Improving End-Of-Life Care: A Systematic Review Of The Impact And Effectivness Of Palliative Medicine

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Abstract

Introduction: The need for palliative medicine has increased in the last few decades on global and local levels as a result of increasing in the prevalence of chronic health problems to improve the quality of life for patients with terminal illness and their caregivers and families

Objectives: To explore the impact and effectiveness of palliative medicine in improving end-of-life care as well as the quality of life of patients and their caregivers.

Methods: A comprehensive literature review search was conducted using relevant databases including studies focusing on impact and effectivness of palliative medicine on end-of-life care.

Results: A total of 2,518 articles were initially identified. Only 13 aticles were eligible for inclusion in this systematic review. Four studies were randomized clinical trials, one quasi experimental study, one none-randomized cmparative sudy, two propective studies, three cross-sectional studies, one mixed (quantitative and qualitative) study and one qualitative study. Most studies were conducted among patints only (n=7), while two studies were conducted among both patients and caregivers and three studies were conducted among only caregivers while only one study was conducted among healhcare providers. Improvement of the patients and/or caregivers` quality of life, coping with dath or functional status was reported in most studies (n=10).

Conclusion: The impact and effectiveness of palliative medicine on end-of-life care is not clear, with some evidence that patients may get benefits from it. A comprehensive nationwide multicentric study is recommended to be conducted in whole Saudi Arabia

Keywords: End-of-life, Palliative Medicine, Effectiveness, Caregivers, Quality of life

INTRODUCTION

According to the World Health Organization (2020), the demand for palliative medicine has increased in the last few decades on global level as a result of increasing in the prevalence of chronic health problems.[1] It has been documented that the need for palliative medicine and care will be nearly doubled by 2060 on worldwide leve; particularly in developing cuntries as a result of increase burden of chronic illnesses.[2]

Palliative care plays an essential and vital role in improving the quality of life for patients with terminal illness and their caregivers and families and can be provided at homes or in specialized centers; this is essential particularly in developing countries as the access to pain killer medications is difficult compared to devloped countries in addition to lack of palliative care regarding because of the socio-cultural belief system. [3]

Evaluation of the impact and effectivness of end-of-life care particulaly in term of quality of life (QoL) is a complex issue, as it involves a great heterogeneity of tools with methodological and statistical obstacles. In addition, most tools were designed specifically for selected groupof patients such as cancer patients or those with chronic diseases.[4]

In Saudi Arabia, the Reform of Healthcare Vision 2030 has identified the significance of palliative care and encourages strongly the availability as well as quality of the service and according to that a recet study indicated increase in the number of palliatice care units, outpatient palliative care services, and community heome care services.[5]

Although measurement of experiences of patients and their caregiver with end-of-life care is increasing wrldwide, previous systematic reviews showed a lack of studies concerning efforts to improve the quality of these experiences [6].

This review aims to provide insights into the impact and effectivness of palliative medicine in improving end-of-life care and identifing gaps in the current literature and provide recommendations for future researches.

MATERIAL AND METHODS

A comprehensive literature review search was carried out using databases such as PubMed, Google Scholar, ScienceDirect, Cochrane Databases and others. Included studies were those focusing on the impact and effectivness of palliative medicine on end-of-life care and quality of life of terminally ill patients as well as their caregivers. Studies published in peer-reviewed journals and studies that provide quantitative or qualitative data on this subject wer searched for. Studies not related directly to the objective of this study d, and those not published in English or lacking review were excluded.

Relevant keywords such as ‘palliative medicine’, ‘palliative care’ quality of life’, ‘terminally ill patients and or their caregivers’ and ‘end-of-life care’ were utilized. Relevant data were extracted from selected studies, including type of study, Sample size, includion criteria, intervention, Study duration, assessment tool, outcome and main study limitations. Then, findings and discrepancies among studies were discussed.

Outcomes of palliativ care on terminally ill patients and/or their caregiver includes a range of issues. In this review we focused mainly on quality of life and functional assessment.

A waiver for Institutional Review Board (IRB) approval was requested. No human or personal data were included in this study and findings were presented without manipulation or selective reporting of results.

RESULTS

A total of 2,518 articles were initially identified. Reviwing of these articls according to PRISMA guidelines revealed that only 13 aticles were eligible for inclusion in this systematic review. Table1 summarizes the studys` design, inclusion criteria, interventions adoptd, tools used, main outcomes and limitations. Regarding type of studis, 4 were randomized clinical trials, one quasi experimental study, one none-randomized cmparative sudy, 2 propective studies, 3 cross-sectional studies, one mixed (quantitative and qualitative) study and one qualitative study. Most studies were conducted among patints only (n=7), while two studies were conducted among both patients and caregivers and three studies were conducted among only caregivers while only one study was conducted among healhcare providers. Improvement of the patients and/or caregivers` quality of life or functional status or coping with death was reported in most cases (n=10).

DISCUSSION

This systematic review investigated the most relevant quantitative and qualitative studies that assessed the impact and effectivness of palliative medicine on end-of-life care. Across the included thirteen studies, heterogeneity and various outcome measures were observed. Despite of that, improvement of the patients and/or cargivers` quality of life or functional status was bserved in 10 out of the total 13 studies (76.9%). Our findings are consistent with another two systematic reviews performed by Singer et al., 2016[20] and Bradley et al., 2018.[21] According to the World Health Organization (WHO), the main objective of the palliative care is to enhance the quality of life for terminally ill patients and theircaregivers.[1] In this review, better QoL, particulary in early period of intervention was reported by Clark t al (2013),[7] Mah et al (2023)[16] Ibrahim et al (2024) [17] and Bland et al, [14] improved general well-being, and appetite were reported by Leppert et al. (2014),[8] and improvement in functional status in 53% of patients was observed by Kilonzo et al (2015),[9] Morover, significant improvementt in coping with death after palliative care training prgram was reported by Lee and Lee (2020)[13] and Chen et al (2024).[18] On the other hand, some studies reported no significant impact on quality of life[11] or worser quality of death[19] after palliative medicine interventins.Another systematic review[21] and meta-analysis[22] reported mre benefits f palliative medicine in patients with higher level of psychological distress. In another recent revirew, several studies did not show significant improvements in quality of life but showed improvements in outcomes such as home deaths.[23] This inconsistency may be explained by the fact that quality of life is challenging to assess due to great variatins on the individual conditions of a patient.[24]

Caregiver`s quality of life was regarded as an important issue as that of patients as it influences patients` quality of life.[7, 25,] In this review, improvement in the overall quality of life for caregivers, reduction in the burden, improvement in coping with death were observed among them in many studies. [10, 12, 13, 16, 17].

This review hilights the fact of rareity of studies investigating the effectiveeness of palliative medicine pragram on end-of-life care in developing countries as only two studies were cited from Jordan[12] and Egypt[17] out of the included 13 studies. The same has been reported in a larger review of Hughes et al (2023)[23] included 57 articles as only two f them were conducted in South Africa[26] and India,[27] while the remaining 55 aticles were condicued in develped cuntries.

Furthrmore, few qlalitative studies were cited in this review[13, 15]; none of them were from develping countries. This is disadvantage, as the effectivness of palliative medicine programs should be sufficiently assessed qualitatively, particularly in develping countries as their components may be different from develped countries. Therefore, it is recmmended for future studied to be mixed qualitative and qualtitative as well as to focus on effectiveness of palliative interventions on end-of-life care in developing countries.

Across the studies included in this review, numerus successful strategies for improving palliative care experiences were observed, however the most successful one was encouraging family/caregivers to participate in inpatient daily rounds.The same was also reported in a recent systematic review conducted by Quigley and McCleskey (2021).[6]

Surveys often focuse on overall rating of care among patients and/or caregivers ignoring different aspects of care experiences, therefore, efforts aimed at improving experience of end-of-life care experiences should not only include overall ratings of care but also include other aspects of care experiences, including communication with medical staff, spiritual care, emotional support, and management of symptom.[28]

Some important limitations of the present review should be mentioned. First, we focused only on impovement and effectiveness of palliative medicine and we didn`t focus on nature of interventions, such as stronger policies, offering different medications or educational programs; thus, relatively small number of studies were included in this review. Second, the quality of the included studies in this review was not assessed. Finally, we could nt use all databases; however, we used the main databases and also we have included only articles written in English which could be considered a bias that limits the comprehensiveness of the study. Despite of those limittions, this study presents a useful summarization of the literature on investigating the impact of palliative medicine on end-of-life care, which could be of value for researchers and clinicians to understand the scope and nature of that affection and trying to improve the current situation.

CONCLUSIONS

Overall, the impact and effectiveness of palliative medicine on end-of-life care is not clear, with some evidence that patients may get benefits from it. Few studies were cited from Middle East countries. Thus, a comprehensive nationwide multicentric study is recommended to be conducted in whole Saudi Arabia, using universal indicators for the outcome. Furthermore, qualititative studies should be encouraged in this regards.

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Table 1: Summary of studies conducted to assess the impact and effectivness of Palliative Medicine in improving End-of-Life care

Author; year	**Country**	**Type of study**	**Sample size**	**Includion criteria**	**Intervention**	**Study duration**
Clark MM, et al: 2013[7]	United States	Randomized controlled trial	117	Patients with advanced cancer stages (average age was 58 years)	Multidisciplinary group (6 sessions)	27 weeks
Leppert et al.; 2014[8]	Poland	Prospective comparative study	129	Patient with advanced cancer cared in three different settings (day care, home care and inpatient hospital unit); average age was 67.3 years	Palliative day care	7 days
Kilonzo I, et al. 2015[9]	Republic of Ireland	Description of experience of introducing	102	Attendees of day care Centre; 68% were cancer patints	Specialist palliative care day care	8 weeks

		an enhanced therapeutic specialist day care model to monitor patient outcomes. With no Control group		(average age was 69 years)		
Allen SR, et al; 2017[10]	United States	Non randomized comparative before-and-after clinical trial	427 family member, 47 nurses and 11 physicians	Family members of patients admitted to the intensive care unit	Daily rounds with the critical care team.	6 months
Franciosi V, et al; 2019[11]	Italy	Multicentric randomized controlled clinical trial	218	Patients with advanced non-small cell lung, gastric, pancreatic and biliary tract cancer diagnosed in the past 8 weeks	Early palliative care	12 weeks
Bani Younis MK, et al; 2019[12]	Jordan	Randomized controlled trial	137	Caregivers of cancer patients.	Palliative intervention SHARE program	Not mentioned
Lee J and Lee J-E; 2020[13]	Republic of Korea.	Mixed-methods including focus group interview (pilot study)	19	Adult volunteers with chronic diseases, in the final stages of their illnesses, living with caregivers, receiving home care nursing, and wanted to die at home	Training palliative care program	10 weeks
Bland KA, et al; 2021[14]	Australia	Cross-sectional study to assess	162	Adults with cancer who attended multidisciplinary clinical service	A multimodal treatment approach including QoL	6 months

		QoL and symptoms		(average age was 67.2 years)		
Warner G, et al; 2021[15]	Canada	Qualitative interviews	16	Individuals who delivered or managed Nav-CARE evidence-based innovation	Nav-CARE evidence-based innovation	6 weeks
Mah K, et al; 2023[16]	Canada	Cluster-randomized clinical trial	157	Family caregivers of terminally ill patients	Early palliative care	1 week
Ibrahim AM, et al: 2024[17]	Egypt	A quasi-experimental study	88	Adult cancer patients (stages III or IV) and their primary caregivers (Average age of patients was 65.8 years and for caregiver was 42.1 years)	A comprehensive rehabilitation palliative care program	16 weeks
Chen ST, t al; 2024[18]	Repiblic of China	prospective, longitudinal study	174	Adult cancer patients of stages III and IV	Palliative care consultative services	6 months
Wang Z, et al 2025[19]	China	Longitudinal survey (Chinese Longitudinal Healthy Longevity Survey)	9974	Aging persons in their fnal phase of life	Structural equation modeling (SEM) and the SEM-basedregression models	2-3 yeas

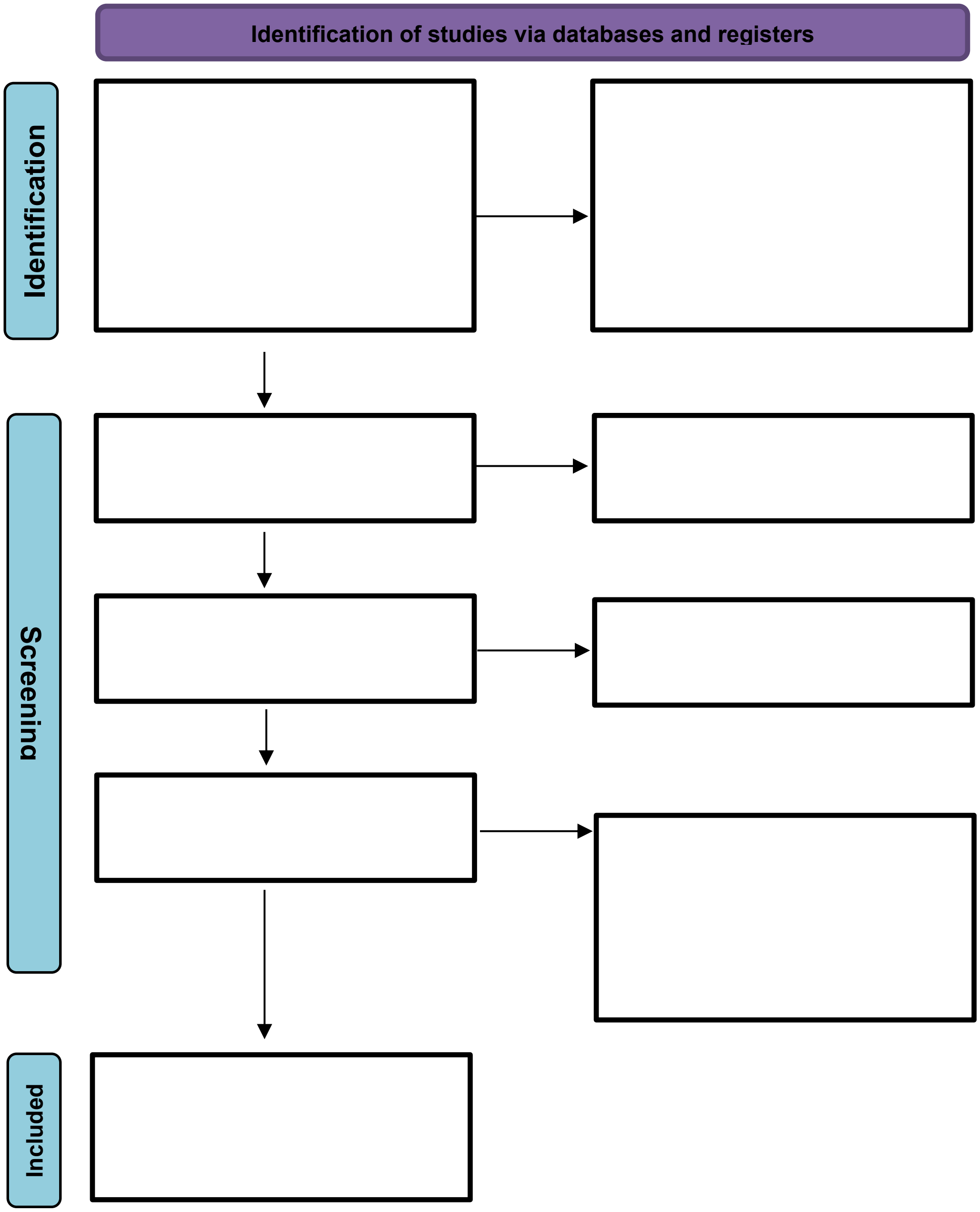
Table 1 Cont.): Summary of studies conducted to assess the impact and effectivness of Palliative Medicine in improving End-of-Life care (Cont.)

Author; year	Assessment tool	Outcome	Main study limitations
Clark MM, et al: 2013[7]	Functional Assessment of Cancer Therapy-General	Intervention group showed better QoL at week 4, however, this was lost by week 27	-The sample population was confined to specific demographic group. Therefore, these findings might not generalizable to other populations. -Low recruitment rate (<25%)

Leppert et al.; 2014[8]	Quality of Life Questionnaire-Core 15-Palliative Care (EORTC QLQ-C15-PAL), Karnofsky Performance Status (KPS) scale and the Edmonton Symptom Assessment System (ESAS)	Improved well-being,, fatigue) and appetite of dar care patients. In the ESAS, improvement in all items was observed except for drowsiness levels. EASAS deteriorated in home and at inpatient palliative care unit.	-Lack of control group -Single-center study -including nly patients withf solid tumors. -Absence of long follow-up as QoL was assessed within 7 days.
Kilonzo I, et al. 2015[9]	The Edmonton Symptom Assessment System, the Edmonton Functional Assessment Tool, Part A of the McGill Quality of Life (QoL) Index, and the Palliative Care Problem Severity Scale.	Most of patients showed an improvement in their Edmonton after one eight-week cycle. With in improvement in Edmonton Functional Assessment Tool scores in 53% of patients	Absence of a control group
Allen SR, et al; 2017[10]	Assessingfamily members` knowledge of the patient's clinical course, satisfaction of the nursing staff and critical care physicians with the process of incorporating family members on rounds and the number of family meetings outside of rounds	-Increased knowledge of family members regarding the clinical course of their patients -Nurses were nearly satisfied with planned family interaction on rounds -Decrese in Family meetings outside of rounds -Most physicians were satisfied with the process	-Response rate was 50% -Family members were presented the survey while care was being processed.
Franciosi V, et al; 2019[11]	Functional Assessment of Cancer Therapy-General measure (FACT-G)	No significant difference in the score of FACT-G was observed between early palliative care	-The palliative intervention was not studied in a pilot study -Patients and clinicians were not blinded to group assignment while the assessors were blinded

		group and standard oncologic group	
Bani Younis MK, et al; 2019[12]	Quality of Life in Life-Threatening Illness – Family Caregiver (QOLLTI-F) and the European Organization for Research and Treatment of Cancer quality of life questionnaire (EORTC QLQ-C30)	Signfical impact on the domains of quality for workshop experimental group and for home visit experimental group	-Focus on caregivers rather than patients -
Lee J and Lee J-E; 2020[13]	Quantitative information concening death anxiety, and while qualitative information were collected about participants` experiences	Significant improvementt in coping with death after training.	-Short period to assess the effect of the program -A small sample size -No control group
Bland KA, et al; 2021[14]	EORTC QLQ-C15-PAL), the Functional Assessment Anorexia/Cachexia Therapy (FAACT) and the 30s sit-to-stand test and handgrip strength.	Significant improvements in QoL and symptoms	-Retrospective, observational study design - Absence of a control group -Patients had different cancer types,thus, they may have been receiving different atherapies and this could impact their responses
Warner G, et al; 2021[15]	Nav-CARE evidence-based innovation	Some organizational (Inner Setting) and community or health system level (Outer Setting) presented barriers and facilitators to implementation of Nav-CARE evidence-based innovation	-Narrow focus of study question and setting
Mah K, et al; 2023[16]	Quality of dying and death (QODD) scale and quality of life at the	Early palliative care improved QOL-EOL, particulalry amnog those who reveivedf	-Retropectve nature of the study as QODD and QOL-EOL scales were provided retrospectively by caregivers.

	end of life (QOL-EOL) scale	care at palliative care unit but showed no significant change in QODD	-Rates were reprted from caregivers rather than patients.
Ibrahim AM, et al: 2024[17]	EORTC QLQ C30, Hospital Anxiety and Depression Scale, Short Form Health Survey, Caregiver Burden Inventory, and Beck Anxiety Inventory	Improvement in the overall quality of life for patients and their caregivers. Reduction in the anxiety and depression levels among the patients, as well as the anxiety and caregiver burden among the caregivers.	-Selection bias due to lack of randomization -Small sample size that could impact generalizability of findings -Focus on short term rather than long term impacts of the program -Recall bias due to using of self-reported measures -
Chen ST, t al; 2024[18]	End of life quality was assessed using the Quality of Dying and Death (QODD) scale	Patients receiving palliative care consultative services had better QODD total scores and treatment preferences than the control group	-Care givers were not assessed -Basis of recruitment are not clear
Wang Z, et al 2025[19]	Death quality assessment scale	End-of-life care negatively impacted the quality of death for aging individuals; with variations according to gender and place of living.	-Utilizing mixed cross-sectional data from three phasesof a longituginal suvey; thus, the measurement dimensions of "death quality" are not sufficiently comprehensive -



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).
**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

Figure 1: Flowchartof the study methodology