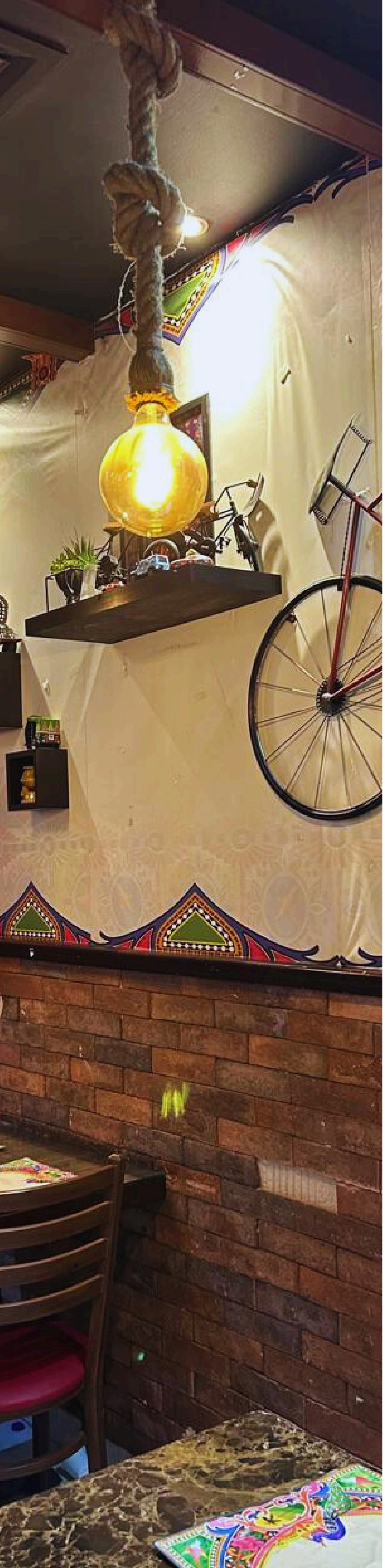

Research Report

Palliative care in Pakistan: A scoping review on current approaches, barriers to care and possible interventions

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Abstract

Background: Palliative care is becoming increasingly important to address the multifaceted concerns of life-threatening illnesses such as cancer and end-stage renal disease. Pakistan faces a huge disease burden yet has a severely undeveloped palliative care infrastructure.

Methods: We conducted a scoping review to (i) examine existing approaches to palliative care in Pakistan, both in home-based care and primary health care; (ii) to identify structural and cultural barriers of access to palliative care and (iii) to identify interventions to optimize the model of palliative care in Pakistan. The search strategy consisted of traditional databases such as MEDLINE and CINAHL.

Results: 84 studies were included in the final analysis. Main themes identified in the Pakistani populus in relation to PC and end-of-life discussion were strong family support, strong religious beliefs and the overwhelming presence of family autonomy in making healthcare decisions for patients. Main barriers were found to be a lack of training/education of students and physicians, cultural stigma regarding discussing death, and lack of access to essential medication like opioids. Possible interventions included enhancing the roles of healthcare workers such as nurses, clinical pharmacists and primary care practitioners.

Discussion: With an increasing interest in patient-centered care from the Pakistani populus, the role is palliative care is likely to expand. More research should be conducted on existing roles of medical personnel and how their capabilities can be best integrated into a developing palliative care infrastructure.

Introduction

According to the World Health Organization, palliative care is “an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with *life-threatening illness*. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual."[1] The majority of adults in need of palliative care are those with chronic or noncommunicable diseases (NCDs).[1] NCDs account for almost 70% of deaths globally and in Pakistan, they are responsible for 58% of all deaths.[2] NCD cases in Pakistan are projected to rise in the near future, aggravated by limited facilities and resources.[2] Additionally, Pakistan has an ageing population increasingly affected by NCDs.[3] Establishing effective palliative care services is essential for Pakistan to reduce future disease burden and to address an ageing population.

The most recent global classification of palliative care provision categorized Pakistan to Group 3a, *isolated palliative care provision*, characterized by "the development of palliative care activism that is still patchy in scope and not well supported; sources of funding that are often heavily donor dependent; limited availability of morphine; and a small number of palliative care services that are limited in relation to the size of the population."[4] This categorization points to the lacking status of palliative care in Pakistan and necessitates immediate improvement, requiring greater research and investment to guide the development of effective palliative care services.

Life-threatening illnesses severely impact the quality of life (QoL) of patients in multiple domains, from emotional to social to functional. The main goal of palliative care is to relieve health-related suffering. This entails two core components: (i) the clinical component includes pain/symptom management and decision-making regarding treatment options; (ii) the non-clinical component includes psychosocial/emotional/spiritual support, bereavement counseling, and patient education.[5]

Research Objectives:

The objectives of this review are as follows:

(i) to examine existing approaches to palliative care in Pakistan, both in home-based care and primary health care

(ii) to identify structural and cultural barriers of access to palliative care

(iii) to identify interventions to optimize the model of palliative care in Pakistan

Methods

Due to the scarce amount of literature available on palliative care in Pakistan, a scoping review methodology is most suitable. A scoping review examines the extent, range and nature of research activity and helps identify research gaps in existing literature.[6, 7] This scoping review takes a broad approach in mapping out the current landscape of palliative care in Pakistan by reviewing both explicitly relevant studies and literature identifying gaps that could be best addressed by incorporating core palliative care competencies. A priori protocol was not developed; due to the extremely broad nature of the research, the inclusion/exclusion criteria and data charting items were decided on iteratively throughout and after the screening process.

Inclusion criteria

The review aimed to look at both clinical and non-clinical components of palliative care as well as provide an overview of the impacts of some of Pakistan's most common life-threatening illnesses (cancer, end-stage renal disease, hepatitis). All studies without a focus on palliative care, life-threatening illness or studies not based in Pakistan were excluded. Studies on chronic pain and those which did not disaggregate based on illness were excluded. In addition, the search was restricted to the English language.

Although studies addressing systemic healthcare issues such as staff shortages are important, for the sake of specificity to the research question, they were evaluated using the following criteria:

Is this an issue palliative care can fix?

Is this an issue actively preventing the progress of palliative care?

If the study failed to fulfill either criterion, it was excluded.

The initial search was not limited by type of study or publication year; however, criteria were developed iteratively to limit included studies.

Search strategy

The search strategy aimed to locate only published studies. An initial mini literature review was done to identify relevant keywords, and the search strategy was developed after consultation with University of Toronto librarians. The following bibliographic databases were searched: MEDLINE (Ovid), EMBASE (Ovid), Allied and Complementary Medicine Database [AMED] (Ovid), and CINAHL (EBSCO). The searches were conducted on June 27, 2025.

The final search strategy for all databases can be found in Appendix A. The search strategies are not identical, given the relative size of the databases. Keywords "social support*" and "death" were only included in the AMED database as including them in MEDLINE, EMBASE or CINAHL increased search results by 1000+, the majority of which were irrelevant.

Study selection process

After searches were run, all search results were exported in the RIS format and imported into Zotero for deduplication. After deduplication, the studies were exported as an Excel spreadsheet, and characteristics were formatted across the following headings: category, publication year, author, title, URL, abstract, TA (title/abstract) screen, PDF availability, FT (full text) screen and reasons for exclusion.

Screening was done independently via the spreadsheet in two stages: (i) the titles and abstracts were screened, and (ii) the full texts were screened. Initially marking studies as "Yes," "No," and "Maybe" under TA/FT screen and subsequently re-screening the "Maybe" studies not only helped with resolving inconsistencies but also aided in solidifying the inclusion criteria. The final included studies were clustered into the following themes: General/Broad (PC (Palliative Care) Specific, Pain Management, Perspectives), Disease-Specific (Cancer, ESRD (End-Stage Renal

Disease), Hepatitis), External Factors (Education/Training, Religious/Ethical, Bereavement/Psychosocial) and Miscellaneous (Awareness, Systemic Issues, Critical Care/Cancer Registry, Other).

A detailed list of these categories and their associated description can be found in Appendix B.

Data charting

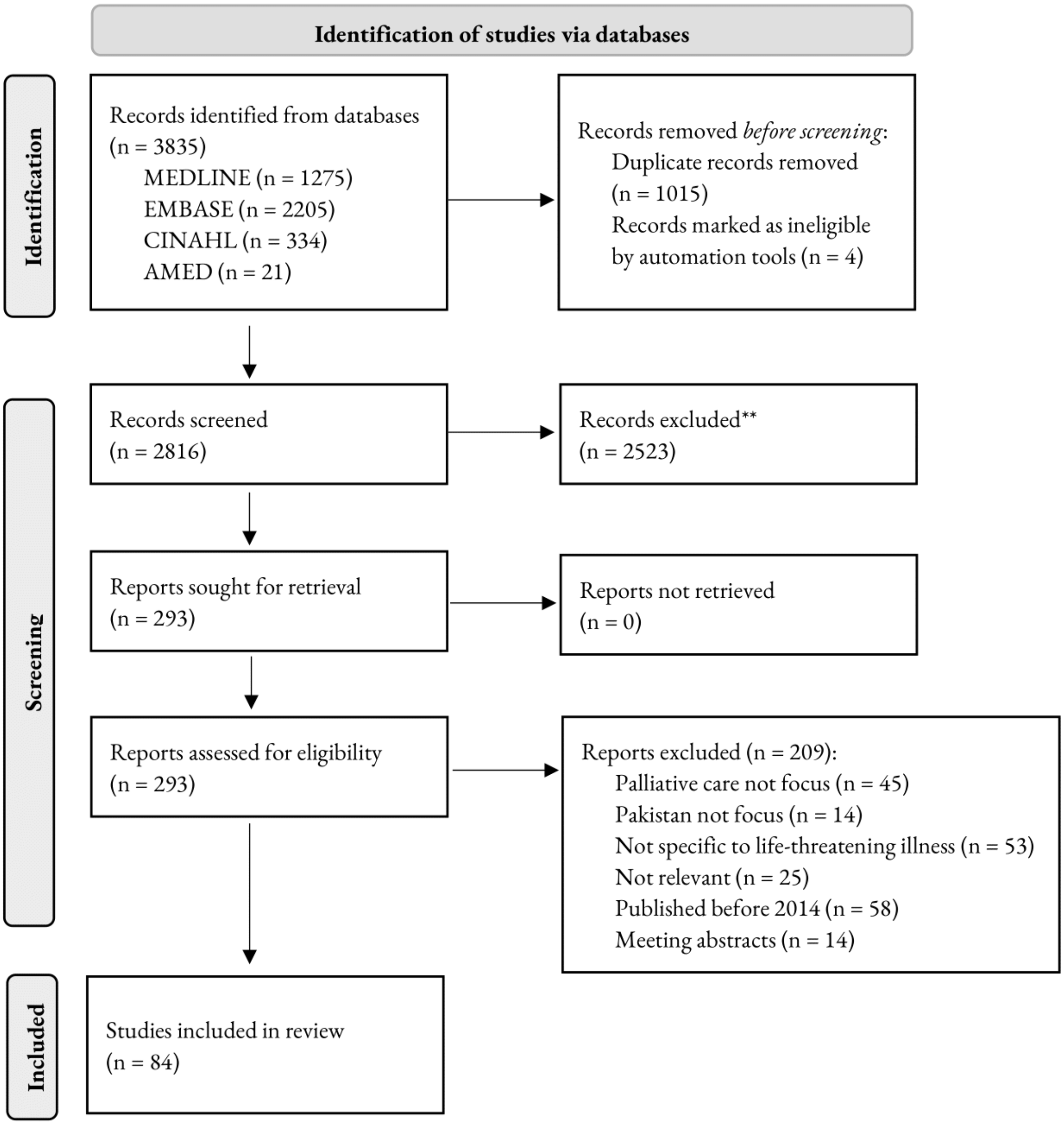
A comprehensive data charting form was developed to extract relevant information from included studies. The form was developed after the screening stage due to the broad nature of the search and unpredictability of the studies themselves. We abstracted data on the following characteristics: author, year of publication, type of study/method of data collection, institutional affiliation of first author, aim, population, sample size and key findings. The data charting form was organized by the defined clusters.

Findings

Literature search

The literature search resulted in 3835 studies (Figure 1). After screening 293 full texts, 45 were excluded for not focusing on palliative care, 14 were excluded for not focusing on Pakistan, 53 were excluded for not being specific to life-threatening illness, and 25 were excluded for not being relevant. Following these exclusions, a decision was made to limit the included studies to those published in 2014 and onwards for relevance in addition to removing meeting abstracts for being comparatively inconclusive. 72 studies were excluded, leaving 84 studies for final inclusion and data analysis.

Figure 1. PRISMA Flow Diagram



Characteristics of included studies

The complete charted characteristics of the 84 included studies can be found in Appendix C. Of these, 8 studies were reviews with the rest being empirical. The most common method of data collection was questionnaires/surveys (n = 34), followed by interviews (n = 18). The first author's institutional affiliation in 27% (n = 23) of the studies was the Aga Khan University, located in Karachi. The rest of the affiliations were quite scattered, with specialized centers for life-threatening illnesses being most prominent. Additionally, the majority of empirical studies were single center studies with limited generalizability.

The number of included studies per category is as follows:

PC Specific (n = 10)
Pain Management (n = 3)
Perspectives (n = 10)
Cancer (n = 17)
ESRD (n = 22)
Hep B (n = 1)
Opioids/Drug/Pharma (n = 6)
Education/Training (n = 7)
Religious/Ethical (n = 6)
Bereavement/Psychosocial (n = 2)

Synthesis

1. Characterizing the Pakistani Populus

a. Autonomy in the context of a family-centered society

In Pakistan, family is considered the basic unit of society, making all significant happenings a family affair.[8] Religious teachings also emphasize the caretaking of sick family members as a blessed task, especially older members such as parents. Most studies indicated the presence of family support as a prominent coping mechanism for patients, providing a greater sense of comfort and security. This support has a few implications: (i) patients indicated a preference for home-based palliative care, citing the heightened sense of comfort [9,10]; and (ii) patients indicated a general preference to die at home.[8, 9, 11, 12]

Additionally, a few studies addressed disadvantages of a family-centric society in the context of life-threatening illnesses. Firstly, sick patients become increasingly dependent on caregivers and family members, sacrificing independence they have the capacity to maintain. This dependence was at times voluntary as patients now saw themselves as 'eligible' for family support, willingly becoming extremely dependent and subsequently noticing negative changes in their social life.[13] Other times, this dependence was forced by family members onto the patients, catapulting them into unwanted unemployment.[14]

This theme of control goes beyond just patients' social lives, seeping into their medical decisions and treatment management strategies. Bad news regarding diagnosis often reaches family members first, who choose to hide it from patients to prevent them from becoming anxious and worsening their condition. Consequently, these family members end up making healthcare decisions for the patient; as well, the superiority of family autonomy to individual autonomy is generally accepted by physicians.[15] Some studies show a patient preference for decision-making.[10] Some also indicate that a majority of patients want families to be involved in decision-making.[11] In one study on caregiver perspectives, 70% of family caregivers agreed that patients should know about their diagnosis.[16] Zafar et al [12] argue that instead of viewing it as a dichotomy of family autonomy and individual autonomy, there needs to be more work done in characterizing the communication between these complicated relationships.

b. The burden on caregivers

Although family caregivers viewed the task of caretaking as blessed, a majority of caregivers faced intense dependence burden and experienced high rates of anxiety and depression.[17-19] This was especially true for parents who were the primary caregivers for their sick children; many faced emotional distress and found it difficult to manage increased attention requirements from their children. Caregivers had unmet physical, psychosocial, religious, and financial needs. Moreover, caregivers faced an inability to provide sufficient care due to a lack of awareness and lack of access to resources (e.g., caregivers who could manage their dependent's pain would still face difficulties operating equipment). Many studies highlighted an increased need for communication between caregivers and healthcare providers (HCPs) to optimize support.

c. The importance of religion and spirituality as a coping mechanism

Nearly a third (n = 24) of all included studies had strong religious beliefs as a major theme or key finding. Patients engaged in religious practices such as prayer and Quran recitations to cope and those unable to sufficiently pursue those practices longed for avenues to perform them again. Religion also significantly impacted patients' attitudes to death and dying; patients had faith in God's mercy and derived strength from religious beliefs but also accepted death as an inevitable end. They believed life is controlled by the divine and that their time and place of death is predetermined. However, one study showed that some patients viewed their illness as a divine punishment for their misdeeds, a state of mind adversely affecting their mental health.[14] Additionally, there was a recurring theme of patients or their families choosing to first utilize spiritual healers for treatment. Such practices often led to late diagnosis of illness.

Religion and spirituality not only helped patients but also provided HCPs, hospice workers and caregivers with strength. Most of them saw spirituality as a way of life and perceived it as an avenue to better serve humanity. Religious teachings emphasized caretaking of the sick as a blessed task, prompting them to not only develop a sense of belonging for their dependents but to also derive a potent sense of meaning from their work.[20, 21]

2. Palliative Care in the Pakistani Context

a. Current State

Palliative care is extremely difficult to avail in Pakistan. Private sector hospitals such as SKMCH (Shaukat Khanum Memorial Cancer Hospital), AKUH (Aga Khan University Hospital), Children's Cancer Hospital offer basic palliative care services; such services are also available in some Christian hospices.[8] However, none of these institutions have dedicated palliative care facilities, apart from AKUH's home-based palliative care (HBPC) services.[8] AKUH's program is also the only HBPC program in the entire country, limiting options for patients with a preference to experience comfort care or death at home. This availability issue is further worsened by the fact that most PC services are located in urban cities, making the cost and distance of transportation for rural patients objectionably high. Additionally, Pakistani citizens rely heavily on out-of-pocket expenditure to cover healthcare expenses, indicating that the majority of the Pakistani populus cannot afford to employ private sector services.

Most studies highlighted that palliative care is also inaccurately equated to end-of-life (EOL) care in Pakistan; people see the two as synonymous rather than viewing EOL care as a subset of palliative care. In some other studies, this equivalence is implied by palliative care patients being excluded from studies for being 'severely' ill. Most studies highlighted the following as major barriers to palliative care provision in Pakistan: lack of education/training, cultural stigma around discussing death/EOL, and limited access to opioids.

b. Education/Training

The Pakistan Medical and Dental Council (PMDC) and College of Physicians and Surgeons Pakistan (CPSP) do not mandate PC as a component of the undergraduate or postgraduate curriculum.[22] As a result, there are no structured PC training programs in the country leading to a shortage of PC specialists and a stark deficiency in core PC competencies.

Due to religious and/or cultural beliefs, conversations around death/EOL can be difficult as optimism is emphasized at the end-of-life.[8,23] This issue is worsened by the fact that due to a lack of formal training, physicians are untrained in the skill of breaking bad news and find associated conversations difficult. In addition, many physicians also harbor a personal discomfort with discussing death.[23] For EOLC and more broadly PC to be successfully integrated into the primary healthcare system, strong communication skills and strategies must be inculcated in physicians and healthcare workers at large.

To address religiously motivated actions that are potentially detrimental to a patient, a religious scholar may be contacted.[20] This could include the shutting down of conversations regarding comfort care. To address communication difficulties faced by physicians, in the long-run, PC should be integrated into both the undergraduate and postgraduate curricula. A study assessing the effectiveness of a PC module (themes such as counselling skills were addressed) in postgraduate trainees demonstrated increased knowledge, increased confidence levels and improved test scores.[24] Other studies have utilized simulated or standardized patients, allowing for clinical assessment in a controlled setting and providing undergraduates the opportunity to better their communication skills; these studies have showcased significant improvement in communication skills and confidence.[25-28]

Bilal et al [29] conducted a survey to examine awareness of PC in undergraduate students; 75% of students had heard of PC but harbored misconceptions and only 14% wanted to pursue it as a career. In addition, Hamayal et al.'s [30] questionnaire revealed a lack of awareness around patient-centered care. These results underscore the need for PC integration into the medical school curriculum.

c. Access to opioids

Khan et al [31] conducted a questionnaire to examine knowledge of physicians regarding the usage of pain medication according to the WHO cancer pain analgesic ladder. The WHO has a three-step ladder guiding physicians on providing cancer pain relief: the approach starts with using non-opioid analgesics, progressing to mild and moderate opioid analgesics, and in cases of severe pain, suggests the use of potent opioids such as morphine, oxycodone and fentanyl.[32] A little over half of the physicians were familiar with the ladder, however, the majority cited the unavailability of drugs recommended as the reason for not following it. The non-availability of opioids is uniquely harmful to the Pakistani populus as most patients are diagnosed in the late stage, requiring potent opioids for severe pain control. A study on pain adequacy showed that nearly 70% of patients assessed for and prescribed medicine for pain control still suffered high levels of pain due to inadequate control.[33]

The issue of the lack of access to opioids in Pakistan is twofold:

c1. The government's oppressive narcovigilance

Hayat [34] notes Pakistan's contentious geopolitical positioning as contributing to the opioid non-availability crisis. Pakistan borders the world's largest cultivator of opium poppy, Afghanistan, and serves as a key transit corridor to heroin trafficking routes to the USA and Europe; due to the Pakistani army's unreasonable political influence in Pakistan and close relationship with the United States authorities, they maintain a substantial regulatory presence in the legal pharmaceutical market.[34] This narcovigilance has manifested in two ways: (i) state-controlled drug prices and currency devaluations have caused the exit of many pharmaceutical companies, leaving just one registered supplier of pharmaceutical morphine in Pakistan; and (ii) an unnecessarily exhaustive approval process for both pharmaceutical companies to sell opioids and for hospitals to buy them, leading to company stocks expiring before they can be used.[34]

There exists no legal provision in Pakistan to ensure the availability of morphine. To cope with unbearable cancer pain, physicians often direct their patients to procure heroine (morphine's illegal derivative) from illicit street markets.[34] Even if patients succeed, the efficacy and safety of the procured drug remain uncertain.[34] To help tackle this non-availability, clinical trials have been conducted on *Suzetrigine*, a potential non-opioid alternative for palliative pain management.[35] The trials have demonstrated significant analgesic affects, in addition, suzetrigine is expected to lower risk of overdose and dependence.[35] More research is needed to ensure the efficacy and safety of suzetrigine and there is an urgent need to explore additional alternatives suitable to Pakistan's pharmaceutical market.

c2. Opiophobia & the general incompetency of physicians

Opiophobia is the irrational fear of physicians when prescribing opioids to patients who suffer with severe pain; it is often correlated with risk of opioid misuse. Opiophobia is one of the major causes of under-prescription in PC.[36] Studies have indicated physician reluctance in prescribing opioids, citing fear of inducing dependence.[15] Many physicians are also reluctant to prescribe opioids for chronic non-cancer pain.[37] In addition, even undergraduate students have exhibited reluctance about addiction when it comes to using *narcotics* for pain relief.[26] Naz et al [36] developed a tool to identify doctors dealing with opiophobia; this instrument should be utilized to evaluate opiophobia and to help physicians overcome their fears.

A study on opioid use/abuse done by Majid et al [37] showed that although the majority of physicians counselled their patients about drug tapering, only 30% screened patients for opioid addiction and only 30% screened them for depression. This underscores the need for physician training in identifying and managing opioid misuse.

3. Need for multidisciplinary teams

a. Importance of symptom management

Patients with life-threatening illnesses face unmet needs in many domains. In addition, many suffer from a high comorbidity burden due to the complex nature of their disease. A majority of studies indicated unmet psychosocial needs in patients, significantly impacting their QoL and contributing to high rates of anxiety and depression. Most institutions did not offer psychosocial interventions and had no established programs for psychosocial support. Psychosocial interventions, individualized counseling and PC consultations were seen to significantly improve QoL in empirical studies. [38, 39]

ESRD patients must adhere to a strict dietary regimen to see improvement, which significantly impacts both their emotional and social wellbeing as food is a significant of Pakistani gatherings.[14] The lack of a good diet leads to poor nutritional outcomes and malnourishment in ESRD patients.[40, 41] Religion can also play a role as in *Ramadan,* the month of fasting, mortality rates for ESRD patients were higher, possibly due to significant changes in dietary patterns.[42] One study evaluated the effectiveness of dietary counselling in ESRD patients, leading to improved nutritional outcomes and a better QoL; this underscores the need for regular nutritional assessment and dietary counselling for patients with life-threatening illnesses.[43] Furthermore, one study found the prevalence of cardiac abnormalities in patients to be 675, indicating a need for routine cardiovascular assessment.[44] Lastly, one study highlighted the occurrence of sexual dysfunction in female ESRD patients, significantly impacting their sexual lives; this indicates a need for sexual counselling and a closer attention to symptom management as a whole.[45]

Due to a high comorbidity burden, some conditions in patients were left untreated due to overlapping symptoms with other conditions. To best manage symptoms in complex patients to improve QoL, a multidisciplinary team must be employed.

b. Unrealized role of nurses

Some studies are proponents of enhancing and expanding the current role of nurses; reasons cited include nurses being frontline providers and often the ones with the closest and longest interactions with patients and their families. Sajjad et al.'s [39] study employed a nurse to offer individualized patient education and emotional support to chemotherapy patients, ensuring the nurse was always accessible to the patients via telephone, eventually leading to improved QoL. They concluded that if nurses are sufficiently prepared, they can manage symptoms and additional issues.[39] Another study argued nurses could provide adequate cancer pain management if their knowledge was enhanced.[46] Additionally, a study suggested employing pre-dialysis nurses who focus on preventing disease progression by assessing kidney function, providing patient education and collaborating with a multidisciplinary team for psychiatric management.[47]

The main obstacle in realizing this proposal is the provision of adequate education/training for nurses which requires funding, time and curriculum revisions. A few studies have looked at the effectiveness of PC modules and simulated patient interactions for teaching nursing students, and they have demonstrated significant improvements in knowledge.[26,28] Such modules need to be implemented into hospitals and medical schools across the country so that the full potential of nurses can be realized.

c. Unrealized role of clinical pharmacists

Due to the presence of comorbidities in patients with life-threatening illnesses, polypharmacy is common and drug-drug interactions are likely. Additionally, patients often struggle with medication adherence. Clinical pharmacists have the capacity to counsel patients and significantly relieve specialist burden; however, their role is often perceived to be limited to dispensing and inventory management. Many studies have demonstrated the positive impacts of clinical pharmacist counselling, including increased knowledge and improved medication adherence.[48, 49] Furthermore, clinical pharmacists can help ensure the safe use of opioids by suggesting interventions to prevent drug-related problems and to improve patients' QoL.[50]

For the role of clinical pharmacists to be realized, two problems need to be tackled. Firstly, the limited occupational perception of pharmacists should be dismantled as it may be contributing to lack of acceptance of pharmacist-suggested interventions by physicians, possibly preventing patients from having a better QoL.[51] Secondly, there needs to be better regulation of pharmacists and a better training of pharmacists regarding opioid misuse. Mubarak et al.'s [52] study revealed that most pharmacies visited did not have any licensed pharmacists present; moreover, only 30% of pharmacists counselled patients on overdose risks. Additionally, some pharmacists reported they were reluctant to call physicians to clarify opioid-related prescriptions.[52] Alongside better training, direct communication channels should be established between HCPs and clinical pharmacists.

d. Integration of primary care practitioners (PCPs) into the PC pathway

To address the shortage of palliative care specialists, some studies propose the integration of primary care practitioners in the PC pathway to standardize PC provision. Hashmi et al [53] developed a protocol and referral pathway to aid in this integration, emphasizing the capacity of the large PCP workforce to provide basic PC services in a country lacking PC infrastructure. The key roles of PCPs would include early identification and assessment along with timely referral to PC specialists.[53] A study also recommends the integration of PCPs into the cancer care delivery pathway, highlighting their key role in diagnosis.[54] Both studies cite the closer relationship of

PCPs with patients as an advantage, emphasizing that this shift would be in line with Pakistani patients' preference for community care.[53, 54] Although this integration would be a good way to capitalize on the PCP skillset, it requires training PCPs in the diagnosis and identification of life-threatening illnesses such as cancer. This underscores a need to establish a communication channel between PCPs and relevant departments such as the oncology department.

Discussion

This scoping review identified a growing body of literature addressing the state of palliative care in Pakistan. Main themes identified in the Pakistani populus in relation to PC and end-of-life discussion were strong family support, strong religious beliefs and the overwhelming presence of family autonomy in making healthcare decisions for patients. The element of strong family support is also linked to many family members taking on the role of being primary caregivers, which often led to them dealing with anxiety and depression due to a dependence burden.

The main barriers of palliative care provision were found to be a lack of training/education of students and physicians, cultural stigma regarding discussing death, and lack of access to essential medication like opioids. The lack of palliative care in the undergraduate curriculum along with an absence of a formal postgraduate PC program contributed to a shortage of PC specialists in the country, and consequently a deficiency in core palliative care competencies such as communication skills in physicians. The non-availability of opioid medication was largely responsible for sustained unpalliated cancer pain in Pakistan; supreme political forces prevented the free sale/use of morphine in healthcare settings, additionally, physicians demonstrated a reluctance to prescribe opioids due to risk of abuse and lacking knowledge.

It is important to note that most of the studies cited were single center studies with limited generalizability; to add on, many studies had small sample sizes, further limiting their generalizability. Nearly a third of the studies came from AKU, the foremost private sector hospital in Pakistan, possibly indicating a general lack of appreciation for empirical research by most other educational institutions and hospitals. Furthermore, most of the research aimed to identify problems or describe experiences; very few studies were conducted on the implementation of possible solutions. For example, many studies pointed to malnourishment in ESRD patients, but only one study tested the effectiveness of dietary counselling. More implementation research needs to be conducted on larger populations so effective interventions can be proposed.

The review process itself had a few limitations. Firstly, one reviewer screened the studies, leading to possible inconsistencies. Secondly, there was deviance from the typical scoping review methodology as a priori protocol was not developed; additionally, the inclusion criteria and data charting form were developed iteratively throughout and after the screening process. This could have contributed to possible inconsistencies. Lastly, only published articles were sought, and grey literature was not searched, possibly missing out on key findings from lesser-known PC facilities such as Christian hospices.

Conclusion

Palliative care is severely undeveloped in Pakistan. This scoping review points to not only gaps in PC provision, but it also highlights potential ways to leverage existing medical personnel to provide basic PC services. Using the findings from this review, more research should be conducted on the roles of nurses, clinical pharmacists and general practitioners and how their capabilities can be best integrated into a developing PC infrastructure.

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Appendices

Appendix A: Search Strategy

MEDLINE (Ovid)- 1275 results

(palliat* or hospice* or terminal* or end-of-life or "end of life" or life-limiting or "life limiting" or life-threatening or "life threatening" or bereave* or "advanced care planning" or "advance care planning" or end-stage or "end stage" or EOL or "supportive care" or "comfort care" or "critically ill" or "serious illness*" or "seriously ill" or "homecare" or "home care" or "home health*" or "critical care" or "critical illness*" or (patient-centered adj2 care) or (patient centred adj2 care) or (patient-centred adj2 care) or (patient centered adj2 care) or (person centered adj2 care) or (person-centered adj2 care) or (person centred adj2 care) or (person-centred adj2 care) or "grieving" or (pain adj2 management) or (symptom adj2 management) or "psychosocial support*" or (opioid adj2 availability) or opioid analgesi* or morphine* or (symptom adj2 relief) or (pain adj2 relief) or "spiritual support*" or "emotional support*" or "health-related suffering" or "health related suffering" or "support group*" or "dying").tw,kf.

OR

exp Palliative Care/ or exp Terminal Care/ or exp Palliative Medicine/ or exp Hospice Care/ or exp "Hospice and Palliative Care Nursing"/ or palliative.mp.

AND

pakistan*.mp. or exp Pakistan/

EMBASE (Ovid)- 2205 results

(palliat* or hospice* or terminal* or end-of-life or "end of life" or life-limiting or "life limiting" or life-threatening or "life threatening" or bereave* or "advanced care planning" or "advance care planning" or end-stage or "end stage" or EOL or "supportive care" or "comfort care" or "critically ill" or "serious illness*" or "seriously ill" or "homecare" or "home care" or "home health*" or "critical care" or "critical illness*" or (patient-centered adj2 care) or (patient centred adj2 care) or (patient-centred adj2 care) or (patient centered adj2 care) or (person centered adj2 care) or (person-centered adj2 care) or (person centred adj2 care) or (person-centred adj2 care) or "grieving" or (pain adj2 management) or (symptom adj2 management) or "psychosocial support*" or (opioid adj2 availability) or opioid analgesi* or morphine* or (symptom adj2 relief) or (pain adj2 relief) or "spiritual support*" or "emotional support*" or "health-related suffering" or "health related suffering" or "support group*" or "dying").tw,kf.

OR

palliative.mp. or exp palliative chemotherapy/ or exp cancer palliative therapy/ or exp palliative therapy/ or exp palliative nursing/

AND

pakistan*.mp. or exp Pakistan/

AMED (Ovid)- 21 results

(palliat* or hospice* or terminal* or end-of-life or "end of life" or life-limiting or "life limiting" or life-threatening or "life threatening" or bereave* or "advanced care planning" or "advance care planning" or end-stage or "end stage" or EOL or "supportive care" or "comfort care" or "critically ill" or "serious illness*" or "seriously ill" or "homecare" or "home care" or "home health*" or "critical care" or "critical illness*" or (patient-centered adj2 care) or (patient centred adj2 care) or (patient-centred adj2 care) or (patient centered adj2 care) or (person centered adj2 care) or (person-centered adj2 care) or (person centred adj2 care) or (person-centred adj2 care) or "grieving" or (pain adj2 management) or (symptom adj2 management) or "psychosocial support*" or (opioid adj2 availability) or opioid analgesi* or morphine* or (symptom adj2 relief) or (pain adj2 relief) or "spiritual support*" or "emotional support*" or "health-related suffering" or "health related suffering" or "support group*" or "dying" or "death" or "social support*").tw.

OR

palliative care/ or palliative.mp.

AND

Pakistan/ or pakistan*.mp.

CINAHL (EBSCO)- 334 results

palliat* or hospice* or terminal* or end-of-life or "end of life" or life-limiting or "life limiting" or life-threatening or "life threatening" or bereave* or "advanced care planning" or "advance care planning" or end-stage or "end stage" or EOL or "supportive care" or "comfort care" or "critically ill" or "serious illness*" or "seriously ill" or "homecare" or "home care" or "home health*" or "critical care" or "critical illness*" or (patient-centered N2 care) or (patient centred N2 care) or (patient-centred N2 care) or (patient centered N2 care) or (person centered N2 care) or (person-centered N2 care) or (person centred N2 care) or (person-centred N2 care) or "grieving" or (pain N2 management) or (symptom N2 management) or "psychosocial support*" or (opioid N2 availability) or opioid analgesi* or morphine* or (symptom N2 relief) or (pain N2 relief) or "spiritual support*" or "emotional support*" or "health-related suffering" or "health related suffering" or "support group*" or "dying"

^*Search in Title or Abstract or MW*

OR

(MH "Palliative Medicine") OR (MH "Palliative Care") OR (MH "Palliative Care Nursing") OR (MH "Palliative Care Nurses") OR (MH "Hospice and Palliative Nurses Association") OR (MH "Hospice Nurses") OR (MH "Terminal Care") OR (MH "Hospice Care") OR "palliative"

AND

(MH "Pakistan") OR (MH "Pakistanis") OR “pakistan”

OR

TI pakistan* OR AB pakistan* OR MW pakistan*

Appendix B: Categories

		INCLUDED STUDIES	CATEGORY DESCRIPTION:	HOW IS IT RELATED TO PALLIATIVE CARE?
GENERAL/BROAD	PC Specific	10	Anything that contains the words palliative care/EOL/patient-centred care in the title or abstract / demonstrates significant and explicit ties to the topic	Explicit
	Pain Management	3	Status of pain treatment/management services, perspectives of people on/evolution of pain medication	Explicit
	Perspectives	9	Perspectives of different groups/stakeholders (physicians, nurses, hospice workers) on palliative care/EOL or something of relevance - also includes family satisfaction surveys	Helpful for understanding current state of care especially socially + may aid in suggesting potential interventions

DISEASE-SPECIFIC	Cancer	17	Every study related to the specific disease listed has been allocated that category – e.g. knowledge of physicians on cancer palliative care is in the *cancer* category (no specific cancers were included unless there was explicit mention of palliative/supportive care in the abstract) - also includes studies that point to areas of emotional/psychosocial support	Varies (mostly implicit)
	ESRD	22	Same as above + some "chronic" kidney disease studies were included along with studies that point to areas of psychosocial support	Varies (mostly implicit)
	Hep B	1	Same as above	Varies (mostly implicit)

EXTERNAL FACTORS	Opioids/Drug/Pharma	6	Includes studies on motivators of opioid usage, drug abuse, pharmacist intervention/counselling - anything to do with drug/medication availability, DDI management (Drug-to-drug interactions are a common occurence due to the complex nature of terminal illnesses - many comorbities occur)	Opioid use can be easily tied to the goal of pain management - the rest is more so about systemic issues such as how these opioids can become available - is that even an option given the risk of misuse, and whether physicians in Pakistan are sufficiently trained to handle DDI interactions

Education/Training	7	Includes 2 types of studies: 1) those assessing communication skills and the general status of palliative care education, 2) some novel ways to implement effective education models! (e.g., simulations for nurses to develop better communication skills)	
Religious/Ethical	6	Ethical issues/suggestions, problems/social stigma discussing death, some studies on the role of religion/spirituality when it comes to coping	Helps tailor psychosocial support as conversations around death largely center religion (uniquely important to Pakistan due to the prevalence of monotheistic religions that emphasize the dichotomy of heaven/hell)
Bereavement/Psychosocial	2	Includes patient-doctor relationships/dynamics and critiques of those dynamics, bereavement parent-mentor programs/legacy building	Bereavement after death of family is an important facet of palliative care

MISCELLANEOUS	Awareness	0	Awareness campaigns for terminal diseases to foster preventative discipline in the population	Implicit - could be tied to the palliative care goal of "education and advocacy"
	Systemic Issues	0	Includes studies assessing critical care/ICU capacities across the country, addressing caregiver burden (compassion fatigue, burnout) and other systemic issues such as a trend of declining trust in the healthcare system	Implicit - some of these studies are important because if nurses are too fatigued and lack resources, they will simply not have the capacity to provide emotional or psychosocial support to their patients
	CC/Cancer Registry	0	Studies pointing to the need of critical care/cancer registries to better progress in these areas	May help develop palliative care in the long run
	Other	0	Not relevant to any other category	

Appendix C: Data Characteristics

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			PC Specific			
[55] Resham 2024	Reflection	AKU, Karachi	AKU's only pediatric palliative care physician's reflections of her work experience and commentary on Pakistan's palliative care infrastructure			→ PC being equated to EOL care → PC requires interdisciplinary collaboration → Major barriers: lack of training, limited access to opioids, cultural stigma around discussing EOL and weak social systems
[9] Saleem 2024	Review	Shalamar Medical & Dental College, Lahore Saint Louis University, USA	To provide an overview of pediatric palliative care services in Pakistan			→ PC being equated to EOL care → Family autonomy: pediatric EOL dictated by elder family members instead of parents → Major barriers: limited access to opioids, lack of training, cost/distance of transportation was high → Strong family support: preference for homecare → Strong religious beliefs

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[53] Hashmi 2024	Protocol Development	AKU, Karachi	To develop guidelines for standardized palliative care provision in Pakistan			→ Primary care practitioners can address PC specialist shortage → Main role: early identification and diagnosis + timely referral to PC specialists → Shift is in line with patient preference for home/community care
[38] Rafaqat 2023	Empirical	AKU, Karachi	To assess the impact of a palliative care outpatient consultation on symptom burden in terminal patients	Adult patients receiving their first palliative care consultation at the institution's outpatient clinic at any stage of disease	78	→ Comprehensive team of 3 specialists and registered nurses → Pain, anxiety, and depression significantly improved after first visit
[56] Bandeali 2022	Short communication		To urge action for building and supporting palliative care infrastructure in Pakistan			→ Reliance on out-of-pocket health expenditure → Incorporate PC concepts into family medicine → Introduce PC telemedicine consultations
[22] Jabeen 2022	Empirical: Medical records	AKU, Karachi	To evaluate current PC services at AKUH, identify barriers and	Patients admitted to the hospital from 2017-19 with	799 patients admitted under PC	→ Major barriers: lack of training, limited access to opioids, admission only allowed for oncological diseases

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			implement potential solutions	a life-limiting diagnosis on whom a PC consultation was requested	services and 1653 provided with a PC consult	→ Key features of PC program: interdisciplinary team, online app to access PC team members for urgent concerns, referral triaging process → PC being equated to EOL care
[8] Khan 2017	Review	AKU, Karachi	To summarize the cultural and social perspectives in Pakistan with regards to accessing PC			→ Reliance on out-of-pocket health expenditure → Only AKUH offers home-based PC → Strong family support → Strong religious beliefs → Major barriers: lack of training, limited access to opioids
[57] Tariq 2018	Short communication	Jinnah Singh Medical University, Karachi				→ Major barriers: lack of training, communication difficulties → PC being equated to EOL care → International collaboration needed to initiated PC training program
[58] Ul-Ain 2021	Empirical: Survey	The Children's Hospital and University of Child Health Sciences, Lahore	To evaluate the educational needs and competencies in Pediatric PC among pediatricians working in Pakistan	Pediatric residents and pediatricians at teaching hospitals in the Punjab province	284	→ Major barriers: lack of training, communication difficulties → PC being equated to EOL care → Low/below average competency shown in the management of anxiety, use of opioids, and in developing family-centered goals of care

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
						→ Significant interest shown in learning about EOL such as pain management
[15] Ali 2020	Review	KEMU, Lahore	To summarize issues regarding EOL care in Pakistan			→ Major barriers: lack of training, communication difficulties, cultural stigma around discussing EOL → Family autonomy: bad news goes to families first and may never reach patients → Physicians reluctant to prescribe opioids
			Pain Management			
[35] Memon 2025	Commentary	Liaquat University of Medical and Health Sciences, Jamshoro	To summarize clinical trial data for Suzetrigine, a potential non-opioid alternative for palliative pain management			→ Major barriers: limited access to opioids and risk of opioid misuse → Suzetrigine lowers risk of dependence & overdose → Evaluated in 2 randomized trials → Demonstrated statistically and clinically significant analgesic effects
[31] Khan 2024	Empirical: Questionnaire	AKU, Karachi	To evaluate the knowledge and attitudes of physicians and surgeons towards the use of pain	All practicing physicians/surgeons with experience	133	→ Majority of the subjects were familiar with the WHO analgesic ladder → Main reason for not following ladder: limited access to opioids

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			medication according to the WHO cancer pain analgesic ladder	treating cancer patients		→ Inadequate response rate of study indicates that clinical research is a low priority
[34] Hayat 2024	Empirical: qualitative research involving multiple field-sites such as courtrooms, law firms, etc.	UBC, Canada	To investigate how militarized regimes of narcotics sustain severe cancer pain in Pakistan			→ Cancer patients directed to procure heroin from illicit markets due to unavailability of opioids → State-controlled drug prices and currency devaluations have caused the exit of many pharmaceutical companies → No legal provision to ensure morphine remains available
			Perspectives			
[10] Mushtaq 2024	Empirical: Interview	AKU, Karachi	To explore the experiences and opinions of patients and family members on home-based PC services received in Karachi	Patients and family members availing homecare for PC/EOL care	6 patients and 6 family members	→ Patient preference for decision-making → Pros of homecare: greater sense of comfort and security, strong family support, less costly → Cons: hard to maintain equipment → More communication between physicians and caregivers is needed to optimize support

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[59] Usman 2024	Empirical: Survey	AKU, Karachi	To assess knowledge and practices of doctors and identify obstacles in disclosure of bad news	Physicians who passed MBBS and were practicing in selected institutes	1185	→ Majority considered life-threatening diagnoses as bad news, but perception of other diseases differed → Majority found it difficult to deliver bad news due to feeling bad for the patient, loss of hope and lack of knowledge → 87% wanted training through lectures/workshops
[29] Bilal 2024	Empirical: Survey	AKU, Karachi	To assess knowledge and awareness of PC in undergraduate medical students in Pakistan	Undergraduate medical students currently enrolled in MBBS	246	→ PC being equated to EOL care by 31% of participants → Higher awareness was linked to attending private institutions, being in a more advanced year of study and having a higher family income
[30] Hamayal 2024	Empirical: Questionnaire	Federal Medical College, Islamabad	To determine medical students' views on patient-doctor communication and patient-centered care	Medical students from 2nd-5th year at Federal Medical College	322	→ Lack of education/awareness about PCC → Gilgit Baltistan had the most inclination towards PCC, possibly due to strong cultural values of community
[60] Sharieff 2024	Empirical: Survey	Pakistan Kidney and Liver Institute and	To evaluate how well families of deceased	Next-of-kin adult family	42	→ Satisfied with competency of doctors → Lack of psychosocial support → Lack of pain management

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
		Research Centre, Lahore	ICU patients were communicated with	member/caregiver of patient		→ Families coped better with counselling
[61] Kumari 2023	Commentary	Dow University of Health Sciences, Karachi	To showcase the potential of home healthcare in bettering postoperative outcomes for cardiac surgeries			→ Home-based cardiac rehabilitation programs are effective in reducing secondary outcomes and readmissions → Major obstacles: limited access to EOL/hospice care and personnel shortages
[62] Kardosod 2023	Review	Griffith University, Australia	To review the needs and experiences of metastatic spinal cancer caregivers at home			→ 1/8 studies based in Pakistan → Caregivers had physical, psychosocial, religious and financial needs → Need for home-based PC
[20] Lalani 2021	Empirical: Interview	Purdue University, USA	To describe how healthcare providers perceived spiritual care when tending to dying patients and their families in a hospice	Doctors/nurses who had worked in the hospice for at least 1 year	6 healthcare providers	→ Strong religious beliefs → Strong family support as caring for a dying individual is seen as a duty and blessed task → Patients engage in religious practices to cope
[16] Shah 2020	Empirical: Survey	Vancouver Island Health Authority, Canada	To examine the perceptions and	Any adult taking care of a terminal patient	250	→ Most caregivers were family members (spouse/child) → Majority did not understand concept of PC

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
		AKU, Karachi	attitudes of caregivers regarding PC			→ More than half agreed patient should be encouraged to carry out normal activities
[63] Iqbal 2025	Empirical: Medical records	AKU, Karachi	To determine the short-term outcomes of treatment limitation discussions in neonates with life-threatening conditions	Neonates for whom parents/clinicians considered TLDs	115	→ Most common outcome was withdrawing life-sustaining treatment → Transition to home/hospice care is an important consideration
			Cancer			
[64] Zindani 2020	Empirical: Interview	AKU, Karachi	To identify PC needs of adult cancer patients	Adult advanced-stage cancer patients and caregivers	12 patients and 12 caregivers	→ Strong family support: knowledge about patient's PC needs → Patients had physical needs, psychosocial needs, religious needs and financial needs
[65] Shahid 2021	Empirical: Questionnaire	Khyber Teaching Hospital, Peshawar	To explore the unmet psychosocial needs, coping strategies and psychological distress of cancer patients	Adults with cancer	182	→ Women were more prone to psychological distress → Unmet daily living and psychological needs contributed to psychological distress

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[66] Rattani 2022	Empirical: Interview	AKU, Karachi	To examine the experiences of cancer diagnosis, treatment and PC in Pakistan	Adults with cancer, accompanying family members and professionals with minimum 1 year of experience	4 patients, 3 family members and 5 HCPs	→ Patients approach spiritual healers for treatment → Major barriers: cost/distance of transportation was high, limited access to opioids, patients directed to procure heroin from illicit markets → More education and awareness are needed
[48] Malik 2021	Empirical: Questionnaire	Hamdard University, Islamabad	To assess health-related QoL among blood cancer patients	Patients diagnosed with blood cancer	400	→ Most perceived their overall health and QoL as good → Rural setting and tribal area patients had better QoL, possibly due to organic food and better social support → Clinical pharmacist counselling helped patients → Psychosocial interventions are needed
[67] Shams 2018	Empirical: Questionnaire	AKU, Karachi	To evaluate the prevalence of self-care behaviors and satisfaction in women suffering from cancer after exposure to supportive care	Women undergoing weekly chemotherapy	17	→ Psychological counselling session was most appreciated → Sexual counselling was the least appreciated, possibly due to lack of understanding → Strong religious beliefs: most liked mind diversion activity was prayer

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[39] Sajjad 2016	Empirical	Aga Khan Development Network eHealth Resource Center	To evaluate the effect of individualized patient education along with emotional support	Adult female breast cancer patients	25 in intervention and 25 in control	→ Nurse was accessible and available at every chemotherapy session → Statistically significant improvement in overall QoL: physical, social and emotional wellbeing → Strong religious beliefs → Role of nurses can be enhanced
[12] Zafar 2016	Empirical: questionnaire	SKMCH, Lahore	To survey preferences of adult cancer patients in relation to disclosure of prognosis and EOL care	Adult cancer patients currently under treatment	520	→ Majority wanted detailed information about life expectancy and prognosis from GCP → Majority wanted psychosocial support → Many wanted to die at home → Strong religious beliefs: religious wellbeing was the most important consideration towards EOL care
[68] Altaf 2022	Short communication	Shifa Tameer-e-Millat University, Islamabad	To highlight the role of physical therapy in PC for cancer patients			→ Incorporating active exercise can lower fatigue levels and help with symptoms such as pain and anxiety → Incorporate physical therapists in PC
[69] Bibi 2020	Empirical: Survey	Allama Iqbal College of Nursing	To assess nurses' knowledge, attitudes, and practices towards palliative care	Charge nurses serving in oncology wards	100	→ Majority had a positive attitude towards PC → Majority demonstrated PC practices but not accurately due to lack of standardization → Nurses should be educated on PC

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[17] Sajjad 2025	Empirical: Interview	AKU, Karachi	To explore the experiences of child-parent dyads in Pakistan regarding their children's QoL	Receiving treatment for cancer	14 child-parent dyads	→ Strong family support → Extra burden on caregivers drastically impacting lives → Reliance on out-of-pocket health expenditure → Strong religious beliefs by parents and desire to instill these in their children
[70] Zubair 2023	Empirical: Interview	University of Lahore, Lahore	To explore patients' experiences of palliative chemotherapy for non-small cell lung cancer, how they adapt, their beliefs and QoL	Patients who completed at least one cycle of chemotherapy	22	→ Majority found medical staff useful in communication → Some were using complementary medicine → Lack of information given to patients on adverse side effects → Satisfied with psychosocial support → Strong religious beliefs
[71] Rafique 2022	Empirical: Questionnaire	Allama Iqbal Medical College, Lahore	To assess the level of satisfaction, evaluation and care provided to cancer patients in Lahore	Cancer survived patients admitted to Oncology department	180	→ Majority felt doctors/nurses did not have time to sit and talk with them → Majority felt doctors informed them about side effects and their disease as a whole

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[54] Ali 2020	Short communication	KEMU, Lahore	To review relevant literature and suggest recommendations to facilitate cancer care by integration primary care physicians in cancer care pathway			→ Primary care practitioners can address oncologist shortage → PCPs lack the skills to diagnose or treat cancer patients: optimize interface between primary care & oncology → Shift is in line with patient preference for home/community care: closer relationship
[46] Tufail 2017	Empirical: Questionnaire	Combined Military Hospital, Jhelum	To determine association knowledge and attitude of nurses about cancer pain management	Nurses working in oncology units	100	→ Role of nurses can be enhanced → Majority of nurses had inadequate knowledge about cancer pain management → Knowledge significantly associated with attitudes towards pain management
[72] Fayyaz 2021	Empirical: Interview	AKU, Karachi	To evaluate quality of care among adult oncology patients in tertiary care hospitals in Karachi	Adult cancer patients	398	→ Majority satisfied with competency of doctors → Least satisfied with level of information provided and psychosocial support → Reliance on out-of-pocket health expenditure → Majority felt financial situations were not considered by HCP when developing holistic care plan
[33] Majeed 2019	Empirical: Interview	Natchaug Hospital, USA	To explore pain management adequacy in advanced stage	Stage 3-4 cancer patients with	136	→ Emphasis on interdisciplinary approach → Majority of patients prescribed weak opioids

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			cancer patients in Pakistan	active complaint of pain		→ Minority of those prescribed morphine were compliant due to limited access to opioids → Majority had inadequate pain control and suffered → No psychotherapeutic treatment offered for pain
[73] Kashif 2024	Empirical: Questionnaire	University of Veterinary and Animal Sciences, Lahore	To assess the impact of chemotherapy on the nutritional status of breast cancer patients	Breast cancer patients undergoing chemotherapy	200	→ Minority of patients had a normal BMI → Majority were either severely or moderately malnourished → Majority of patients required immediate intervention
			ESRD			
[74] Anees 2014	Empirical: Questionnaire	Shalamar Hospital, Lahore	To determine demographic factors affecting QoL of hemodialysis patients	ESRD patients on mHD	125	→ Higher QoL in the unmarried, unemployed and patients with better financial status → Rural patients had better QoL in physical health/environmental domain → Cost/distance of transportation was high which affects QoL

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
						→ Literate patients have better QoL due to better disease knowledge and awareness
[43] Hajira 2017	Empirical	Institute of Kidney Diseases, Peshawar The University of Agriculture, Peshawar	To evaluate the impact of dietary counselling on the nutritional status of ESRD patients undergoing mHD	ESRD patients on mHD for at least 3 months with protein energy wasting (*state of decreased body stores of protein*)	100	→ Significant increase in body fatness, body protein status and serum cholesterol with dietary counselling → Regular nutritional assessment and timely management is imperative
[75] Malik 2022	Empirical: Interview	Army Medical College, Rawalpindi	To provide in-depth perspectives on kidney care from Pakistani people requiring mHD	Adult patients on dialysis for more than 3 months	20	→ Patients were dissatisfied with physicians' communication and lack of information given regarding disease → Strong family support → Cost/distance of transportation was high → Hard to fulfill responsibilities on dialysis → Strong religious belief: life is controlled by the divine → Majority wanted all resuscitative measures
[11] Saeed 2020	Empirical: Survey	University of Rochester, USA	To evaluate informed decision-making in dialysis and EOL attitudes/beliefs in	Adult patients receiving mHD	522	→ Very few knew what PC/hospice care was → Family autonomy: Majority wanted families to be involved in decision-making → Very few felt uninformed, but majority had inaccurate perceptions of prognosis

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			Pakistani patients receiving dialysis			→ Majority reported never discussing life expectancy → Majority wanted all resuscitative measures → Major barriers: lack of PC specialists, lack of training, communication difficulties → Strong family support
[76] Hussain 2023	Empirical: Questionnaire	Lahore General Hospital, Lahore	To evaluate knowledge, adherence, and perception of ESRD patients towards treatment regimen and their determinants	ESRD patients receiving dialysis for at least 3 months and at least twice weekly	119	→ Very few patients showed good adherence → Most common cause of non-adherence: anxiety, sickness, work problems → Minority was adherence to diet recommendations → People using their own transport were more likely to show better adherence
[14] Shouket 2022	Empirical: Interview	Edith Cowan University, Australia	To examine lived experienced of maintenance hemodialysis patients in Pakistan	ESRD patients receiving mHD for at least 6 months; HCPs who have worked with HD patients for >1 year	24 patients and 6 HCPs	→ Difficult to adhere to dietary restrictions → Strong family support, however, sometimes dependency is forced → Strong religious beliefs, however, viewing dialysis as a punishment for misdeeds adversely affects mental health → Constant thoughts of inevitable death
[45] Shah 2022	Empirical: Interview	Nishtar Medical University, Multan	To determine sexual dysfunction in female patients on	Married female patients who were living with their	55	→ Anxiety found in 20% and depression found in 31% if patients

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			hemodialysis and examine its relationship with anxiety and depression	husbands for the past 4 weeks		→ As patient becomes depressed due to disease, libido and sexual satisfaction decrease (significant correlation) → Sexual arousal was he most serious sexual problem
[18] Lanewala 2023	Empirical: Survey + Case Study	SIUT, Karachi	To determine the costs associated with "free" pediatric hemodialysis	Primary caretakers of children at dialysis initiation and receiving regular maintenance dialysis for >1 year	52	→ Overwhelming majority of children deprived of education after dialysis → Extra burden on caregivers; experiencing anxiety and depression → Strong family support → Strong religious beliefs that allow them to cope → Cost/distance of transportation was high → Social support must be provided to parents
[77] Satti 2019	Empirical: Questionnaire	Rawalpindi Medical University and Allied Hospitals, Rawalpindi	To report the prevalence of uremic pruritus and assess its effects on the patient's QoL	ESRD patients on mHD for at least 3 months	173 males	→ Uremic pruritus was prevalence in 49% of patients and significantly contributed to depression symptoms and lower QoL → Remains undertreated in many patients
[19] Raza 2023	Empirical: Interview	Bahauddin Zakariya University, Multan	To determine depression and anxiety experienced by unpaid caregivers of HD	Unpaid caregivers of ESRD patients receiving HD	2018	→ Extra burden on caregivers; experiencing anxiety and depression, especially due to dependence burden → Most patients showed severe to moderate dependence on caregivers

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			patients suffering from ESRD			→ Most caregivers were spouses and parents → Low socioeconomic status linked to higher anxiety and depression
[78] Bokhari 2017	Empirical: Questionnaire	Allama Iqbal Medical College, Lahore	To examine the prevalence and severity of depression in chronic HD patients at a tertiary care center	Adult patients on mHD thrice weekly	64	→ Majority of patients found to have moderate to very severe depression → Longer duration of HD meant higher depression rate → If provided in the dialysis unit, many patients response well to psychotherapy
[79] German 2025	Empirical: blood tests	SIUT, Karachi	To assess the prevalence of thyroid dysfunction in HD patients at the SIUT, Karachi	Adult patients on mHD for at least 3 months	113	→ Most common commodities: HT and Diabetes → Almost a quarter had thyroid dysfunction with risk factor for hypothyroidism being female gender, longer HD duration and lower leukocyte/platelet count → Underscores importance of regular screening
[80] Islam 2025	Empirical: Questionnaire	University of the Punjab, Lahore	To examine the factors associated the HD patients' QoL in Lahore	Adult cases admitted with a diagnosis of kidney disease	384	→ Patients with higher QoL include patients who are single, literate, actively employed and lack comorbidities like HT/Diabetes → Less family distress and being hopeful also contributed to a higher QoL

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[41] Ghazi 2021	Empirical: blood tests	The Kidney Centre Post Graduate Training Institute, Karachi	To determine HD patients' nutritional status in Pakistan	Adult patients undergoing mHD for >6 months	150	→ Most common comorbidity: Hypertension → Majority of patients had mild/moderate malnourishment, which adversely affects QoL → Risk factors for malnourishment: female gender and longer duration of HD → Underscores need for dietary counseling
[44] Ehsan 2021	Empirical	SIUT, Karachi	To determine the prevalence of cardiac abnormalities in children diagnosed with CKD	1-15 years old diagnosed with CKD in their pre-dialysis period	106	→ Prevalence of cardiac abnormalities was 67%, indicating compromised cardiac function during the pre-dialysis period → Risk of cardiac abnormalities increases with CKD stage → Underscores need for routine cardiovascular assessment
[49] Khokhar 2020	Empirical: Questionnaire	Lahore College for Women University, Lahore	To evaluate effectiveness of pharmacist interventions in pre-dialysis CKD patients to improve disease knowledge and medication adherence	Adult patients visiting nephrology department with CKD diagnosis of stage 2-4	60 in intervention and 60 in control	→ Intervention group received individualized pharmacist counseling session on disease knowledge, medication adherence and dietary modifications → Increased knowledge score and medication adherence in intervention group after follow-up → Recognize the role of clinical pharmacists

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[81] Kainat 2020	Empirical: Questionnaire	GCU, Lahore	To examine the relationship between anger, suicidal ideation and sleep disturbance in HD patients	Patients on dialysis for at least 3 months	70	→ Significant positive correlation between sleep disturbance and suicidal ideation → Troubled sleep due to fatigue possibly led to suicidal ideation
[40] Bokhari 2018	Empirical: Questionnaire	Jinnah Hospital, Lahore	To explore whether traditional parameters have statistically significant correlation with malnutrition	ESRD patients >25 years old on HD for at least 3 months		→ 2/3rds of the patients were malnourished due to lack of dietary counseling and limited access to a balanced diet → Significant correlation between HD and malnutrition, however, malnutrition could not be correlated to dialysis frequency, age, or comorbidities → Patients showed depressive symptoms which could not be correlated to malnutrition either
[47] Zafar 2024	Review	AKU, Karachi	To propose employing pre-dialysis nurses to overcome kidney disease burden in Pakistan			→ Pre-dialysis nurses would assess kidney function, collaborate with a multidisciplinary team to facilitate psychiatric and dietary management and would educate patients → Role of nurses can be enhanced → Challenge: education/training → Simple referral process should be established

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
[82] Hussain 2022	Empirical: Medical records & lab data	Shaikh Zayed Hospital, Rahim Yar Khan	To determine the frequency of refusal or acceptance of HD by AKI/ESRD patients with indication for HD	14-80 year old patients with AKI/ESRD with a medical indication for HD	150	→ Majority refused HD → Majority consulted with spiritual healers and homeopathic doctors → Major causes for refusal: wanted a second opinion, lifelong nature, high cost, poor outcomes in family → Major causes for acceptance: trust in doctor and fear of death without dialysis
[13] Nafees 2022	Empirical: Interview	Riphah International University, Faisalabad	To highlight problems faced by ESRD patients and suggest policy measures to eradicate social problems	Adult ESRD patients receiving HD	105	→ Most common comorbidities: HT and Diabetes → Majority live in rural areas → Women more likely to experience anxiety & depression → Strong family support: dependence on family members impacts social life → Cost/distance of transportation was high
[83] Mahmood 2018	Empirical: Questionnaire	Khyber Teaching Hospital, Peshawar	To examine for comorbidities in HD patients	ESRD patients on mHD for at least 3 months	177	→ Very few were undergoing the recommended frequency of dialysis thrice weekly → Most common comorbidities: HT, Cardiac Diseases & Diabetes → Majority of patients taking >5 drugs in a single day

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						→ High comorbidity burden found in all stages of CKD
			Hep B			
[84] Sohail 2018	Empirical: Interview	University of Sargodha, Sargodha	To explore the ways in which social support impacts terminal patients with chronic liver disease	Terminally ill patients with chronic liver disease	21	→ Majority were from rural areas → Lack of social support leads to emotional disturbance → Social support improves QoL and provides a better inclination towards recovery → Helps patients fight back against social isolation
			Opioids/Drug/Pharma			
[37] Majid 2019	Empirical: Questionnaire	Dow University of Health Sciences, Karachi	To report the prescription practice, attitude and belief regarding use and abuse of opioids	Doctors who have experience practicing for at least 2 years	208	→ Only 1/3 doctors screened patients for opioid addiction → Only 1/3 doctors regularly screened for depression

Reference, First Author, Year	Study Type: Method of Data Collection	Institutional Affiliation of First Author	Aim	Population	Sample Size	Key Findings
			among Karachi doctors			→ Majority counselled patients about drug tapering → Majority were reluctant to prescribe opioids for chronic non-cancer pain
[36] Naz 2023	Empirical: Survey	Foundation University, Islamabad	To represent the development and validation of a reliable instrument for measuring opiophobia for doctors in Pakistan	Doctors from the Oncology department, ICU and those who deal with patients with severe chronic pain	100	→ Opiophobia is one of the main causes of under-prescription in PC → Instrument is effective in identifying doctors who have fears prescribing opioids to patients with chronic pain → Should be used to evaluate opiophobia severity and help physicians overcome their fears
[50] Anwar 2024	Empirical: Medication orders	SKMCH, Lahore	To examine clinical pharmacist interventions and identify opioid medication-related issues in cancer patients	Cancer patients who were prescribed opioids for pain management and had opioid orders initiated by a pharmacist	10534	→ Overwhelming majority of clinical pharmacist interventions were accepted by physicians → Most interventions aimed to improve patient's QoL or were preventative and improved patient condition → Interventions ensured safe use of opioids, prevented many drug-related issues and optimized therapies → Recognize the role of clinical pharmacists
[52] Mubarak 2023	Empirical: Survey	Lahore University of Biological and	To evaluate the practices and competencies of	Hospital pharmacist was defined as a	504 community pharmacists	→ Almost half sometimes/never made clinical notes to monitor opioid use

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		Applied Sciences, Lahore	community and hospital pharmacists in relation to opioid use and dispensing (across Punjab, Pakistan)	pharmacy within the premises of a hospital	and 279 hospital pharmacists	→ Only 1/3 doctors counsel patients on side effects/overdose risks → Small minority reported they contact police/physicians regarding opioid misuse; pharmacists were reluctant to call physicians for opioid prescription clarifications → Majority of pharmacies did not have pharmacists present → Lowest competency in opioid overdose management, opioid use monitoring and therapeutic use of opioids
[51] Zafar 2025	Empirical: Patient data & questionnaire	Abdul Wali Khan University, Mardan North West General Hospital and Research Centre, Peshawar	To evaluate the impact of clinical pharmacist-led interventions on the mean number of drug-related problems (DRPs) and the mean QoL score	Adult patients who were either currently or previously diagnosed with all stages of renal disease	50 in control and 50 in intervention	→ 230 DRPs identified, majority attributed to inappropriate drug selection; decreased by 46% via pharmacist interventions → Only 1/3 interventions were fully accepted and implemented by physicians, possibly due to a limited occupational perception of pharmacists → Interventions contributed to a statistically significant improvement in QoL
[85] Zafar 2023	Empirical: Patient data	Abdul Wali Khan University, Mardan North West General Hospital and	To compare the incidence and associated risk factors	Adult patients who were either currently or previously diagnosed with	358	→ Most common comorbidities: HT & Diabetes → Private hospital has more pDDIs due to more drugs prescribed → Patients with CKD are at increased risk of pDDIs

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		Research Centre, Peshawar	if pDDIs among CKD patients	end-stage renal disease		→ Risk of pDDIs was higher in public hospitals, possibly due to overburdened nephrologists and lack of pDDIs scanning facilities → Recognize the role of clinical pharmacists by involving them to assess pDDIs and provide patient education/counselling
			Education/Training			
[5] Riaz 2021	Review	AKU, Karachi	To summarize the published literature pertaining to training and education of postgraduate trainees in PC and EOL care			→ PC is undeveloped in Pakistan → Physicians lack core competencies → Different strategies to teach use of didactic teaching approaches, small group discussions, role-plays, interaction with simulated patients and vides of clinical encounters → Consider incorporation of cultural/religious differences
[86] Farooq 2023	Empirical: Online course & quizzes	Indus Hospital & Health Network, Karachi	To enhance understanding of psychosocial support for childhood cancer patients and their	Course was open to healthcare workers of various disciplines involved with	67	→ Most registered participants were psychologists → Overwhelming majority agreed to change practices after attending sessions → All said they would recommend this course to others

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			families through education and training	pediatric oncology care		→ Majority gained significant knowledge regarding the importance of psychosocial services → Establishing counseling and mental health services is important
[25] Kurji 2021	Review	AKU, Karachi	To document how the AKUH faculty planned and implemented the telesimulation strategy during COVID-19			→ Teaching SPIKES model to break bad news is an important objective of PC/EOL module → Used telesimulation to assess knowledge of communication skills → Most trainee nurse interns (TNIs) appreciated learning in a safe and meaningful environment, found it a positive experience and states it increased their confidence in communicating with patients → Difficulty connecting due to IT issues and some found comforting virtually difficult
[26] Rattani 2020	Empirical: Questionnaire	AKU, Karachi	To measure the effectiveness of high-fidelity simulation to teach EOL care in a PC course for undergraduate nursing students	Undergraduate student nurses enrolled in concepts of palliative nursing course at AKU	42	→ High-fidelity patient simulations use computerized manikins to simulate real-life scenarios → Strong religious beliefs had a potent influence on their attitude to death and dying → Significant improvement in the negative attitudes of participants after intervention

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						→ Students were reluctant about addiction when it came to using narcotics as pain relievers rather than viewing it as comfort care
[24] Jabeen 2023	Empirical: Online quizzes	AKU, Karachi	To identify the improvement in attitudes and knowledge of Family Medicine postgraduate trainees towards PC following an online educational PC module for effective care provision to patients with advanced disease	Postgraduate trainees (PGT) in the Family Medicine Department of AKUH	13	→ Important themes PGT wanted during pre-module: symptom management, counseling skills & polypharmacy → Majority agreed PC is important for family physicians → Post-module: majority agreed objectives were achieved, most useful sessions were symptom management and communication skills → Improvement of 12% in test score → Changed perception of PC from EOL care to holistic care
[27] Qureshi 2020	Empirical: Patient feedback	Isra University, Islamabad	To explore whether simulated patient's feedback improves the communication skills of undergraduate medical students	Students of final year clerkship at Isra University	40 in control and 40 in intervention	→ Standardized patients rated students' ability to keep a patient-centered approach → Significant improvement in communication skills after receiving feedback → Main advantage: assessment in a controlled setting where risk to patient/student is minimized

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						→ Include simulated patients in teaching and assessment
[28] Siddiqui 2023	Empirical: Questionnaire	Shaheed Mohtarma Benazir Bhutto Medical University, Larkana	To assess the effectiveness of simulation-based training in nursing education and its effects on preparing nurses for clinical practice	Undergraduate nursing students currently enrolled in the fundamental and advanced adult healthcare and critical care classes	70	→ Significant improvements observed across all aspects after intervention such as confidence, communication skills and learning procedures → Simulation provides a safe and controlled environment → Helps nurses prepare for the challenges of clinical practice
			Religious/Ethical			
[42] Imtiaz 2015	Empirical: patient data	The Kidney Center Postgraduate Training Institure, Karachi	To evaluate the effect of the month of Ramadan on HD patient mortality and to compare it with other Islamic months	ESRD patients on mHD for more than 3 months	1841 registered patients, 897 who died	→ Frequency of death was higher in Ramadan compared with other months → Ramadan had an independent effect on mortality, possibly due to significant changes in dietary patterns
[87] Wijeyaratne 2025	Review	University of Melbourne, Australia	To increase understanding of what			→ 7 studies included from Pakistan → Almost all studies mention strong religious beliefs and emotional support → Strong family support

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			is deemed a good death in South Asia			→ Belief that time and place of death is predetermined by God; last rites were considered critical and a marker of dignity
[88] Ahmad 2024	Empirical: Interview	University of the Punjab, Lahore	To explain the interaction between spirituality, religion and social support in coping with terminal illness among Muslim hepatitis C patients	Hepatitis C patients aged between 28 and 55 years old, admitted to the liver hospital	12	→ Majority belonged to low socioeconomic status → Strong religious beliefs such as having faith in God's mercy and accepting death as an ultimate reality → Illness affects their ability to perform religious practices and they long for that → Some experience stronger connection with God after illness
[89] Sohail 2020	Empirical: Interview	University of Sargodha, Sargodha	To explore the impact of age, gender and education on adoption of coping strategies in hepatitis patients	People infected with hepatitis C at the chronic stage	500	→ Strong religious beliefs → Overwhelming majority pray to God for recovery and pain relief, & derive strength from religious beliefs → Almost half cope with loneliness via spirituality
[21] Lalani 2019	Empirical: Interview	University of Calgary, Canada	To report the experiences of spirituality among family caregivers of terminal patients in a	Family caregivers of terminal patients at the site	18	→ Strong religious beliefs → Cost/distance of transportation was high → Strong family support → Family caregivers said they were unable to provide sufficient care due to poverty, lack of access to resources and lack of awareness

Reference, First Author, Year	**Study Type: Method of Data Collection**	**Institutional Affiliation of First Author**	**Aim**	**Population**	**Sample Size**	**Key Findings**
			hospice setting in Karachi			→ Family caregivers used spiritual healers
Bereavement/Psychosocial						
[23] Syed 2017	Empirical: Questionnaire	AKU, Karachi	To examine the barriers and perceptions in code status discussions by physicians	AKU physicians who had discussed at least 5 code statuses in their lifetime	134	→ Majority of physicians preferred counseling rooms for code status discussions → Personal barriers: lack of knowledge regarding prognosis & discomfort with death → Hospital barriers: time constraints, & poor nursing care after declaring DNR → Most frequent obstacles: family-related barriers (conflicts within family, literary of family) → Family wants to avoid steps that could hasten death, leading to overestimation of CPR
[90] Resham 2025	Empirical: Interview	AKU, Karachi	To examine how current pediatric oncology care practices for children with life-threatening illnesses impact their relationships and communication	Children with life-threatening illness receiving treatment, their families and HCPs	19 children, 22 family members and 19 HCPs	→ Highlights importance of communication → Doctors were open to addressing questions/concerns → Strong religious beliefs → Multidisciplinary team is needed but there is no formal training for palliative care in Pakistan

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			regarding illness and treatment			
[91] Ahmad 2015	Empirical: Questionnaire	CMH Lahore Medical College and Institure of Dentistry, Lahore	To evaluate the leaning of medical students towards either doctor-centered acre or patient-centered care	Medical students in years 1-5	783	→ Pakistani students are mainly doctor-centered → Attributes associated with patient-centered care: studying in a private medical college, foreign background, rotating in clinical settings → Integrate patient-centered care into undergraduate curriculum