

State anxiety represents the level of anxiety at the time of completing the questionnaire, while the level of trait anxiety represents anxiety in general. For state anxiety, two trials (Hoff and Haaga, 2005, McQuellon et al., 1998) with 95 participants in the orientation program group and 93 participants in the usual care control group compared state anxiety in the two groups as measured by the State Trait Anxiety Inventory-State (STAI-S) score. There was heterogeneity among trials ($\chi^2=12.27$, $p=0.0005$; $I^2=92\%$). Random-effects meta-analyses suggest a non-statistical significant difference ($p=0.21$) between the orientation and control group, with the orientation program group associated with reduced state anxiety (MD = -9.77, 95% CI: -24.96 to 5.41) (see Fig. 2.).

Trait anxiety

For trait anxiety, one trial (McQuellon et al., 1998) with 55 participants in the orientation program group and 55 participants in the usual care control group compared trait anxiety in the two groups as measured by the State Trait Anxiety Inventory-Trait (STAI-T) score. There was a statistical significant difference ($p=0.013$) between the orientation and control group,

with the orientation program group associated with reduced trait anxiety (MD =-4.70, 95%CI: -8.37 to -1.03).

General anxiety

For general anxiety, one trial reported no significant difference between those who received the orientation interventions and those who did not, as measured by Brief Symptom Inventory (BSI) - Anxiety: (MD=0.2, 95%CI: -3.07, 2.67) (Mohide et al., 1996).

Distress

For distress, two trials (Hoff and Haaga, 2005, McQuellon et al., 1998) with 95 participants in the orientation program group and 93 participants in the usual care control group compared distress in the two groups as measured by the Profile of Mood State-Total Mood Disturbance (POMS-TMDS) score. There was no detected heterogeneity among the two trials ($\chi^2=0.94$, $p=0.33$; $I^2=0\%$). Fixed-effects meta-analyses suggest a statistically significant difference ($p<0.001$) between the orientation and the control groups, with the orientation program group associated with reduced distress (MD =-8.96, 95%CI: -11.79 to -6.13) (see Fig. 3.).

Another trial {Mohide, 1996 #31} with 102 participants in each group (New Patient Information Package (NPIP) vs control) reported no difference between the two groups in terms of emotional distress as measured by the General Severity Index (GSI) (MD 0.20, 95%CI -2.34 to 2.74).

Depressive symptoms

Of the four studies, three measured depressive symptoms (Burish et al., 1991, McQuellon et al., 1998, Mohide et al., 1996). Both the Burish and McQuellon trials reported positive

benefits of their orientation programs on depressive symptoms. The McQuillon trial measured depressive symptoms in 135 patients with the Centre for Epidemiologic Studies-Depression Scale Screener (CES-D). For those with positive depressive symptoms as per the CES-D screener, there was a significant difference between those who received their orientation program and those who did not ($p < 0.001$). However, the trialists did not report mean scores, standard deviations or the number of patients. Burish and colleagues also reported a "significant" positive effect of their intervention on depressive symptoms as measured by the Multiple Affect Adjective Checklist (MAACL) (Burish et al., 1991). However, the authors did not report on the depression scores, the number of patients analysed, nor the p values. The Mohide trial ($n=304$) compared the effects of the New Patient Information Package (NPIP) with another less intense intervention (mini-NPIP); and there was no difference in the depression score after intervention (MD=-0.4, 95%CI:-2.95 to 2.15) (Mohide et al., 1996).

Fig. 3. Forest plot of comparison: Effects of intervention to reduce distress compared with control (outcome: POMS-TMDS)

Coping

One RCT (Burish et al., 1991) measured coping as an outcome measure. The Burish trial reported that their orientation program yielded a positive effect on coping in general ($p = 0.03$). In particular, working patients who received the intervention reported their disease and its treatment (i.e. chemotherapy) interfered significantly less with their daily lives and their

ability to work than those who did not ($p<0.01$). However, the mean scores of these outcomes and number of participants analysed were not reported by the trialists.

Physiological outcomes and symptoms

The Burish trial reported that there was no difference in physiological measures (i.e. systolic and diastolic blood pressure and pulse rate). However, significant differences were found between those who received their orientation intervention and those who did not in "anticipatory nausea" ($p=0.02$). The definition of "anticipatory nausea" was not stated. The trialists also did not report mean scores, standard deviations and the number of participants analysed for further analysis in this review.

4.4.3. Evaluation of care

Satisfaction

One trial measured satisfaction (Hoff and Haaga, 2005). The Hoff trial of 51 patients and 34 relatives/friends reported significant difference between patients who received the orientation program and those who did not ($p<0.05$). However, no significant effect was observed in the relatives. This trial did not report the satisfaction score, the standard deviation and the number of participants analysed for further analysis in this review.

4.4.4. Harms

None of the four included trials measured harms, nor did they report any adverse events associated with the interventions.

4.4.5. Communication

One trial of 200 participants investigated the effect of an orientation program on knowledge in relation to the cancer care facility (McQuellon et al., 1998). At one week follow up, patients were asked to recall whether they had received particular types of information about the cancer care service (yes/no). Significantly higher percentages of participants in the intervention group reported that they received information about: hours clinic open (23% vs 97%), clinic phone number (34% vs 95%), reaching someone after hours (23% vs 88%), financial counselling (6% vs 69%), how to contact business office (10% vs 85%), the cancer patient support program (20% vs 92%), coping with cancer meetings (7% vs 83%), support for family (4% vs 84%), support groups (11% vs 85%), managing appearance changes (3% vs 69%), getting around the hospital (13% vs 88%), resource room (13% vs 94%), organisations that can help (0% vs 99%), eating facilities (13% vs 89%), tour of clinic (7% vs 98%), health care team (16% vs 88%), reasons for waiting (16% vs 87%), reasons for not seeing a doctor (7% vs 76%), writing down questions (10% vs 91%) and important facts (13% vs 92%) at follow-up, as compared to the control group (all $p < 0.001$). However, number of participants analysed was not reported by the trialists.

4.4.6. Service delivery oriented outcomes

Cost

Only one trial compared the cost associated with the two orientation information packages (NPIP vs mini-NPIP) (Mohide et al., 1996). The cost of NPIP and the mini-NPIP were \$44,650 per year and \$19,900 per year in Canadian dollars respectively. The difference between the two packages was approximately \$24,750 in Canadian dollars. There was no difference in any of the outcomes between using higher cost package (NPIP) or lower cost package (mini-NPIP).

Service use

The McQuellon trial reported that a higher percentage of patients who received the orientation program met with a counsellor ($p < 0.001$), accessed information from the clinic resource room ($p < 0.05$) and had discussed cancer with the local "cancer info service" ($p < 0.001$). Only p values were reported.

5. Discussion

This is likely to be a complete systematic review, as it is based on a comprehensive search strategy, without language restrictions. Convincing, high quality evidence for any of the orientation interventions was lacking, so answers to the review questions remain ambivalent. All trials targeted adult participants newly registered to a cancer care service and their families/carers. Most of our proposed outcomes were assessed by at least one of the included trials. However differences in outcome measurements, program components and poor reporting, made combining data problematic for a number of primary and secondary outcomes. Family members/carers were invited to participate in the interventions in a number of studies but included as participants in only one trial, making it difficult to evaluate the effectiveness of this approach. Some important outcomes including levels of self-efficacy, knowledge retention and harms were not measured at all.

All of the included trials were conducted in North America; this imbalance may influence the overall applicability of evidence. It would be useful to see similar studies from other health care systems to test the robustness of results from this review. Further, the costs of such interventions also need to be considered. Only one of the four included studies had an

economic evaluation. In the current climate of increasing demand of cancer care and financial constraint, the costs of interventions should not be ignored.

The most appropriate timing, for providing the intervention, also remains unclear. Two approaches were used in the included trials; either before the first visit or at the first visit to the cancer care facility. Though the two timing schemes were not applied or tested within the same trial. It seems logical to provide information before the first visit, so patients are aware of the setting, the facilities and what they may expect during the first visit. The other issue to consider, when deciding about the most appropriate time to provide an orientation intervention is that there may be two groups of patients involved; those with a confirmed cancer diagnosis and those who do not yet have a confirmed cancer diagnosis. One program may suit both groups but their needs may well be different.

6. Conclusions

This review has demonstrated the feasibility and some potential benefits of orientation interventions for newly registered patients to a cancer care service. There was a low level of evidence suggesting that orientation interventions can reduce distress in patients. However, most of the other outcomes including patient knowledge recall and patient satisfaction remain inconclusive. The majority of studies were subjected to high risk of bias and were likely to be insufficiently powered. Further well conducted and powered RCTs are required to provide evidence for determining the most appropriate intensity, nature, mode and resources for orientation interventions. Patient and carer-focused outcomes should be included.

6.6.1. Implications for education practice and research

The review has demonstrated the feasibility of designing and conducting structured orientation programs for patients who are newly registered in a cancer care centre. The aim of orientation programs is to improve certain outcomes at the beginning of the patients' and their family members'/carers' experience with the cancer care centre. Structured orientation programs may be useful in providing important information to patients, with potential benefits of improving distress and trait anxiety in patients. However, there is insufficient evidence to inform the best way to deliver program information (audio visual or face to face). Nor is it clear if a higher intensity/ cost intervention is superior to a lower intensity/cost intervention. Although there were modest effect sizes for some of the outcomes such as trait anxiety, and distress favouring orientation programs, these were limited, so recommendations cannot be made.

The cancer care community and their patients need well-designed, high quality trials to make informed decisions about the emotional, clinical and economic usefulness of orientation programs in this specialty area. Further sufficiently powered and well conducted trials are required to provide evidence to guide program development in terms of intensity, nature, mode of delivery and the effectiveness of resources used in information giving at an early point of contact. Future trials should test interventions that can achieve maximum patient outcomes with the least intensity programs, and to determine the appropriate timing to provide orientation. Important outcomes such as knowledge acquisition; retention of information; ability to recall information, anxiety, satisfaction, quality of life, cost and harms should be included. We also suggest for measurement at longer time points beyond treatment (e.g. 1 month, 6 months and 12 months) to be included in future trials. Further, the effects of

orientation programs should also be tested in countries other than North America, where the healthcare systems are different.

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