<table>
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<tr>
<th>Author</th>
<th>Year (Reference)</th>
<th>Type of End Date</th>
<th>Other Reviews</th>
<th>Description of Subjects Included</th>
<th>Treatments Assessed*</th>
<th>Principal Outcomes Assessed*</th>
<th>Intervention Duration and Timing of Outcomes</th>
<th>Results</th>
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<tr>
<td>Higginson et al., 2000</td>
<td>(25)</td>
<td>February to June 1999</td>
<td>72 citations including 5 systematic reviews, and 67 reports of 43 unique studies; 16 of 30 studies identified through reviews were randomized and controlled, as were 4 additional studies.</td>
<td>Intervention studies and analysis of sites of death overlap completely with Gomes and Higginson’s (80) update. Gysels and Higginson’s (27) review addressed a much broader spectrum of issues within cancer care, unlike this one that focused on end stage, not specific to cancer.</td>
<td>Patients cared for by palliative care services (home care, hospital-based, and hospice in Europe, Australia, and the United States). Any intervention of more than 1 individual, at least 1 of whom has specialist training, or who spends all their working time in palliative care, in a hospital, home or community setting, or in a combination of these.</td>
<td>Patient and caregivers quality of life, symptoms, site of death, healthcare use and costs.</td>
<td>Short-, intermediate-, and long-term interventions</td>
<td>This review focused uniquely on a meta-analysis and review of the clinical effectiveness of palliative care teams.</td>
</tr>
<tr>
<td>Carr et al., 2002 (26)</td>
<td>Symptoms: pain and depression</td>
<td>Systematic review</td>
<td>June 2001</td>
<td>34 RCTs of pain interventions</td>
<td>N/A</td>
<td>The pharmacologic and medical therapies for pain and depression are not addressed elsewhere. The findings about the effectiveness of psychosocial and educational changes are also addressed within Gysels and Higginson’s (27) systematic review of supportive cancer care.</td>
<td>Patients with cancer</td>
<td>Any treatment for cancer-related pain and depression</td>
</tr>
</tbody>
</table>

Outcomes were extracted from all studies considered by the review. Patient outcomes were characterized as pain, other symptoms, quality of life, satisfaction, referral to other services, and therapeutic interventions. Twenty studies evaluated pain as an outcome, and standardized mean differences (SMD) were determined. The mean SMD was 0.41 (95% CI, 0.11 to 0.63) in favor of the effect of palliative care teams in reducing pain. 11 controlled trials of the effect of medications on depressive symptoms in cancer patients were identified, (6 of which were randomized) 1 of which addressed depression prevention, and 1 of which was a pain study that included a depression outcome. All studies of antidepressants for 6 or more weeks demonstrated efficacy. 2 studies which were limited to 4 week trials did not. Hundreds of studies addressed psychosocial interventions for depression, so the review only summarized meta-analyses. Psychosocial studies, including group or individual counseling, education, and social support strategies were effective.
### Symptoms:

- Pain, dyspnea, and depression

### Interventions

| Review Authors | Year | Symptoms: | Systematic review | March 2003 | 317 studies (22 overlapped multiple review domains), many studies addressed symptoms, although the review did not present results specifically by symptoms. | Partial overlap with other earlier reviews that covered aspects of care planning or support for caregivers of patients with cancer. This review was much more comprehensive and included a discussion of other reviews and meta-analyses relevant to the topic. | Patients with cancer | Any intervention to improve supportive or palliative care. Review examined diverse system interventions to improve aspects of supportive or palliative cancer care. These interventions included care coordination, promoting user involvement, face-to-face communication, improving information, psychological, spiritual, and social support, generalist and specialist palliative care delivery, rehabilitation, complementary and alternative therapies, and caregiver support, including bereavement. | Symptoms, quality of life, patient, caregiver, provider, integration with care, knowledge, place of care, and site of death; and utilization | Short-, intermediate-, and long-term interventions | The review covered a broad range of interventions, especially those related to the clinical organization of care to improve supportive care for cancer, although symptoms were not a specific aim of the review. |
|---|---|---|---|---|---|---|---|---|---|---|
| Pan et al., 2000 (28) | Symptoms: pain and dyspnea | Systematic review | 1968 | 11 RCTs, 2 nonrandomized, controlled trials | 8 case reports | Low-quality studies overlapped with Lee et al. (31) | Patients receiving palliative or terminal care. | Complementary and alternative interventions for pain and dyspnea. | Pain and dyspnea | Not reported |
| Wilson, 2004 (29) | Symptom: pain | Systematic review | September 2003 | 24 studies, designs not reported. | Designs not reported. | Intervention studies covered overlap almost completely with previous reviews by Higginson et al. (25) and Gysels and Higginson (27). | Patients with serious, chronic, or terminal illness | Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings. | Pain and other symptoms | Short-, intermediate-, and long-term interventions |
| Knots et al., 2005 (30) | Symptoms: pain and depression | Systematic review | June 2004 | 34 RCTs and controlled clinical trials | N/A | None | Patients with cancer (16 addressed breast cancer, 22 addressed active treatment, and 12 post-treatment phase) | Physical exercise | Physical function and quality of life, including symptoms | 5 wk–12 mo |

The review underscores the relevance of these approaches for improving symptomatic care, although there was mixed evidence in favor of any particular approach with regard to pain or dyspnea. The review examined social support and spiritual care. Two systematic reviews and 15 studies, including 8 high-quality, RCTs addressed social support. These studies all highlighted the importance of bridging professional roles and multidisciplinary efforts to improve social support. Fifteen studies within the overall review examined various interventions with behavioral components that were generally effective for depression. All studies of spiritual support that were identified were low quality, pointing out the need for additional research.
Lee et al., 2005 (31)  
Symptom: pain  
Systematic review  
February 2004  
7 intervention studies  
N/A  
This 1 high-quality, randomized study was published in 2003.  
Low-quality studies overlapped with Pan et al. (28).  
Patients with cancer  
Manual and ear acupuncture, electro-acupuncture  
Pain  
Immediate to 1 mo  
3 RCTs were identified, only 1 of which was high quality (Jadad score 5). This placebo-controlled, 3-arm study of ear acupuncture in 90 patients demonstrated efficacy using the visual analogue scale.

Furlan et al., 2006 (32)  
Symptom: pain  
Meta-analysis  
May 2006  
41 randomized trials  
N/A  
6019 patients with chronic noncancer pain, average age 58 ± 1 y (range, 40–71), 63% female, 85% white  
Any opioid administered for 7 d or more. Trials were identified for codeine, morphine, tramadol, and propoxyphene  
Intensity of pain relief, function, and opioid side effects  
1–16 wk  
Thirty randomized, placebo-controlled trials identified, of which 28 were meta-analyzed (pain standardized mean difference [SMD], −0.60 [CI −0.69 to −0.50]). Functional status (SMD, −0.31 [CI −0.41 to −0.22]). Side effects that occurred more commonly on opioids included constipation (risk difference [RD], 16%), nausea (RD, 15%), dizziness or vertigo (RD, 8%), somnolence or drowsiness (RD, 9%), vomiting (RD, 5%) and dry skin, itching, or pruritis (RD, 4%). Most trials addressed arthritis or neuropathic pain, and the degree to which they addressed late-stage disease is unclear.

Tremont-Lukats et al., 2005 (33)  
Symptom: pain  
Meta-analysis  
December 2002  
27 randomized, double-blind, controlled trials  
N/A  
Patients with neuropathic pain, average age 51 ± 7 y, median size for trials was 28  
Systematically administered local anesthetictype drugs (mexilitine, lidocaine, and tocainamide)  
Immediate-to-short-term  
10 trials evaluated lidocaine or mexilitine for chronic, neuropathic pain and found they were effective vs. placebo (weighted mean difference [WMD], −10.60 mm [CI −14.62 to −6.66], P <0.001). 5 trials compared lidocaine, mexilitine, or tocainamide vs. other analgesics and found no difference (WMD, −6.60 mm [CI −6.96 to 5.75 mm]). The degree to which these trials addressed late-stage disease is unclear.

Jennings et al., 2002 (61)  
Symptom: dyspnea  
Meta-analysis  
May 1999  
18 double-blind, RCTs  
N/A  
Patients with dyspnea from any disease. Two studies addressed cancer and 1 heart failure.  
Any opioid given to relieve dyspnea  
Dyspnea (most studies used visual analogue scale)  
Immediate (single-dose studies) to short-term, (multiple-dose duration not described)  
16 of 18 studies had Jadad scores of 4, all of them only failing to describe randomization procedures. All studies were small with the total sample in the 18 studies of 293 and the largest study of 79 patients. Results across these studies were consistent, and 12 studies showed a pooled SMD, −0.31 (CI −0.50 to −0.13). No clinically significant adverse effects of opioids on respiratory function were noted in these studies.

Salman et al., 2003 (62)  
Symptom: dyspnea  
Meta-analysis  
September 2000  
20 randomized trials  
N/A  
Patients with COPD (FEV1<70% or FEV1/FVC <70%). Almost all studies addressed patients in their 60s.  
Any type of rehabilitation (upper-extremity, lower-extremity, or respiratory muscle exercise)  
Exercise capacity and dyspnea (12 studies used the CRQD)  
6–12 wk for patients with mild or moderate COPD (15 studies), 10 wk–2 mo for patients with severe COPD (6 studies)  
Both walking distance and dyspnea outcomes were strongly related. Among all 12 studies that used the CRQD, 11 that included at least lower extremity training (vs. 1 that did not) demonstrated a pooled benefit. Of 3 studies of severe COPD, 2 that included at least 6 mo (vs. 1 of <3 mo) did not demonstrate benefit. Short- and longer-term trials were both effective in mild to moderate COPD.

Booth et al., 2004 (83)  
Symptom: dyspnea  
Meta-analysis  
End date not reported (most recent trial 2001)  
37 studies, including 20 randomized designs  
Patients with advanced cancer, heart failure, and COPD  
Intermittent, ambulatory, and long-term oxygen therapy  
All studies reported some measure of dyspnea (most commonly Borg or visual analogue scale)  
Immediate, longer-term trials up to 12 wks  
Most studies (22) were conducted to evaluate intermittent oxygen use during exertion for COPD. Of these, 13 demonstrated a benefit on dyspnea. Only 2 were negative, and others indicated increased endurance with equivalent dyspnea. Fewer studies evaluated COPD patients at rest, patients with cancer, or heart failure. With the exception of oxygen for exercise, evidence was mixed for all these conditions. 2 of 3 studies in advanced cancer showed benefit in crossover trials comparing room air.

Raid et al., 2005 (84)  
Symptom: dyspnea  
Meta-analysis  
April 2004  
20 RCTs  
N/A  
Patients with stable COPD  
Theophylline treatment for 27 Dyspnea, patient preference, and walk distance  
Not reported  
Only 2 studies reported dyspnea and wheezing using similar numerical scale. Together, they found nonsignificant improvements in symptoms. Five other studies reported disparate measures of symptoms, all of which reported improvement in the intervention group.
| Author et al., 2006 (65) | Symptom: dyspnea | Meta-analysis | December 2005 | 54 RCTs of crossover or parallel design from 33 unique studies | N/A | None | Patients with symptoms, stable airflow obstruction (FEV1 <75%). Patients could be receiving inhaled steroids. Trials were included if FEV1/FVC was <70% at baseline. | Long-acting β-agonists (formoterol or salmeterol) vs. anticholinergics (ipatropium or tiotropium) or placebo with or without rescue β-agonists | Dyspnea-free days, rescue medication use and exacerbations, and dyspnea self-report | 4–16 wk | Few studies reported symptom-free days and nights, and measures were heterogeneous. Twelve studies comparing long-acting β-agonists to placebo reduced exacerbations (odds ratio [OR], 0.74 [CI, 0.64 to 0.87]). Four studies reported hospitalization and the pooled effect indicated reduced risk of hospitalization. No difference was noted vs. anticholinergics. Two studies comparing long acting β-agonists to placebo reported dyspnea using the Transitional Dyspnea Index and the pooled effect for the odds ratio of clinically meaningful improvement in dyspnea was 1.70 (CI 1.25 to 2.31, P < 0.001). No difference in TDI was noted in 2 studies that compared long acting β-agonists to anticholinergics. |

| Roffe et al., 2005 (71) | Symptom: depression | Systematic review | Search termination not reported but most recent citation 2002 | 6 RCTs | N/A | None | Patients with mixed-stage cancer | Guided imagery, imagery, or visualization as the sole adjuvant to patients undergoing therapy, or sole palliative therapy | Depression, anxiety | Immediate to 3 wks | Only 4 of 6 studies were published and all were small and of low quality. No conclusions could be drawn about the effectiveness of guided imagery. |

| Walsh et al., 1998 (75) | Advance care planning | Systematic review | August 1987 | 10 RCTs | N/A | None | Cancer outpatients | Communication interventions to improve breaking bad news, including written summaries and audiotapes | Knowledge recall, understanding, satisfaction, psychological well-being | 5 d–5 mo | Inconsistent effects on knowledge and satisfaction noted, and few studies addressed psychological adjustment. |

| Hanson et al., 1997 (76) | Advance care planning | Systematic review | March 1996 | 16 studies, 7 of which were randomized trials | N/A | This review and its conclusions overlap almost entirely with Guo and Harstall (79) | Healthy and chronically ill outpatients | Interventions to improve end-of-life care | Advance directive completion | Not reported | All the studies addressed end-of-life discussions and advance directive completion. |

| Baggs, 2002 (77) | Advance care planning | Systematic review | 2000 | 86 reports of some overlapping studies, including multiple reports from 4 intervention trials, 3 of which were randomized | Mostly observational studies. | Interventions covered by Higginson et al. (25) | Patients with advanced or terminal illness, age >45 y | Interventions to improve end-of-life care | Diverse | Not reported | The few and diverse nature of the interventions precludes conclusions about effective practices to improve care. |

| Song, 2004 (78) | Advance care planning | Systematic review | December 2002 | 7 studies, including 5 RCTs | 2 observational studies | No other review aimed to characterize effective outcomes. | Healthy or chronically ill, mostly elderly outpatients. One study addressed inpatients. | Discussions about end-of-life care | Satisfaction, emotional well-being | Not reported | Few studies have evaluated effective outcomes of advance care planning. Three studies; 2 of which were randomized, showed improved satisfaction or emotional well-being following discussions. No study demonstrated a worsening of satisfaction or emotional well-being following care planning discussions. |
Guo and Hardall, 2004 (79)  Advance care planning  Systematic review  March 2004  1 systematic review (Rolle et al., 71) and 10 RCTs  N/A  This report subsumed Hanson et al. (76)  Mostly elderly patients, including those in nursing homes (2 studies), hospitals, and outpatient settings  Interventions to improve advance directive implementation  Advance directive completion rates, understanding, satisfaction  Not reported  The review was intended to identify studies supporting advance directive implementation. Six of the RCTs, as well as studies addressed in the review, support the effectiveness of various communication interventions (prompts to physicians, physician–patient communication, education) to improve advance directive completion rates in outpatient and nursing home settings.

Oomas and Higginson, 2006 (80)  Advance care planning  Meta-analysis  September 2004  58 studies, including 3 RCTs and 1 quasi-experimental study  54 observational studies  Studies through 1999 were addressed in a previous report (4)  Terminally ill patients with cancer  Intervention studies included various palliative care or hospice services  Site of death  Not reported  The review identified a limited number of interventional studies. 17 factors were associated with home death in the observational literature, including low functional status, preferences, previous receipt of home care and its intensity, living with relatives, and extended family support.

Higginson et al., 2000 (25)  Advance care planning  Systematic review and meta-analysis  February to June 1999  72 citations, including 5 systematic reviews and 67 reports of 43 unique studies identified through reviews were randomized and controlled, as were 4 additional studies  14 of 30 studies identified through systematic reviews were retrospective or observational, as were 10 of the additional studies  Changes and analysis of site of death overlap completely with Gomes and Higginson’s (80) update.  Patients cared for by palliative care services (home care, hospital-based, and hospice in Europe, Australia, and the United States)  Any intervention of more than 1 individual, at least 1 who has specialist training or spends all their working time in palliative care, in a hospital, home or community setting, or in a combination of these  Patient and caregiver quality of life and symptoms, site of death, healthcare utilization, and costs  Short-, intermediate-, and long-term interventions  This review focused uniquely on a meta-analysis and review of the clinical effectiveness of palliative care teams. Many of the palliative interventions are included in a later update focused specifically on cancer Gysels and Higginson (27).

Shalowitz et al., 2006 (81)  Advance care planning  Systematic review  December 2004  16 studies, including 2 interventions  None  The 2 intervention trials addressed whether discussing patient preferences improved surrogate accuracy  Patient–surrogate concordance  Not reported  Only 2 of 16 studies evaluated interventions. Observational studies indicated that surrogates often understood patient preferences (68% concordance for 19 526 paired responses); however, the 2 intervention studies were ineffective in improving surrogate concordance.

Wilson, 2004 (29)  Advance care planning  Systematic review  September 2003  11 studies, design not reported  Design not reported  Intervention studies covered in Wilson overlap almost completely with previous reviews by Higginson et al. (25) and Gysels and Higginson (27)  Patients with serious, chronic, or terminal illness  Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings  Advance directive completion  Short, intermediate, and long-term interventions  Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25).
Wilson (29) overlapped but was much less extensive

Patients with cancer
Any intervention to improve supportive or palliative care. Review examined diverse system interventions to improve aspects of supportive or palliative cancer care. These interventions included care coordination, promoting user involvement, face-to-face communication, improving information, psychological, spiritual, and social support, generalist and specialist palliative care delivery, rehabilitation, complementary and alternative therapies, and caregiver support including bereavement.

Symptoms, quality of life, patient, caregiver, and provider satisfaction with care, knowledge, place of care and site of death, utilization

Short-, intermediate- and long-term interventions

The review covered a broad range of interventions, especially those related to the clinical organization of care, to improve supportive care for cancer.

2 meta-analyses (discussing 23 RCTs) and 11 RCTs addressed face-to-face communication
2 meta-analyses, 1 of which included 10 RCTs and 17 additional RCTs on information enhancement

The review addressed several areas with specific implications for continuity—coordination of care, information, and communication. A key aspect of studies that improved coordination and was associated with successful home-based care was enhanced communication between professional providers and caregivers.

With respect to face-to-face communication, the review suggested that a few high-quality studies support training strategies to improve physician communication. Mixed evidence supports a relationship between improved physician communication and patient outcomes.

Regarding information enhancement strategies, effective approaches stressed processes that included listening to, recording, and responding to patients’ needs and priorities.
Continuity of palliative care services (home care, hospital-based, and hospice) in Europe, Australia, and the United States

Any intervention of more than one individual, at least one of whom has specialist training, or who spends all their working time in palliative care, in a hospital, home/community setting or in a combination of these.

Outcomes were extracted from all studies considered by the review. 9 studies included information on home death rate. Although the SMD was significant (0.28), excluding one, large outlier study (National Hospice Study) reduced the estimate of effect and its significance (0.18, 95% CI -0.07 to 0.33).

Based on a priori decision and confirmed by tests of homogeneity, studies were evaluated based on whether they were multidisciplinary team-oriented, focused on enhancing patient self-care, or used telephone coordination. Multidisciplinary teams demonstrated the most impact on mortality risk (risk ratio [RR] 0.75, 95% CI 0.59 to 0.96), heart failure (RR 0.74, 95% CI 0.63 to 0.87) and all-cause hospitalizations (RR 0.81, 95% CI 0.71 to 0.92). Other strategies were beneficial, but less so.

Patients in these trials had a high mortality rate (10-30% over 6-12 mo of follow-up). During a pooled mean observation period of 8 mo, there were less readmissions in 18 studies among intervention than control patients (relative risk [RR] 0.75, 95% CI 0.64 to 0.88). In 14 studies, there was a trend toward lower mortality among intervention patients, and in 6 studies a greater percentage improvement in quality of life scores.
<table>
<thead>
<tr>
<th>Author et al., 1998 (115)</th>
<th>Continuity Systematic review</th>
<th>1997</th>
<th>9 studies, including 5 randomized</th>
<th>Not reported</th>
<th>Complete overlap of intervention studies with Higginson et al. (25)</th>
<th>Patients with terminal cancer</th>
<th>Intervention aimed at more than 1 aspect of care with the main goal of improving home support</th>
<th>Quality of life, readmission</th>
<th>Immediate to 8 mos</th>
<th>Heterogeneity and limited outcomes did not allow for synthesis, but there were no benefits to special home care services for patients with cancer. Very few high quality studies were identified.</th>
</tr>
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<tbody>
<tr>
<td>Taylor et al., 2005 (113)</td>
<td>Continuity Meta-analysis</td>
<td>January 2005</td>
<td>9 RCTs</td>
<td>N/A</td>
<td>None</td>
<td>Patients with moderate to severe chronic obstructive pulmonary disease (COPD)</td>
<td>Palliative care and hospital service delivery innovations in hospital, home care, nursing home, and hospice settings.</td>
<td>Mortality, readmission, and quality of life (7 studies) and disability (5 studies)</td>
<td>3–12 mos</td>
<td>2 studies evaluated interventions of only 1 mo with little evidence of benefit. Meta-analysis of longer term interventions indicated no difference in mortality (odds ratio 0.85, 95% CI 0.58 to 1.26), as well as quality of life, disability, or emotional well-being. Mixed evidence was found (2 trials favoring, 3 not favoring) with respect to reducing readmission.</td>
</tr>
<tr>
<td>Wilson 2004 (29)</td>
<td>Continuity Systematic review</td>
<td>September 2003</td>
<td>11 studies, design not reported</td>
<td>Design not reported</td>
<td>Intervention studies covered in Wilson overlap almost completely with prior reviews by Higginson et al. (25) and Gysels and Higginson (27)</td>
<td>Patients with serious, chronic, or terminal illness</td>
<td>Communication and site of care</td>
<td>Short-, intermediate-, and long-term interventions</td>
<td>Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25). One summary covered nurse case management, finding mixed evidence, although only 4 relevant RCTs were cited.</td>
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<tr>
<td>Windham et al., 2003 (118)</td>
<td>Continuity Systematic review</td>
<td>March 2002</td>
<td>32 studies including 15 RCTs, 16 controlled designs</td>
<td>1 descriptive study</td>
<td>Focused on older heart failure patients regardless of setting.</td>
<td>Older patients with heart failure (median study size, 63)</td>
<td>Interventions to reduce utilization</td>
<td>Hospital admissions (29 studies), hospital days, and other utilization measures</td>
<td>Not reported</td>
<td>More effective studies used a variety of interventions including close monitoring of symptoms by nurses or care managers. Education was common component of effective programs, and they often included a multidisciplinary team component (e.g., physician, nurse, and case managers).</td>
</tr>
<tr>
<td>Acton and Kang, 2001 (132)</td>
<td>Caregiving burden Meta-analysis</td>
<td>1999</td>
<td>24 reports, including 13 experimental studies and 14 quasi-experimental or before and after evaluations</td>
<td>N/A</td>
<td>The study was dementia-specific, so narrower than Sorenson (133) and more stringent designs than Yin (130)</td>
<td>1254 caregivers of patients with dementia (mean 51 participants per study)</td>
<td>Interventions designed to reduce burden for caregivers of patients with dementia</td>
<td>Caregiver burden</td>
<td>Immediate to 8 mo</td>
<td>Weighted pooled effect of 21 homogenous interventions was insignificant (-0.08, 95% CI -0.19 to 0.02). Examining specific intervention types, 3 multi-component studies showed a small effect on burden (0.46, 95% CI 0.14 to 0.78), although other intervention types did not.</td>
</tr>
<tr>
<td>Acton and Winter, 2002 (131)</td>
<td>Caregiving burden Systematic review</td>
<td>2001</td>
<td>73 published and unpublished reports, all of which had either control group or pre-post design</td>
<td>N/A</td>
<td>This review overlaps with Acton’s other review, and discusses a wider range of study designs using a qualitative synthesis</td>
<td>Caregivers of patients with dementia</td>
<td>Interventions designed to reduce burden for caregivers of patients with dementia</td>
<td>Caregiver burden, knowledge, psychosocial wellbeing</td>
<td>Immediate to 1 year</td>
<td>The findings of this review were similar to those of Acton and Winter’s (131) methodologically more stringent and quantitative review.</td>
</tr>
</tbody>
</table>
The review covered a broad range of interventions, especially those related to the clinical organization of care, to improve supportive care for cancer. With respect to services for caregivers, studies were too diverse to draw conclusions related to specific supportive strategies.

Symptoms, quality of life, patient, caregiver, and provider satisfaction with care, knowledge, place of care and site of death, utilization

Patients with cancer

Interventions to improve supportive or palliative care. Review examined diverse system interventions to improve aspects of supportive or palliative cancer care. These interventions included care coordination, promoting user involvement, face to face communication, improving information, psychological, spiritual, and social support, generalist and specialist palliative care delivery, rehabilitation, complementary and alternative therapies, and caregiver support including bereavement.

Patient and caregiver quality of life and symptoms, site of death, healthcare utilization, costs.

Outcomes were extracted from all studies considered by the review. 13 studies reported caregiver outcomes and a standardized mean difference was 0.15 (95% CI: -0.14 to 0.48) consistent with a nonsignificant positive effect.

Caregiving burden

Pooled effect demonstrated an immediate benefit on burden (75 studies), depression (53 studies), wellbeing (28 studies) knowledge (48 studies), and symptoms in the care recipient (41 studies). These effects were maintained in follow-up for burden, depression, wellbeing, and knowledge. Among randomized studies, effects were diminished but benefits maintained for burden (45 studies, -0.12, 95% CI: -0.16 to -0.07), depression (40 studies, -0.06, 95% CI: -0.11 to -0.01), knowledge (34 studies, 0.37, 95% CI: 0.27 to 0.46), and the symptoms among the care recipient (34 studies, -0.12, 95% CI: -0.20 to -0.03).
<table>
<thead>
<tr>
<th>Author et al., 1999 (129)</th>
<th>Caregiving burden</th>
<th>Systematic review</th>
<th>June 1998</th>
<th>83 studies identified, 22 'key papers' highlighted in the paper, of which 3 are randomized designs</th>
<th>Intervention trials discussed in 'key papers' also identified in Higginson et al. (25)</th>
<th>Terminally ill patients</th>
<th>Palliative care services including hospice</th>
<th>Patient and caregiver satisfaction</th>
<th>Not reported</th>
<th>The small, methodologically limited studies identified suggested an association between palliative care and improved satisfaction.</th>
</tr>
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<tbody>
<tr>
<td>Wilson, 2004 (29)</td>
<td>Caregiving burdens</td>
<td>Systematic review</td>
<td>September 2003</td>
<td>3 reviews and 8 studies, design not reported</td>
<td>Intervention studies covered in Wilson overlap almost completely with prior reviews by Higginson et al. (25) and Gysels and Higginson (27)</td>
<td>Patients with serious chronic or terminal illness</td>
<td>Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings.</td>
<td>Diverse ‘family needs’</td>
<td>Short, intermediate, and long term interventions</td>
<td>Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25).</td>
</tr>
<tr>
<td>Yin et al., 2002 (130)</td>
<td>Caregiving burden</td>
<td>Meta-analysis</td>
<td>2000</td>
<td>26 studies included 17 randomized designs</td>
<td>Similar review aim to Sorenson (133) but narrower methodological criteria. About half of studies overlap.</td>
<td>1970 caregivers of elderly adults, mean study size 109, mean caregiver age 60.1 y, 79% women</td>
<td>Interventions to reduce burden for caregivers of elderly adults</td>
<td>Caregiver burden</td>
<td>2 wk to 1 year</td>
<td>Both group and individual interventions demonstrated a positive, beneficial effect. Weighted mean effect for all studies was 0.41 (95% CI 0.32 to 0.51) indicating a moderate positive treatment effect. That effect was maintained but diminished among the 11 randomized studies.</td>
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</table>

* Reviews may have had broader aims or the studies may have included other outcomes, but those that are most relevant to this review are highlighted. Three reviews addressed multiple domains and each of these reviews is described in each section to which it was relevant. AHRQ = Agency for Healthcare Research and Quality; COPD = Chronic Respiratory Disease Questionnaire; OR = odds ratio; RCT = randomized controlled trial; RD = risk difference; SMD = standardized mean differences; WMD = weighted mean difference.