

QATAR UNIVERSITY

COLLEGE OF PHARMACY

EXPLORING HEALTHCARE PROVIDER PERCEPTIONS OF NARCOTIC USE

RELATED TO CANCER PAIN TREATMENT IN QATAR

BY

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## ABSTRACT

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Title: EXPLORING HEALTHCARE PROVIDER PERCEPTIONS OF NARCOTIC USE RELATED TO CANCER PAIN TREATMENT IN QATAR

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**Purpose:** The aim of this thesis to explore narcotic use for cancer patients in Qatar from health professional perspectives, in order to further understand facilitators and barriers for optimal prescribing, including any impact of culture. **Methods:** Eight focus groups were conducted with health care professionals (physicians, pharmacists, and nurses) purposively sampled from the National Center for Cancer Care & Research (NCCCR). An 8-question discussion guide framed discussions and targeted cultural beliefs. Focus groups were audio-recorded and transcribed verbatim. An inductive open coding technique was used to analyze transcripts for content and themes. **Results:** Eight physicians, sixteen pharmacists, and twelve nurses from various NCCCR care settings participated. Four major themes identified from the focus group discussions: Narcotic use process, availability of specialized care, patient-related factors, and healthcare professional related factors. Majority of participants believed narcotics have a major role in cancer pain management. Law was overwhelmingly stated as the main barrier. Family involvement and fear of opioid were commonly mentioned. Physician cultural beliefs were not perceived as a barrier by most of the participants, aside from physicians themselves. Major facilitators were specialized pain management programs and referrals

to these teams, as well as patient counseling. **Conclusion:** Health professionals identified a multitude of facilitators and barriers perceived to influence achievement of optimal narcotic use in Qatar. These findings support the notion that narcotic utilization is not simply influenced by a single factor or subset of factors but by a multitude of factors that can be both independent and interrelated. As such, any intervention targeted to optimize the use of narcotics in any particular setting must be well researched and grounded within the local context. Future studies should explore the concept of optimal narcotic use from patient and policymaker perspectives.

## DEDICATION

*This work is dedicated to my family for their support and love*

*To my mother Iman*

*To my husband Ahmad*

*To my gorgeous kids Lamar & Tarek*

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## CHAPTER 1: INTRODUCTION

In 2011, the Supreme Council of Health in Qatar (now named the Ministry of Public Health) launched the National Health Strategy 2011-2016. This strategy aimed to deliver a world-class healthcare system through the implementation of projects related to infrastructure, human resources, program development, education, and others. Specifically, Project 5.4 focused on the regulation of healthcare products, including narcotics. This strategy initially documented that use of narcotics in Qatar was low and this was due to physician's cultural beliefs (1). At the time, no reference was given for this statement and it was therefore deemed to require further investigation. This thesis explores narcotic use for cancer patients in Qatar from health professional perspectives, in order to further understand facilitators and barriers for optimal prescribing, including any impact of culture. This introduction chapter provides an overview of cancer pain, a review of narcotic use for cancer pain treatment, and a literature of review of studies assessing pain outcomes, narcotic utilization, and facilitators and barriers to optimal use from a regional, Middle Eastern perspective. The chapter concludes with the specific research question and objectives that guided the completion of this thesis.

### 1.1 Overview of pain

Pain is a perceptual phenomenon that is difficult in identification, diagnosing, and management (2, 3). The concept of pain is not well-defined but most specifically refers to "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage"(4). It is also described as stressor,

which means "any experience, physiological or psychological, that disrupts homeostasis". When pain becomes persistent and unrelieved, destructive stress response occurs by dysregulation of the neuroendocrine system, along with diminishing mental and physical performance, which overall results in undesirable consequences and patient suffering (5). In fact, a direct relationship has been proposed that attempts to relate uncontrolled or overwhelming pain with patient suffering. For example, patient suffering increases when a patient begins to feel pain is out of control. This may also be compounded by a practitioner's approach to pain management, especially if they cannot find an organic cause for the pain and simply believe it to be psychological. Consequently, uncontrolled pain can have detrimental effects on a patient's health status and quality of life. It is therefore required that any pain management program must be individualized for each unique patient case, with a focus on recognition and acknowledgment of a patient's root suffering and physical or psychological wellbeing (6).

## 1.2 Classification of pain

Pain can be classified in many different ways. First, the two major types of pain are commonly referred to as nociceptive and neuropathic. A third type of pain, psychogenic, is also referred to in the literature (2, 7, 8). Each is described below:

- *Nociceptive pain*: Activation of non-neural superficial or deep tissue pain receptors (nociceptors) due to tissue injury or inflammation (e.g. wounds, fracture, burns).

- i. **Somatic Pain:** Pain is sharp and localized, felt on the skin, muscle, joints, bones and ligaments.
  - ii. **Visceral Pain:** Pain originates in the internal organs and body cavities (e.g. bowels, spleen, liver and kidneys). It is usually poorly localized with greater constancy.
- *Neuropathic pain:* Pain initiated due to dysfunction of the somatosensory nervous system, which occurs either centrally or peripherally within the nervous system. The pain results from: trauma, infection, cancer, ischemia or other idiopathic reasons. Pain is characterized as burning, shooting, tingling, numbness or electrical in nature.
  - *Psychogenic pain:* Pain arising in the absence of any visible injury and where the main etiology is deemed to be psychological.

Pain can be further classified according to its origin and duration. Specifically, pain can present as acute, chronic (non-cancer), or pain resulting from cancer (also sometimes referred to as palliative pain) (2). The distinguishing features of each are provided in Table 1.2. The types of pain described in Table 1.2 may overlap and not be completely discrete. For example, acute pain can translate into chronic non-cancer pain, if left untreated. This underscores the need for adequate recognition and treatment(9). Additionally, cancer pain can present as acute or chronic. Acute forms of cancer pain

may be due to structural damage, injury, or operations. Chronic forms may be disease progression related and also have elements of nerve involvement(2, 10).

### 1.3 Pain assessment

As stated above, it is very important to ensure adequate and timely recognition of pain to ensure treatment success and prevent further complications. The presence and intensity of pain can be captured using different tools and parameters. For example, the use of self-reported pain scales to assess pain is sensitive in assessing the patient's perception of their current pain status. These scales are subjective to the patient's feelings and aim to determine the intensity of pain at the present time point and the average pain over the previous 24 hours(8). The most commonly used scales for this purpose are discussed below (11):

- *The Numerical Rating Scale (NRS)*: is widely used across patients that experience pain episodes. The scale is single item 11 point rating scale that allows the patient to rate pain on a scale of 0 indicating "no pain" to a 10 indicating "worst pain imaginable".
- *The Verbal Rating Scale (VRS)*: substitutes the numbers from the NRS with descriptive words on a scale from 'no pain' to 'severe pain'. The words are then translated into a numerical value: 0= No Pain, 1= Mild, 2= Moderate and 3= Severe.

- *The Visual Analogue Scale (VAS)*: is a 10 cm line with 'no pain' at the start and 'worst pain imaginable' at the end. Patients mark a point on the line to express the current intensity of pain they are experiencing. The scale may also be supplemented with faces that are meant to represent the pain intensity at the corresponding numerical value.

As patients may not always be able to vocalize or self-report pain, other monitoring parameters can help clinicians evaluate for pain presence and intensity. Patients may appear distraught, have trouble sleeping, have increased blood pressure and heart rate, be sweating, have dyspnea, or grimace upon movement. The presence of these signs and symptoms can also help clinicians ensure patient's reporting of pain is accurate and truthful(7, 11).

#### 1.4 Cancer pain management / treatment

Achieving quality pain management depends on several measures including comprehensive pain assessment, implementing pain treatment that meets the patient's needs, frequently reassessing a patient's responses to the treatment and having a plan of care that is safe, patient-centered, and culturally appropriate (12). Documenting the impact of pain on a patient's physical and mental functioning is also vital throughout treatment (13). Pain treatment should also be multi-disciplinary, including input from physicians, pharmacists, nurses, psychologists, physical therapists, occupational therapists, and others where applicable.

Clinicians must work collaboratively, in order to ensure the best possible patient outcomes through implementation of a coordinated care plan.

The management of cancer pain presents many challenges, especially for patients with advanced disease. As such, for end stage pain treatment, it is recommended to have a palliative care unit centralize the management of pain (14). Although palliative care is a relatively new concept in the Middle East, it appears that practitioners are already recognizing the importance. A survey was conducted among 15 Middle Eastern Countries to determine the knowledge, belief and barriers regarding palliative care services. The sample contained physicians, nurses, and other healthcare professionals. Most of participants recognized the need for initiating palliative care services, as well giving high priority to education and training among them to help in decreasing patients suffering from pain (15). Similarly, a survey was conducted in the State of Qatar that recruited medical oncologists to determine their level of awareness and knowledge towards palliative care services. Again, most of the respondents acknowledged the importance of such services and showed interest in palliative care filed (16).

Pain medications, as discussed below, are the cornerstone of cancer pain management. The appropriate use of medications is essential for the treatment of cancer pain. Creation of evidence-based guidelines for pain management is difficult, however, due to the highly individualized nature of the pain, the WHO has published a stepladder approach for treatment of cancer pain according to severity and this is likely the most commonly followed guideline to date (17). A key component of the strategy is to ensure patients are promptly given medication once pain occurs and attempting to prevent pain by using a strategy of regular dosing, rather than always giving on demand. The ladder is



based on three types of pain medications: non-opioids, weak opioids, and strong opioids. The use of these different medication classes across the pain intensity spectrum are given below (2, 17):

- i. *Mild pain*: Acetaminophen as first line treatment
- ii. *Mild to moderate pain*: NSAIDs.
- iii. *Moderate pain and pain not responding to NSAIDs*: mild opioid (codeine, oxycodone, and hydrocodone).
- iv. *Severe pain and pain not responding to mild opioid*: stronger opioids such as morphine, fentanyl, and methadone along with adjuvant analgesics for anxiety/mood disorder such as antidepressants, anticonvulsants, muscle relaxants, or anti-histamines.

### 1.5 Opioid/narcotics and pain management

As demonstrated above, opioids are essential for the management of moderate to severe cancer pain. These medications are derived from opium, which is an extract from poppies. Opioid medications, also referred to as narcotics, are mainly used for analgesia (although other indications also exist) (18). Therapeutic effects are accomplished by binding of the medication to specific opioid receptors in the body that result in a pain relief response. Opioids can be short or long acting and are available across a variety of dosage forms, such as injections, transdermal patches and tablet formulations. Short acting opioids typically have a rapid onset of action yet and a sustained period of pain relief for approximately 3 to 4 hours. Longer-acting formulations can results in pain relief

periods nearing 12 or more hours (19). Opioids create their therapeutic effects by binding to opioid receptors located in the central nervous system. This relationship between drug and receptor is responsible for the potent analgesic effects of opioids (20). However, binding to a certain subtype of opioid receptors (mu receptors) results in pleasurable side effects that make opioids prone to abuse and misuse (21). For these reasons, many countries tightly regulate and restrict opioid use in order to limit divergence of prescription products to the illegal drug trade.

#### 1.6 Pain relief in cancer

As pain is one of the most important symptoms that occur in cancer patients, it is of the utmost importance to ensure that it is adequately treated. Due to the propensity for overuse/abuse and resulting laws, policies, and stigma related to prescribing, adequate treatment with opioids does not always occur. In fact, overuse and underuse can easily occur. The WHO ladder, as mentioned previously, provides a good approach to pain management yet these recommendations are not always adhered to. Inadequate relief of cancer pain still persists even with these endorsed guidelines. Although it is difficult to determine the extent of under-treatment, some literature is available to help conceptualize the problem. A retrospective analysis of database at the Sunnybrook Odette Cancer Centre in Ontario, Canada assessing the prevalence of under-treatment cancer pain in outpatient palliative radiotherapy for cancer patients enrolled from period of January 2009 and March 2015. The overall result documented that approximately 30% of cancer patients were not achieving adequate pain control in the outpatient palliative clinics (22).

As medication utilization and treatment of pain is largely context specific, the following section summarizes available literature from the Middle Eastern region as a whole.

### 1.7 Achievement of pain outcomes in the Middle East

Setting likely has a major influence on the treatment of pain and therefore any noted discrepancies should be evaluated within an appropriate context. In the Middle East (ME) region and precisely Gulf region, few studies were identified that attempt to investigate pain management in cancer patients. A prospective observational study was completed in the oncology unit of King Khalid University Hospital, Riyadh, Saudi Arabia to assess the appropriateness of pain management in 160 cancer patients during period of May to October 2006. The study revealed that moderate to severe pain was experienced by 80 patients (50%) and from those 40% did not have any analgesic available to treat the pain. Other findings showed that pain assessment was insufficiently documented (43% prior to treatment) and no standard tool was used to measure pain intensity. Additionally, 29.5% of those patients prescribed opioid received by non-oral routes, despite the ability to take oral medications. The findings of this study are important as they provide evidence that under-treatment of pain may be a problem in the region and that it could be due to numerous factors, including availability and use of assessment tools (23).

A second study from Saudi Arabia used a cross-sectional survey design to capture pain treatment outcomes among cancer patients in the outpatient palliative care unit in King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia. The study aimed to determine the prevalence and the severity of cancer pain among newly

diagnosed and monitored patients using a numerical scoring system (mild = 1-4, moderate = 5-6 and severe = 7-10). The data from a survey of 124 patients with 67% patients identified as 'new' and 33% as 'follow-up' revealed that majority reported some form of pain (85.5%) with the mean intensity score of 4.6 and median of 5. A total of 54 (51%) scored pain severity above 4 and the average pain scores were not statistically different between new patients and those being followed up. Moreover, this study adds to the argument that there is room for optimization of pain control in the region, yet exact facilitators and barriers to achieve this are unknown (24).

In relation to narcotics consumption for pain management, the International Narcotics Control Board (INCB) revealed the statistical report for the opioid consumption of a 5 years period (2010 – 2014) (25). The report included countries and their consumptions as defined daily doses for statistical purposes (S-DDD), which were self-reported by governments. There is a substantial difference in terms of consumption of narcotics (Morphine and Fentanyl) when comparing developed countries including United States of America, United Kingdom, and Canada to developing countries and precisely to the Middle East region (26). It is observed from the INCB report that consumption of morphine concentrated in Western Europe and North America as the highest consumption (23.4 tons) goes to United States, followed by Canada (4.7 tons), and United Kingdom (3.1 tons). Nevertheless the remaining part of the world with large populations (80.9%) consumes around 10% of the amount available globally. In contrast to the consumption on the basis of S-DDD consumed per million inhabitants per day as follows: USA (2141), Canada (2629), and UK (1130) while looking precisely to Middle East region the consumptions were: Jordan and Tunisia (70), Saudi Arabia and Bahrain

(67), Lebanon (37), Qatar and Oman (19), Kuwait (13), United Arab Emirates (9), and Egypt (4).

In relation to Fentanyl consumption mentioned in the INCB report, the United States remains to be the highest consumer with 30% of the global total followed by Germany 21% and Canada 6.5%. In contrast to the consumption on the basis of S-DDD consumed per million inhabitants per day as follows: USA (7085), Canada (11504), and UK (4334) while looking precisely to Middle East region the consumptions are: Kuwait (286), Saudi Arabia (247) Bahrain (213), Jordan (188), Lebanon (162), Qatar (156), United Arab Emirates (118), Tunisia (100), Egypt (81) and Oman (72).

The statistics mentioned above demonstrate that narcotic use in the GCC and MENA region is likely at a lower scale, when compared to countries located in North America and Europe. Although it is currently unknown if this finding directly impacts patient outcomes, it is possible that lower utilization could translate into suboptimal use of narcotics when narcotic medications are indicated. As pain is a highly subjective and individualized phenomenon, it is difficult to clarify the extent of any patient-related complication from low utilization. Nevertheless, these findings signal that use is low relative to other regions and reasons for such a disparity should be systematically assessed in further studies.

### 1.8 Barriers to optimal narcotics use

Considering that under treatment of cancer pain is documented in the region, one must consider rationale as to why this occurs. Many factors may limit the use of narcotics in a specific setting. These may be related to policies and procedures, supply, health

professional factors, patient specific factors, and others. Prior to undertaking research to investigate facilitators and barriers to narcotic use in a highly contextualized setting, one must have a general understanding of facilitators and barriers on a regional and global level. The following literature review provides an overview of identified barriers to narcotic use, quoting literature from the Middle Eastern region, when available.

*Health care professionals related barriers:*

A prospective observational study was conducted in the oncology unit of King Khalid University Hospital, Riyadh, Saudi Arabia to assess pain management in Saudi cancer patients during period of May to October 2006. A total of 160 cancer patients were included. It was found that 29 patients were deemed to be experiencing severe pain yet only 6 of these patients (21%) were prescribed narcotics. Additionally, no regular reassessment procedures were documented for follow up on these patient's outcomes. Another finding was that 23% of patients who were prescribed an opioid did not have any prophylactic laxative prescribed for development of constipation. Patients that experience constipation may be less likely to take opioids to treat their pain and therefore should be offered prophylaxis if using regular opioid dosing. Finally, some issues were noted in prescribing practices with fentanyl patches being inappropriately prescribed for 8 of 11 patients in the emergency department for unstable, severe pain with no adjuvant analgesia to cover pain control until fentanyl onset occurred. This study demonstrates that healthcare professional assessment and prescribing practices may not be adequate in certain settings (23).

A cross-sectional study from Lebanon attempted to assess pain management outcomes for patients across 19 medical centers throughout the country. A questionnaire was distributed to 582 patients with cancer and non-cancer pain over a period of 3 months (July-Sep 2008). Determination of appropriate pain treatment was based on the WHO 'three-step ladder for pain management'. It was found that 50% of the initial assessments of pain intensity scores were a result of the assumptions of healthcare providers. This appeared to translate into inappropriate pain management with 14.3% of mild, 32.3% of moderate, and 16.7% of severe pain patients receiving suboptimal treatment according to WHO standards. Although data is self-reported and cross-sectional in nature, this study signals that under-treatment of pain may be an issue beyond the GCC (27).

Cancer pain and associated treatment was studied using a patient-reported form in an outpatient cancer clinic in Istanbul, Turkey during 2010. The participated sample of 99 patients revealed that cancer pain was detected in 49.5% (n=49) of patients. However, 20.4% of patients (n=10) were not receiving any pain treatment as part of their usual care. Again, this study emphasizes that treatment of cancer pain appears to be a regional problem and greater understanding of the facilitators and barriers to optimize pain outcomes is needed (28).

Lastly a recent study from Saudi Arabia aimed to assess final year medical students' knowledge, beliefs, and attitudes towards cancer pain (N=325 students). According to survey results, 54% of students believed that <40% of cancer patients suffer from pain. Interestingly, 41.6% considered it a minor problem and 58.6% stated addiction risk is high with legitimate opioid prescription. Additionally 77.1% believed

psychological dependence or drug tolerance was the cause of increasing analgesic dosage, compared to advanced stages of cancer. These findings demonstrate a strong misconception with final year medical students in a GCC country, which may adversely affect the way physicians provide care upon entry to practice. Furthermore, it is unknown to what extent these misconceptions influence prescribing of narcotic drugs (29).

*Patient related barriers:*

Although prescribing of narcotics occurs from a practitioner perspective, patients ultimately need to be convinced to take the medication. If this partnership does not occur, patient unwillingness to take medications as prescribed may contribute to suboptimal pain outcomes.

1. Fear of addiction

Fear of addiction is a legitimate concern for many patients. A survey was conducted among 488 cancer patients in Turkey and aimed to reveal attitudes of using morphine for pain management. Fear of addiction was documented in 50% of patients and was overwhelmingly the greatest reason for refusing narcotic medications. A further 36.8% of patients preferred to have another drug. The study recommended to have effective education to the cancer patients for pain management (30).

In addition, a questionnaire was distributed among 50 cancer patients in one of the cancer centers in Jordan was done to explore cancer patients' barriers to pain management. Patient concerns were the greatest reported barrier. Fear of addiction along



other harmful effects made up the majority of these concerns. This study demonstrates that patients are a key stakeholder in the uptake of narcotic medications for cancer pain (31).

## 2. Reporting of cancer pain

Reluctance to report pain was mentioned as patient related barrier. A study carried out among 100 cancer patients during a three-month period in the oncology department at the Royal Hospital, Muscat, Oman in 2007 evaluated pain prevalence and management. It was observed that approximately 64% of patients had pain but did not report it. The reasons why cancer patients do not report pain is unknown, however, it may be related to unacceptance of the known pain management therapy (32).

In 2011, a follow up study was carried out in two cancer centers: the National Oncology Centre (NOC) at the Royal Hospital and the Oncology Units at the Sultan Qaboos University Hospital (SQUH), Muscat, Oman to evaluate the progress of the pain management for cancer patients within the previous 5 years. It was revealed that Omani cancer patients, as Muslims, might have strong religious beliefs which result in under-reporting of pain. Thus whenever pain occurs they may under-report it as they consider it a regular part of the disease and prefer to cope using other traditional methods (33).

## 3. Family and culture barriers

Family and other culture related issues are documented to interfere with narcotic use. A study carried among four different hospitals in Jordan in 2015 aimed to identify the barriers to effective cancer pain management from the perspectives of cancer patients

and their family caregivers. It consisted of a cross-sectional survey that recruited among 300 cancer patients and 246 family caregivers from a period of August 2009 to May 2010 using the Arabic version of the Barriers Questionnaire II (ABQ-II). Concerns relating to addiction, tolerance, and disease progression were documented among the family caregivers with ABQ-II mean of  $3.5 \pm 1.0$ . Along with that, concerns to pain medications side effects were reported with ABQ-II mean  $2.91 \pm 0.93$  on a scale of 0-5. The study illustrated the decision making role for the family caregiver who may lead to under-treatment of cancer pain by discontinuing some pain medications to their relatives due to the fear of addiction or accompanied side effects. Relating to culture beliefs, fatalism was reported among 15% of the patients and their caregivers, believing that cancer pain is part of the disease and nothing could be done to control it. The study recommended having education sessions in pain medications and their effectiveness in pain management specifically addressed to the family caregiver to enhance their role in cancer pain management (34).

*Process and regulation related barriers:*

Barriers in the form of policies, procedures, or even law may greatly influence narcotic utilization in these settings. A comprehensive study of the opioid availability and accessibility in the Middle East region from the Global Opioid Policy Initiative (GOPI) was done across 16 countries of ME region in 2013. It consisted of using the reported data that relevant to 329 million of the regions 403 million people (82%) on the availability and accessibility of opioids for the management of cancer pain to distinguish

the barriers related to narcotics use in ME countries. The summery report revealed the main barriers that resulted from these data for each country as mentioned below (35, 36).

In terms of availability, the report revealed it still considered low with severe deficiency in the formulary within several countries including Iraq, Lebanon, and Palestine. In addition, availability and access of opioid is impaired due to the over-regulation across the region. In terms of special authorization restriction among ME countries, the report mentioned that special authorization to prescribe narcotics expressed among outpatient, inpatient, and hospice in Egypt, Syria, Qatar, Tunisia, and Yemen. Some countries needed special authorization for outpatient and hospices excluding inpatient were Saudi Arabia, Lebanon, and Libya. In terms of special prescription form for narcotics, the majority of the ME countries consist of having a special form of prescription for narcotics including: Saudi Arabia, Qatar, Oman, Lebanon, Egypt, Tunisia, Morocco, and Syria. In terms of maximum days for opioid supply for cancer pain (outpatient), countries vary in the number of supplied days as follow: 60 days in Saudi Arabia, 30 days in Oman, 15 days in Lebanon, 14 days in Egypt, 10 days in Qatar, and 7 days in Libya. The issues documented from this report demonstrate that policies and regulations likely greatly contribute to the narcotic use process. Some of these issues were also documented in other reviews (37).

The publication, *Global State of Pain Treatment: Access to Palliative Care as a Human Right* by Human Rights Watch (2011), evaluated the current state of accessibility of morphine in different types of healthcare facilities (Tertiary hospital, Pharmacies, Health Centers, and hospices) within Middle Eastern countries, as compared to the United States. In general, morphine injections were present in tertiary care settings

(hospitals) and this was similar in the United States. Major discrepancies existed for oral products; however, as these are typically limited to tertiary settings in the Middle East but are available in health centers and pharmacies in the United States. This could contribute to suboptimal use within the region, as patients must visit hospitals in largely urban settings to obtain appropriate treatment. The report also identified and discussed other barriers to prescription, such as formulation availability, maximum dispensed allocation, and restriction of practitioners with authority to prescribe narcotics (14). Of course, these barriers are largely contextual and must be evaluated in each local context for greater understanding of setting-specific narcotic use.

#### 1.9 Facilitators to optimal narcotics use

The following literature review provides an overview of identified facilitators to narcotic use, quoting literature from the Middle Eastern region, when available.

##### *Specialized care facilitators:*

Availability of cancer centers, palliative units and pain management teams contributed to proper management of cancer pain and facilitated narcotics consumption.

##### 1. Availability of cancer centers

Availability of cancer centers across the region accelerated the proper management of cancer and increased the adherence to therapies along pain management treatments (24, 33, 38, 39). These reports underscore the importance of recognizing cancer as a major health problem and devoting resources to its optimal identification and treatment.

## 2. Palliative care units and pain management team

Establishing of specialized care contributes in facilitating the appropriate management of cancer pain by expert teams. The palliative care units support patients and train other providers in pain management fields. Some examples have been reported in the literature. In Jordan, King Hussein Cancer Center in 2004, provides inpatient, outpatient and palliative home care services, which is documented to ensure better focus on cancer pain (40). In Saudi Arabia, a palliative care program available in King Faisal Specialist Hospital and Research Center (KFSHRC) consists of an interdisciplinary team of palliative professionals that provide inpatient, outpatient, and home care services (24). In Oman, the referral to pain management teams significantly improved management of cancer pain at (NOC) in the Royal Hospital and at the Oncology Units in (SQUH) (33).

### *Health care professionals related facilitators:*

#### 1. Patients counseling

Counseling patients by health professions facilitates the proper management of cancer pain through patient education to the use of narcotics, identification of side effects, and determination of the effective dose of narcotics to help in controlling pain. Professional training in cancer pain counseling is offered at SQUH, Muscat, Oman where pain management courses are held twice a week to educate nurses on the importance of informing patients to express their pain, to ensure patient compliance and adherence to pain medications, and to ask patients regularly to identify any experienced side effects or concerns related to the pain treatments (33).

## 2. Collaboration with other providers

The need for inter-professional communication and multidisciplinary teams (MTDs) are reported as essential in cancer care. Delivering multidisciplinary care (MDC) in the ME region would likely improve the services for cancer patients and enhance appropriate pain management, however, the ME region lacks a defined guideline for the use of MTDs in cancer care (41). Thus, efforts are being addressed to initiate collaborative teams and enhance communication between health professionals. In the literature, several studies demonstrated an example for such collaboration. In the oncology unit at the Royal Hospital, Muscat, Oman. The working relationship between physicians and nurses demonstrated a positive attitude for cancer pain management (32). Other reports also document similar benefits from such relationships in Saudi Arabia and Jordan (40, 41).

### 1.10 Rationale and research questions

The literature discussed above provides signals that cancer patients in the Middle East may suffer from suboptimal narcotic use and that barriers to optimizing use are likely related to health professional, patient, or system barriers. In order to fully understand contextual differences in narcotic consumption and the current state of practice in Qatar, further investigation regarding facilitators and barriers to use is required. Although it is unknown if cancer patients in Qatar are achieving favorable pain outcomes, the literature described above justifies further exploration of narcotic use within the Qatari health context. Research contributions to this area will help to further understand the role of narcotics for cancer pain in Qatar and may expose previously

unidentified issues relevant the region or larger international community. It is also necessary to investigate the statement from the regulating body that physician's cultural beliefs are contributing to suboptimal narcotic use in the country. As such, this thesis aims to explore health professional perceptions regarding narcotic use for cancer pain and to develop a foundational framework of understanding pertaining to the role of narcotics for cancer pain in Qatar, facilitators to use, and barriers to optimizing pain outcomes. Further studies may then use this framework to investigate narcotic utilization from other, differing perspectives.

The specific research questions of this thesis are:

1. How do physicians, pharmacists, and nurses perceive the role of narcotics for the treatment of cancer pain in Qatar?
2. What are facilitators and barriers to achieving optimal narcotic use in cancer treatment from health professional perspectives?
3. How do physicians, pharmacists, and nurses perceive the impact of physician's cultural beliefs on narcotic use in Qatar?

### 1.11 Objectives

These research questions translate into the following specific objectives:

1. To determine physician, pharmacist, and nurse perceptions regarding the role of narcotics for the treatment of cancer pain in Qatar.
2. To determine physician, pharmacist, and nurse perceptions regarding facilitators and barriers to narcotic use for cancer patients in Qatar.
3. To determine physician, pharmacist, and nurse perceptions regarding the impact

of physician's cultural beliefs on narcotic use in Qatar.

4. To compare and contrast each professional group's perceptions relating to the role, facilitators and barriers to narcotic use, and the impact of physician's cultural beliefs on narcotic use in Qatar.

### 1.11 Hypotheses

Prior to conduction of this study and based on the literature review provided above, we hypothesized the following factors would be perceived to influence narcotic use in Qatar:

- Availability of narcotics
- Dispensing-related restrictions
- Patient willingness and acceptance of narcotic medications
- Fear of abuse/misuse from both patient and professional perspectives

### 1.12 Study significance

This study aimed to explore the healthcare professional perceptions, attitudes, and beliefs to narcotic use including three disciplines (physicians, pharmacists, and nurses).

To date, no such study has attempted to comprehensively explore how health professionals perceive narcotic use in the Middle East. No known study has also focused on investigating practitioner culture as a major barrier to achieving optimal use of narcotics in any particular setting. The results of this study will provide a foundation framework for further investigation into narcotic use, including from patient and policy



perspectives. It will also enable interventional studies targeted to health professionals to be completed based on the theory derived from the qualitative analysis. Therefore, it is one of the first steps required to building an evidence-based program for optimization of narcotic medication use and treatment of cancer pain in Qatar.

Table 1.1

Pain classification definitions

Classification	Definition
<b>Acute</b> <sup>(2, 9)</sup>	<ul style="list-style-type: none"> <li>• Pain with a short duration (usually less than 3 months)</li> <li>• Recent onset</li> <li>• Usually considered as nociceptive pain</li> <li>• Early detection and treatment required to prevent transition of acute pain to chronic pain</li> <li>• Examples include postoperative, and trauma-related pain</li> </ul>
<b>Chronic non-cancer</b> <sup>(2, 9)</sup>	<ul style="list-style-type: none"> <li>• Pain that persists beyond expected time of recovery or pain that is present for more than 3 months</li> <li>• May be nociceptive or neuropathic</li> <li>• Examples include chronic pelvic or back pain</li> </ul>
<b>Cancer / Palliative</b> <sup>(2)</sup>	<ul style="list-style-type: none"> <li>• Pain resulting from cancer disease or treatment</li> <li>• May be acute or chronic</li> <li>• May be nociceptive or neuropathic</li> <li>• Examples include tumor-related pain, pain as an adverse effect from chemotherapy, or pain from radiation therapy</li> </ul>

## CHAPTER 2: METHODOLOGY

### 2.1 Study design

#### 2.1.1 Qualitative analysis

The study utilized a qualitative descriptive research design using focus group discussions as a data collection tool to identify healthcare provider (including pharmacists, nurses, and physicians) perceptions of narcotic usage and to explore the facilitators and barriers for narcotic use in practice. A qualitative research design was used as the best method to achieve our objectives. Qualitative design allows for determining greater depth to study questions, especially for topics that have little or no previous investigation. The project goal was to seek participant views and opinions and therefore focus group discussions permit in-depth description of naturally occurring phenomena with greater emphasis on meaning rather than frequency (42, 43). The phenomena investigated in this study included: the appropriate use of narcotics in a highly contextualized practice setting, as well as facilitators and barriers to optimal utilization, as perceived by health professionals. This in depth approach of addressing the 'how' and 'why' research questions promotes a deeper understanding of the phenomena and grounds the results within the point of view of practicing clinicians (44).

### 2.2 Sample selection

#### 2.2.1 Purposeful sampling

The study was set at National Center for Cancer Care and Research (NCCCR). The country's specialty oncology care setting with approximately 58 beds for active

cancer treatment and 10 palliative care beds. Participants were recruited using purposive sampling from different relevant departments in NCCCR. The organizational and social researcher Alan Bryman describes how in purposive sampling "the sample units are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the central themes and questions which the researcher wishes to study" (45). One main objective of purposive sampling is to ensure coverage of all the key participants who are expected to have perspectives and experiences relevant to the subject matter. In this study, healthcare professionals from three different disciplines were invited – pharmacy, nursing, and medicine- as they represent the key health professionals who most likely deal with broadest aspects of narcotic prescribing and usage in this health care institution. The sample population additionally accounted for professionals working within specialized areas (i.e. narcotic control, pain management). A second principal of purposive sampling is to ensure sufficient diversity within each healthcare provider group. In this study, for example, pharmacists were recruited from both inpatient and outpatient departments to explore variations of perspectives impact of these phenomena on each member (46). Nurses and physicians were similarly sampled according to their care specialty type/area.

### 2.2.2 Sample criteria

Participants were eligible for the study if they had at least one year of work experience providing care or treatment of cancer patients at NCCCR, agreed to the audio-recorded discussion giving the informed written consent. The total eligible population was 45 pharmacists, 50 physicians, and 250 nurses. The initial aim was to recruit 8-16

participants for participation in two focus groups per profession with an intention at that point to assess for data saturation. The guiding principle for sample size in qualitative study such as ours is to collect new data until saturation is achieved, meaning no new themes, codes, or categories can be identified from ongoing focus group discussions (45, 47). According to Glaser and Strauss, data collection reaches saturation when "at a certain point the information from each group discussion will be reported in subsequent group, until the latter groups uncover no more new information"(48).

### 2.2.3 Selection process

Potential participants of the study were invited by email whereby the invitation consisted of a short description of the study and objectives, as well as contact information to reply if the study was of interest to them. Upon expressing initial interest, participants were provided with preselected dates and times of focus group occurrences, a more in depth description of study procedures, and the opportunity to ask any preliminary questions. Informed written consent was obtained from the participants at the focus group itself.

## 2.3 Data collection

### 2.3.1 Justification for data collection instrument – focus groups

The data collection tool used in this study was the audio-recording and subsequent written transcripts obtained from the focus group discussions. The aim of the study was exploratory hence necessitating a design that allowed for in-depth probing of participants' ideas, opinions, perceptions, and attitudes towards the subject matter. This

type of research is typically accomplished using interviews or focus groups. Focus groups were chosen in this study, as they allow participants to present their views and experiences for a certain topic, listen to other opinions, have the opportunity to agree or disagree, and provide reflection and further commentary to what was said. The intent of these discussions are to generate rich and comprehensive data obtained from multiple viewpoints and perspectives.

### 2.3.2 Focus group

Focus groups as data collection instruments are becoming mainstream tools for conducting qualitative research in health care (49). A focus group is defined as an informal discussion among a group of selected individuals about a particular topic (50). Usually researcher gathers 6 to 8 participants in one room to discuss certain issue within a time period of 40-90 minutes. However, participant numbers and discussion duration can vary between studies. A facilitator is present to introduce the topic, assist the discussion, encourage interaction, and moderate the session. When a second facilitator is present, he or she typically ensures the audio-recorders are functioning, observe and take notes while the first facilitator leads the discussion.

The facilitators are first tasked with creating a friendly and comfortable atmosphere, which allows participants to engage with the topic, and to talk and interact freely with other participants. Developing such conditions promotes candid expression of participants' perceptions, thoughts and views, which enables collection of detailed and rich data. If these conditions can be adequately achieved, the discussion can be tailored to gather meaningful information regarding the topic of interest and allow facilitators to

fully explore the problem and perceived impacts within a real-life context (45, 51-53).

### 2.3.3 Focus group process

A total of six focus groups were planned with healthcare providers but it was foreseen that more might be needed to achieve data saturation. Ultimately, eight focus groups were conducted during the study period. Each focus group consisted of 3-6 individuals, plus 2 facilitators. One facilitator had previous training and experience in moderating focus group discussions and successfully completed previous focus group and interview studies. The other facilitator received training with experts external to the study before the first focus group and received additional training from the investigator team.

At the start of each focus group, participants were provided with English informed consent forms. All participants gave written informed consent prior to the beginning of the discussion and recording. The consent form provided information about the research project, the aim of the study, and anticipated duration of participation. In addition, it provided information pertaining to the measures in place to protect the confidentiality of participants and information access regulations and requested permission for audio-recording of the focus group discussion.

After the consent form was signed, one facilitator assigned each participant a specific number for future reference during transcribing to ensure participants' identities were protected from the first opportunity to de-identify data. For example, the unique number consisted of the focus group session, along with a letter representing the specific profession and finally a participant number. FG1N1 would refer to the first focus group with nurses and the first labeled participant.

Each focus group discussion lasted approximately 40-50 minutes. An 8-question discussion guide was created to stimulate discussion pertaining to the study objectives, as well as to promote consistency and uniformity of questions posed across all focus groups and to improve comparability between groups(54). The discussion guide model offers advantages over the traditional topic guide, which typically contains less specific guidance for discussion flow. For the purposes of this study, the discussion guides had a clear structure and used a ‘funnel design’, which refers to the strategy to build questions that are broad and general at the start of the discussion (to promote conversation and engagement) and then to finish with more specific questions to ensure the objectives are adequately explored (51). The discussion guides also differed slightly for pharmacists and physicians vs. nurses, in order to account for key differences between their respective roles. Final discussion guides are provided in Tables 2.1 and 2.2

## 2.4 Data Analysis

### 2.4.1 Transcription

Focus group discussions were audio-recorded and transcribed verbatim. Initially the audio recordings were uploaded to an online tool 'free transcription web service'(55). The purpose of using this tool was to clarify the voices and slow down the playback speed to hear the exact words spoken. One investigator transcribed all focus group recordings but the audio and written files were checked for errors by a second investigator. Transcribing was completed within 3 days of focus group completion



#### 2.4.2 Coding

This study utilized grounded theory approach to analyze the collected data. Grounded theory is an inductive methodology that allows for generation of a theory/theories arising from the data itself. Systematic procedures are implemented to ensure the validity of this coding approach (48). This theory arises from the collected data of the focus group discussions. In developing this theory, three phases of coding are suggested: open, axial, and selective. Initial or open coding is defined as the procedure of breaking down data, conceptualizing, and then putting back the data together in new ways and under specified codes (56). Relationships between open coded data are drawn (axial coding) and core variable/s including all data determined (selective coding) (57).

Transcripts were coded independently by two investigators, DM and KJW. Consistently, transcripts were read and re-read multiple times and separated into unique sentences, phrases, or sections that represented a single idea and relevant to the study (open coding). Each of these identified ideas was assigned a unique code that was chosen in relation to the research questions and defined discussion guide (axial coding). Once initial coding was done, codes were reviewed and grouped into related categories (selective coding). Coding was reconciled in person between both coding investigators. A third investigator (KW) was available to resolve any coding discrepancies through discussion. Coded data were discussed and interpreted among all investigators and a preliminary list of themes was generated.

Themes were revisited after each round of coding. Eventually, all investigators agreed on a final list of themes. For every theme, sub-themes were defined and coded data (quotes) were assigned to support the interpretation of the final data. This process occurred over multiple meetings and discussions between the investigator team members.

## 2.5 Validity and reliability

The main principals that ensure validity and reliability in qualitative research includes: credibility (internal validity), consistency (reliability), transferability (external validity).

### 2.5.1 Credibility

Assuring credibility include measures to ensure research findings truly reflect the experience of the participants. Interpretations must be trustworthy in order to reveal the meaning of the data (58, 59). Wolcott proposed results' credibility may be accomplished by increasing "the correspondence between research and the real world"(60). This can be demonstrated by using triangulation, defined as researcher use of multiple methods or data sources to understand specific phenomena in qualitative research(61).

Denzin has proposed four types of triangulation to validate research findings which include the use of multiple: methods, data sources, theories, or investigators. The first (methods) mainly suggests use of more than one data collection approach, for example combinations of interviews, observations, and documents. The second (data sources) involves collecting information from people with different perspectives, or observations at different time or in different places to gain multiple viewpoints. The third

(theories) indicates use of different constructs or models to analyze and interpret data.

The fourth (investigators) refers to having multiple researchers collecting and analyzing data (62, 63).

In this study, triangulation occurred in a number of ways. First, multiple focus groups were conducted with various professional groups and enabled the capture of ideas and opinions across participants with varied experiences and perspectives. Secondly, multiple investigators were involved in data collection and analysis, as described above. Another strategy employed in this study to promote credibility was member checking. Final coded results were sent back to focus group participants to ensure the interpretation of the data was in line with their expectations from being participants in the study (57). The member checks were conducted for the pharmacist focus group participants and helped minimize misinterpreting the meaning of what pharmacists mentioned in the focus groups. Member checks could not be logistically completed for the nursing and physician focus groups.

#### 2.5.2 Consistency

In qualitative studies, researchers seek to determine if results are consistent with data collected and not whether findings can be replicated (64). In this study, the question uniformity was reinforced by discussion guide use and contributed to consistent results. In addition, detailed description of how data were collected, how themes were derived and how findings were discussed and interpreted further contributes to assurances of consistency.

### 2.5.3 Transferability

Unlike quantitative research designs, generalizability is not typically applicable to qualitative studies. Instead transferability can be demonstrated by providing sufficient descriptive data of the research context and researcher assumptions made (57). It is then up to the reader to determine if the results may be applicable to a different situation or setting. Another element to ensure transferability is in study sample selection. Using purposive sampling in this study provides variation and diversity in sample which would enable greater range of findings and would be widely transferable.

### 2.6 Ethical approval

The study was approved by Hamad Medical Corporation Institutional Review Board and Qatar University (15470/15).

Table 2.1

Discussion guide questions for physicians and pharmacists focus group

Question Type	Focus	Question
<b>General Questions</b>	Narcotic Role	➤ <i>What do you think the role of using narcotics is in cancer pain management?</i>
	Health Policy	➤ <i>Do you follow certain guidelines or policies in prescribing/dispensing narcotics?</i>
<b>Key/Specific Questions</b>	Prescriber Edu.	➤ <i>In your opinion, do you believe pain management is adequate for most cancer patients in Qatar?</i>
	Accessibility	➤ <i>Do you believe narcotic medications are used appropriately in Qatar for management of cancer pain?</i>
	Cultural View	➤ <i>Are patients willing to receive narcotics to control their pain?</i>
	Facilitators	➤ <i>What are some facilitators to use of narcotic medications for cancer patients?</i>
	Barriers	➤ <i>What problems/obstacles have you faced with narcotics? In prescribing, policy, etc....</i>
<b>Broader Questions</b>	Evidence	➤ <i>It has been suggested that one's culture may be a barrier for optimal use of narcotics. Do you believe this may be true?</i>
	Other Questions	➤ <i>Do you have any other information to share regarding narcotic use for cancer pain in Qatar?</i>

Table 2.2

Discussion guide questions for nurses focus group

<b>Question Type</b>	<b>Focus</b>	<b>Question</b>
<b>General Questions</b>	Institutional Policy	➤ <i>What kind of care you provide to the cancer patients at NCCCR?</i>
		➤ <i>How do you assess the patient's pain?</i>
	Narcotic Role	➤ <i>What do you think the role of using narcotics is in cancer pain management?</i>
<b>Key/Specific Questions</b>	Prescriber Edu.	➤ <i>Do patients at NCCCR achieve optimal pain relief?</i>
	Accessibility	➤ <i>Do you believe narcotic medications are used appropriately for management of cancer pain?</i>
	Cultural View	➤ <i>Are patients willing to receive narcotics to control their pain?</i>
		➤ <i>What factors (families, addictions, level of education) influence their decisions?</i>
	Facilitators	➤ <i>What are some facilitators to use of narcotic medications for cancer patients?</i>
	Barriers	➤ <i>What problems/obstacles have you faced with narcotics?</i>
<b>Broader Questions</b>	Evidence	➤ <i>It has been suggested that one's culture may be a barrier for optimal use of narcotics. Do you believe this may be true?</i>
	Other Questions	➤ <i>Do you have any other information to share regarding narcotic use for cancer pain in Qatar?</i>

## CHAPTER 3: RESULT

The main objectives of our study were first, to explore healthcare practitioner perceptions of the role of narcotics in pain management for cancer patients in Qatar. Secondly, to identify the facilitators and the barriers for optimizing narcotics in pain management for these cancer patients. In this section, the dissemination of the results are presented separately for each group of the health professionals and will conclude with a cross-analysis of all professions. Results are structured according to demographics, perceptions regarding the role of narcotics, and analysis of facilitators and barriers identified by participants.

### 3.1 Results from the focus groups with pharmacists

Three focus groups were conducted with pharmacists with a total of 16 subjects. Each session lasted for an average of 40-50 minutes, resulting in 122 minutes of recorded discussion.

#### 3.1.1 Demographic characteristics of the participants

The demographic characteristics of pharmacist participants are summarized in table 3.1. The majority of participants were females (87.5%). The participants had varying years of experience practicing at NCCCR with 56.3% experienced less than 5 years, 12.5% experienced less than 10 years, and 25% experienced less than 20 years. More than 60% of the pharmacists worked primarily in the dispensary/outpatient setting versus 37.5% who worked within inpatient clinical settings. Participants largely

originated from the Middle East and North Africa (MENA) region (87.5%). The majority of these participants were Egyptian (37.5%), followed by the Jordanian (31.25%) while the remaining nationalities represented (Palestinian, Sudanese, Somali Filipino, and American) were equivalent with 6.25% each.

### 3.1.2 Role of narcotics

One of the main objectives in our study was to explore healthcare providers' perceptions of the role of narcotics in the pain management of cancer patients. The pharmacists overwhelmingly stated that narcotics play a major role within their hospital, a setting, which mainly focuses on cancer patients. In addition, they stated that narcotics are essential in pain relief of their patients resulting in consumption of the highest amount of narcotics compared to the other hospitals in the State of Qatar.

[Sub-theme: Narcotics Role]

*"We are considered a tertiary hospital so we're mainly focus on cancer patients however we are considered the highest hospital in Qatar who is using or consuming narcotics". [FG2, P1]*

*"Yes, essential, mostly because the cancer pain is mostly not confounded with other medications". [FG3, P3]*



### 3.1.3 Analysis of facilitators and barriers

In terms of the facilitators and the barriers to use of narcotics, four key themes were identified from the focus group discussions. These themes represented categories (sub-themes) of facilitators and barriers perceived to influence narcotic utilization.

Identified themes were: **1)** Narcotic-use process; **2)** Availability of specialized care; **3)** Patient-related factors; and **4)** Healthcare profession related factors. Themes and sub-themes are listed in Table 3.2

#### 3.1.3.1 Narcotic use process

##### 3.1.3.1.1 Barriers: law and regulations, documentation, travel

Participants perceived national laws to inhibit optimization of narcotic use in cancer patients. Specifically, Amiri law was described as both strict and outdated. Amiri law refers to decrees made by the Head of State in Qatar. It was believed that the 10-day maximum prescription duration of oral and transdermal dosage forms was a barrier for patient use as it requires patients to revisit the hospital every 10 days for reassessment and prescription renewal. It was mentioned that cancer patients should have exceptional privileges due to the chronicity of the condition yet no exceptions are currently allowed under the Amiri law.

[Sub-theme: Law and Regulations]

*"The law is very strict, very strict in each single step with when dealing with narcotic, since shipping from the country until your receiving here". [FG1, P2]*

*"The main law is for the narcotic medications it's not from the Supreme Council from the Amiri law that is the restriction to dispense maximum for ten days". [F2, P3]*

*"Narcotic prescription should only be valid... the quantity should only be for 10 days". [FG3, P3]*

*"Outpatient they have a max of ten days even if they show up before those ten days we don't dispense more than ten days, we don't refill". [FG1, P4]*

*"Back to the law because law is generalized, it's not specifying category and it giving the pain management like exception for example if they want to give the law they are not given exception for the cancer". [FG1, P1]*

In addition to Amiri law, it was perceived that policies from the Ministry of Public Health (MOPH) impact the use of narcotics by mandating very strict documentation and inspection processes. Specifically, it was noted that duplication of work is required for narcotic dispensing as the Ministry does not recognize records from the electronic system and all prescriptions for narcotics must be completed in duplicate as hardcopy. It was perceived that this burden of prescribing and dispensing takes a lot of time and places a lot of stress on health professionals.

[Sub-theme: Documentation]

*"Monthly, we are prepare we are sending prescription, we are sending monthly report for our consumption if its increase or decrease he will ask why this one increased why this one decreased, any single tablet might be broken ampule might be broken a lot of papers a lot of memos we have to go through to convince them". [FG1, P4]*

*"All our inventory is on this system but the ministry of health doesn't rely on this system rely on the papers only and their books. Along with the prescription the hard copies of the prescription, this what only accepted in the ministry of health. They not accept the system electronic prescriptions". [FG2, P1]*

*"In all facilities name in HMC are going to CERNER (electronic prescribing system) all the patient file is on this system, so we are requesting physician to place the order, also to dispense the medication and all our inventory is on this system but the ministry of health doesn't rely on this system rely on the papers only and their books". [FG2, P1]*

In relation to other policies, participants underlined the difficulties of cancer patients traveling with narcotics and felt this as a great barrier for achieving optimal outcomes. Participants stated that approval for export of narcotics must be given by the ministry prior to patient travel and only a limited quantity is allowed for transport. Participants stressed that this commonly results in patient fear and anxiety about continuity of care and at times, limits their ability to leave Qatar.

[Sub-theme: Travel]

*"Stamped from supreme council of health, copy from the prescription and report of about his case because at any point. At the airport they might stop". [FG1, P2]*

#### 3.1.3.1.2 Facilitators: law and regulations

In terms of facilitators, contrary to it also being mentioned as a barrier, some participants believe the Amiri law as a facilitator in controlling the misuse of narcotics and promoting regular reassessment of cancer patients when they are coming for prescription refill after 10 days. In addition, these participants were satisfied with the current institutional guideline for ordering of narcotics within inpatient departments as they facilitated the accessibility of narcotics for cancer patients admitted to NCCCR. For inpatients, the prescription is valid for three days and can be renewed regularly without the need to discontinue the narcotic medication for the patient.

[Sun-theme: Law and Regulations]

*"I love the 10 days period for the assessment, cause otherwise you are not going to see the patient we cannot assess the side effects and even we cannot assess the ratio to dispense I think if we increase the duration you will miss the follow-up and the assessment". [FG3, P4]*

*"Inpatient also the resident can repeat the prescription the patient will take his medication he will not run out or something if it won't stop order or something.*

*The physician can repeat it like with a resident and the resident he is in 24 hours in the hospital and the specialist he will write it for three days". [FG3, P2]*

### 3.1.3.2 Availability of specialized care

#### 3.1.3.2.1 Barriers: none

No barriers were expressly identified.

#### 3.1.3.2.2 Facilitators: specialized care

In terms of facilitators, referral of cancer patients to pain management clinics and palliative care units promoted optimal narcotic use for cancer patients and was deemed to be a major facilitator. For instance cancer patients have the privilege to be assessed regularly with a specialized team. These teams provide an advanced care and adequately manage cancer pain symptoms.

[Sub-theme: Referral]

*"Here, like we have palliative team and we have pain management team, so mainly they are people that are responsible for managing the pain or consultants. Sometimes even if the consultants they grade any of the pain just eventually the team both one of these teams should follow up with the patient". [FG3, P1]*

### 3.1.3.3 Patient related factors

#### 3.1.3.3.1 Barriers: misuse/abuse, fear, family, culture, and education

In terms of barriers relating to patient factors, pharmacists addressed the following issues: misuse/abuse of narcotics; fear of adverse drug reactions; family involvement; culture; and patient's level of education. Participants addressed the issue of misusing narcotics by cancer patients through recurrent visits to pain management clinics and demanding to receive narcotics even before finishing the ten days period of prescribing. This behavior threatens the therapeutic relationship with practitioners and increases skepticism regarding a patient's true pain status. As such, this patient behavior can deter practitioners from using narcotics in regular practice.

[Sub-theme: Misuse/Abuse]

*"Like for example if you supply for ten days and the patient comes after 4 days asking for narcotic or asking for the medication you know here that he misused his medication he finished his medication he took extra and so on". [FG2, P3]*

Another identified barrier was not the actual act of abusing narcotic or being addicted but instead the fear of this occurring. Pharmacists strongly stated that patients are commonly unwilling to receive narcotic mainly due to fear of experiencing adverse drug reactions or fear of becoming addicted.

[Sub-theme: Fear]

*"The patients he is supposed to take three times daily dosing and I have patient like this also she always takes like two she said I don't want to go to the maximum you are going to have me addicted after some time I don't need this much this is not required". [FG1, P5]*

*"I have patients it's related to side effects of the narcotics and I have many patients who had constipation for example with the morphine and even the constipation is managed probably and I keep them on laxatives they tell me we prefer to stay away from narcotic". [FG3, P2]*

A patient's willingness to accept narcotic prescriptions is also influenced by factors such as family, culture, and education. Family and culture were both heavily interrelated. Participants stated that Arab families tend to interfere with the decision of giving narcotics to their relatives. It was specifically mentioned that this was more commonly encountered for elderly patients. It was noted, however, that once education (by the pharmacist) occurs, families will generally agree to therapy. Participants also noted that non-Arab families were usually more flexible and agreeable from initial consultations.

[Sub-theme: Family]

*"First if they accompanied with family or there is alone so we are having some*

*nationalities that they just come alone without anyone else mainly the workers you know from Bangladesh and Europe so these ones they are taking their decision alone or they just let it to the physicians to decide what's best for them". [FG3, P3]*

*"In the wards I see in the Arab persons the family involvements in the elderly are more". [FG1, P4].*

[Sub-theme: Culture]

*"The Arabic or the gulf region many there, who collecting the medication, providing medication is the direct relative like the son or the husband. We always see that they prefer to be the one to listen regarding how the medications given. Even sometimes some information we provide it to the relative and the relative say okay I don't need to tell this to my mother, I don't need to tell this like they deciding". [FG2, P3]*

The level of education (as deemed by the health professionals) acted as a barrier for patient acceptance of narcotics. Patients without education were said to maintain beliefs regarding addiction or abuse.

[Sub-theme: Education]

*"Naturally they are not so educated patient; they will have this hesitation whether Okay I'll be addicted or so on. So we have this challenge between one person....like is educated enough to know". [FG2, P3]*



### 3.1.3.3.2 Facilitators: indication, education

In terms of the facilitators relating to patient factors, participants mentioned patients requesting narcotics with presence of pain and patients level of education. Very simply, pharmacists suggested that if pain exists, patients are willing to take narcotics and that a legitimate indication supports optimal narcotic use.

[Sub-theme: Indication]

*"Most of the patients I see are willing because they are in severe pain". [FG2, P4]*

Participants declared that the willingness was greater linked to the patient's level of education. Higher educated patients resulted in greater willingness to take prescribed narcotics.

[Sub-theme: Education]

*"It doesn't matter whether the patient like they have different nationalities, if they are well educated and they are willing to accept the idea of medications they can accept to use the narcotics". [FG3, P3]*

### 3.1.3.4 Healthcare professional related factors

#### 3.1.3.4.1 Barriers: fear, prescription authority

Provider-related barriers described by participants included both attitudinal and practical considerations. Pharmacists believed some physician colleagues possessed fear

to prescribe narcotics due to the strict regulations and monitoring completed by the ministry. Additionally, it was noted that the limited number of approved or licensed physicians to prescribe narcotics mentioned was also a barrier.

[Sub-theme: Fear]

*"I have noticed recently some hematologist and oncologist fear of getting narcotic or psychotropic book prescription so they are afraid of just dealing with those drugs". [FG1, P2]*

[Sub-theme: Prescription Authority]

*"There is also restrictions were for narcotics not all physicians has privilege to prescribe narcotics or like other medications. There is a list of physicians who approved by Supreme Council". [FG2, P6]*

#### 3.1.3.4.2 Facilitators: counseling, collaboration

Provider-related facilitators were also identified. Participants perceived counseling and education of cancer patients by the pharmacist and other healthcare providers helped to optimize the utilization of narcotics.

[Sub-theme: Counseling]

*"Pharmacist sit with the patient and educate him about it, of the medication, usage, indication, how to take the medication, how to dispose the medication if there is a remaining, how to know side effect and managements of side effects". [FG2, P3]*

#### 3.1.4 Analysis of physician's cultural beliefs

The majority of pharmacists did not agree that physician's culture inhibits optimal use of narcotics. Many stated that physicians are very qualified and advanced in their skills for treating cancer patients. Nevertheless, a few stated that culture might result in delaying ordering of the narcotics. For instance, physicians with Arabic school background tend to leave narcotics as the last choice when prescribing pain medication. Conversely, physicians with "Western" training would choose narcotics as a first drug of choice for pain in cancer patients. It was noted that these discrepancies might be understood as cultural differences.

[Sub-theme: Physician's Culture Beliefs]

*"I agree somehow with the study, here we have like different culture like from different backgrounds we have the Arabic school background we have the US or the European school background, mainly what I noticed like the Arabic culture or the physicians they tend to try all the options before going to narcotic. In the other hand if we see the other culture they will just go okay he is he is cancer patient he has pain, direct to the narcotic like this is" [FG2, P3]*

### 3.2 Results from focus groups with nurses

Three focus groups were conducted with nurses. The final number of nurses that participated in the focus groups was 12. Each session lasted an average of 40-50 minutes, resulting in 132 minutes of recorded discussion.

#### 3.2.1 Demographic characteristics of participants

The demographic characteristics of nurse participants are summarized in Table 3.3. The majority of participants were females 91.67%. All participants had at least one year of experience practicing at NCCCR. The highest percentage of participants practiced in palliative care (25%). Nurses from urgent care, in-ward one, and inpatient units accounted for 16.67% followed by those working in pain management, day care, and ambulatory chemo units with 8.33%. Participants with Philippines origins comprised 58.33% of participants, followed by Indian (33.3%) and finally Jordanian (8.33%).

#### 3.2.2 Role of narcotics

Nurses perceived narcotic in treatment of cancer pain as a major role. They stated that progression of disease causes severe discomfort and narcotics are considered the mainstay for controlling this pain.

[Sub-theme: Major Role]

*"Major role, because most of our patients or maybe all our patient is having pain and cancer". [FG3, N1]*

### 3.2.3 Analysis of facilitators and barriers

In terms of the facilitators and the barriers pertaining to the use of narcotics, the nurse perceptions were classified under the same four themes originating from the pharmacist focus groups: **1) Narcotic use process 2) Availability of specialized care 3) Patient-related factors; and 4) Healthcare profession related factors.**

Themes and sub-themes have listed in Table 3.4

#### 3.2.3.1 Narcotic use process

##### 3.2.3.1.1 Barriers: law and regulations, documentation, travel, institutional policy, accessibility

The main barriers mentioned by nurses with respect to MOPH policy were the narcotics law, inspection process, reporting, and traveling approval with narcotics. Nurses identified that the issued Amiri law by the ministry is considered as a barrier to narcotic utilization. The nurses considered the laws very strict negatively affecting the accessibility and availability of these medications. For instance, the strict duration of dispensing narcotics for 10 days only obstructed the accessibility of narcotics to patients. Ultimately these strict regulations were perceived to impact cancer patients by long wait times and increases in the workload on the clinics for assessment and prescription dispensing. Furthermore, they stressed the law is too generalized, without any room for exceptions for cancer patients.

[Sub-theme: Law and Regulations]

*"Very regularly this patient has to come back to the pain clinic... the patient has*

*even though they are in pain they need to very often have to come back to the clinic to get their medication, so I think maybe that the rule that or the law that stops them ". [FG2, N2]*

*"The wait it's not for us the wait is for the patient who is waiting to receive the narcotics, maybe there should be some a gap especially cancer pain is always that tumor growth they are in pain so I think at least for them it should be easily accessible referrals". [FG2, N3]*

Aside from the law, policies and procedures mandated by the ministry were considered barriers to utilization. These centered on the required documentation and detailed inspection processes. Once again, policies and approvals for export relating to patient travel emerged as major barrier. Specifically, nurses' focused on the burden for the individual patient.

[Sub-theme: Documentation]

*"They are counting even the empty ampules that are being used .....but here counting. Even the remaining volume from the ampules that we used we have to label put date and time then return to the pharmacy". [FG1, N2]*

[Sub-theme: Travel]

*"We have seen patients who don't have anyone to do this kind of things like the patient staying alone but they have to travel so in many times we have sent our nursing there to get to get these papers signed". [FG2, N1]*

Similar to pharmacists, documentation policies and were deemed to significantly influence narcotic use. Nurses were not satisfied with the institutional systems. For example, the pharmacist must document the quantities received, along with those dispensed and any wasted medication. In addition, the prescription should be submitted to the authorities in hard format not electronically through Cerner (electronic health records). These regulations double the work for the nurses and were deemed to be a barrier to optimize use.

[Sub-theme: Documentation]

*"Once they will get medicine to pharmacy there is book they will sign, that we receive this number". [FG1, N1]*

*" For narcotics even if they are writing in the Cerner system they have to prescribe in a paper that's why we have to give that prescription later...double work is there". [FG3, N2]*

*"No agreement from the supreme council, to agree for the electronic system only agree to something document paper". [FG3, N1]*

Institutional policies were deemed to inhibit narcotic use. One barrier was lack of access to narcotics by all staff, which was deemed to cause delays in providing narcotics to patients, especially in the afternoon times (due to availability of staff). Another institutional policy that was perceived as a barrier is the duration of inpatient prescription validity. These prescriptions are only valid for 3 days (a new change from 1 day), however residents' prescriptions are only valid for 24 hours.

[Sub-theme: Institutional Policy]

*"I think it could benefit more if they will review the restrictions of the access of the narcotics, like for example they are telling in day care, the access at least they can increase the number of persons having the privilege because it causes delay. It will be very difficult because my patient is in severe pain the pain is having the intensity is increasing but I cannot do anything that would be very difficult". [FG1, N2]*

*"Some those who have the privilege they will be in the morning duty and they will go then the afternoon they will have the problem, so we already inform the pharmacy we need the privilege for almost all the staff". [FG1, N4]*



*"Prescription because like pain management usually they are giving that's valid for three days, but our resident that's only one day because every day we have to take this prescription that's so we have to always back to them doctor give prescription give prescription we are fed up also that's really very difficult to get prescription". [FG3, N3]*

Participants declared that many patients at the outpatient department (OPD) are waiting long hours to get their prescriptions of narcotics. In addition, referral from other units such as: Day Care and Urgent Unit to OPD clinics due to the shortage of specialized pain management physicians who would assess the pain and write the prescription, exposed the patients to delays in getting the narcotics and need to have multiple visits to the hospital. Also, Nurses considered closing outpatient pharmacy in the weekend as a barrier to the accessibility of narcotics to cancer patients.

[Sub-theme: Accessibility]

*"We find people sometimes waiting in the OPD only for a prescription and they wait long hours it's not just they wait long hours". [FG2, N3]*

*"Day care they will not write any prescription for pain. The narcotic prescriptions they will not write it nowadays. What they are telling they have to go to the outpatient department so they have to have another visit in the hospital". [FG1, N4]*

*"The outpatient is that it's not always available all throughout the week the outpatient pharmacy for the narcotic is not available all thorough out the week like on weekends they don't have". [FG3, N2]*

#### 3.2.3.1.2 Facilitators: law and regulations, assessment

The main facilitators mentioned by the nurses through discussions were Amiri law (along with being a barrier), inpatient availability of narcotics, and the pain assessment. While many believed Amiri law to be inhibitory, many felt that strict regulations help control the misuse of narcotics by patients.

[Sub-theme: Law and Regulations]

*"I think maybe two weeks and they will give another appointment or they can refill after that, better good thing because this is control drugs better 2 weeks enough, yeah keeping with them maybe with them maybe this is not.. Yeah abuse". [FG3, N3]*

Nurses revealed that regular pain assessment facilitates appropriate use of narcotics. All nurses were satisfied with the hospital practices for assessment of pain for cancer patients. Nurses are using variety of pain assessment tools such as Numerical Rating Scale NRS and Flux Scale.

[Sub-theme: Assessment]

*"The something we do the pain assessment has become like in every patient who visits the unit we started asking them do you have pain so it's been done regularly".*

[FG2, N2]

### 3.2.3.2 Availability of specialized care

#### 3.2.3.2.1 Barriers: accessibility

It was perceived that having specific days for pain management clinics causes delays in assessing pain and getting the narcotics for the referred patients to these clinics on other days.

[Sub-theme: Accessibility]

*"The clinic we have in our NCCCR Sunday, Tuesday, and Thursday and if the patient is coming on Monday then they have to come another day to get the prescription. Then the patient has to come the next day".* [FG1, N4]

#### 3.2.3.2.2 Facilitators: referral

The majority of nurses were positively perceived having devoted pain management clinics for patient referral and a palliative care unit for cancer patients who were no longer receiving active, curative treatments. In addition, having 24 hours on-call anesthesia pain management services helped in facilitating the accessibility of narcotics.

Participants stated that availability of the palliative team assists in adequately controlling patient's pain by constant assessment and monitoring of patients symptoms, coordination with other care providers, and providing 24 hours on-call service, especially for terminally ill patients.

[Sub-theme: Referral]

*"Physician will assess the patient and if they needed will contact the pain management team and according to their decision we will give the medications. It's good actually the pain management team will assess and they can prescribe the according to them". [FG1, N4]*

### 3.2.3.3 Patient related factors

#### 3.2.3.3.1 Barriers: misuse/abuse, fear, gender, family, and culture

In terms of barriers, the following sub-themes emerged: misuse/abuse of narcotics by patients; fear from adverse drug reaction such as addiction, family involvement, and culture. Participants identified that the potential of misusing/ abusing of narcotics by patients is considered as a barrier for narcotics use.

[Sub-theme: Misuse/Abuse]

*"There are patients who are misusing this like as of walking they will come for our unit they can come at 24/7 its open and they come at any time so like they will*

*demand for the narcotic but we don't see for the when we when we ask for the rating scale they will be nothing but they will frequent visitors for the narcotic". [FG3, N3]*

Nurses stated that fear of addiction acted as a barrier to narcotic use and interferes with the patient's decision to take the narcotics, specifically for newly prescribed patients who are hesitant at the start of the therapy. Few mentioned gender as a factor, specifically stating that they believed males tolerate the pain more than females.

[Sub-theme: Fear]

*"We also have experience sometimes when there is resistance in taking this narcotics medications because especially for newly diagnosed patients they are a little bit scared of the side effects some they will think they will be addicted to it".*

[FG1, N1]

*"One patient she does not want because I'll be addicted I'll be addicted I'll be addicted but they don't realize that they have specific amount of morphine to accept ah per day and 24 hours that they will not be addicted". [FG2, N1]*

[Sub-theme: Gender]

*"Comparing if you see that females are mostly not tolerant, males they tolerates somehow". [FG1, N4]*

Participants mentioned family involvement as a barrier to narcotics consumption. For instance, family members acted as a barrier for both initiating the narcotics therapy and providing narcotics for acute pain.

[Sub-theme: Family]

*"We will experience that sometimes that the patient is in pain but the relative will say no no don't give this narcotic just give paracetamol because I don't want her to be so drowsy want to talk to her I don't want her to sleep all the time... like the relative wants the patient to be awake even if they are in pain". [FG1, N2]*

*"I mean for the bad prognosis patient or in this stage if he is coming little drowsy the family is complaining why you give morphine he is coming drowsy now he will be coming for example unconscious". [FG3, N1]*

Similarly, cultural-related factors emerged as potential barriers. For instance, it was perceived that different nationalities may have different pain thresholds as reflected in requests for analgesia.

[Sub-theme: Culture]

*" Nationality, I observe that one most Egyptian they have low tolerance in pain... they are the most numbered of patient asking for pain medication while as for the Asian they have more tolerable ". [FG1, N3]*

#### 3.2.3.3.2 Facilitators: patient request and education

In terms of facilitators, the main emerged sub-themes were requesting narcotics for usage and patients level of education. Patients' ability to recognize pain and request for pain medication, including narcotics, was perceived to facilitate optimal use. Participants identified that most of cancer patients are requesting narcotics in an appropriate manner.

[Sub-theme: Patient Requests]

*"Most of them they will say I need this tablet because previously they were using the same tablet so they know that which tablet will work on them, so they will ask by themselves and then doctors are prescribing its control their pain". [FG1, N5]*

Education was perceived as a facilitator by some participants. Patients who have been educated abroad are typically able to control their pain and adhere to therapy.

[Sub-theme: Education]

*"If he has good education it would be positive if there is no education would be negative most of the time". [FG3, N1]*

*"Yeah definitely, patients who go abroad they understand the pain management a little better I feel. Even before the pain rises up to the peak they want they prepare ". [FG2, N3]*

### 3.2.3.4 Healthcare provider related factors

#### 3.2.3.4.1 Barriers: fear and prescription authority

In terms of barriers, nurses believed that physicians' fear of prescribing was a barrier to optimal prescribing. Participants identified that some physicians fear reporting to the ministry, due to the requirement of documentation and submission of each narcotic prescription. Others appear have the fear of increasing the dose of narcotics when the patient experience pain, largely due to the potential for patient misuse/abuse. In addition, physician privileges to prescribe narcotics and for specific durations was also mentioned as a barrier. This is due to physicians requiring a special license to prescribe narcotics.

[Sub-theme: Fear]

*"There is another patient really he is in severe pain and looking in severe pain this is my experience.....and the doctor he afraid he give 2mg for example morphine*



*and he thought and the patient again he is complaining and he thought he receive already 2mg I cannot give more for example". [FG3, N1]*

[Sub-theme: Prescription Authority]

*"I think prescription very valuable point every physician has the right to write prescription but it lays on one physician or limited number of physicians to actually .The accountability so this the accountability its taking by few". [FG2, N3]*

*"Not all the pain doctor can write prescription good for 3 days unlike the palliative all of them can prescribe for the 3 days medication". [FG1, N3]*

#### 3.2.3.4.2 Facilitators: counseling and collaboration

In terms of facilitators, the main emerged sub-themes were counseling of patients and the collaboration of providers with others. Education and counseling by healthcare professionals worked as a facilitator to narcotic use. Providers are educating patients and families to the use of narcotics, the common side effects, and clarifying their misconceptions to addiction when they resist narcotics therapy. In addition, conducting family meetings was deemed beneficial.

[Sub-theme: Counseling]

*"For patient we are educating them that before at least 30 minutes or one hour they can ask that the prn medication before the pain set in so they know already. That's why the most of our patients it was controlled". [FG1, N3]*

*"We always conduct family meeting and then we have a multidisciplinary team, we have the pharmacists, the physician psychology, CNS and everyone so if we are experience resistance and problems our doctors and everyone will call this families members then we will educate, we have patient educators also ". [FG1, N2]*

Participants perceived health professional collaboration as a facilitator to narcotics use mentioning that physicians welcome nurse suggestions and take consideration to their opinions when it comes to patient pain and their medications.

[Sub-theme: Collaboration]

*"Yeah, so far they are appreciable doctors, like sometimes they will ask you what you can suggest sister, this patient pain is still there".[ FG1, N1]*

*"We can suggest to doctors our opinions and get involved with the treatment".*

[FG3, N2]

### 3.2.4 Analysis of physician's cultural beliefs

Majority of nurses did not agree on the health authority statement "narcotics use was suboptimal and the reason behind this was mainly due to physician's culture". Many stated that regardless of their culture, physicians are liberal to narcotics consumption and aware of the need to use narcotics to control the pain for cancer patients. However, few mentioned the hesitance of increasing the dose of narcotics by physicians due the fear of addiction.

[Sub-theme: Physician's Cultural Beliefs]

*"They are a custom with this kind of management so they are I could say they are not restricting they are liberal and in prescribing this narcotics because they know that the patients need it". [FG1, N2]*

## 3.3 Results from focus groups with physicians

Two focus groups were conducted with physicians. The total number of participants was eight. Each session lasted an average of 30-40 minutes, resulting in 65 minutes of recorded discussion.

### 3.3.1 Demographic characteristics of participants

The demographic characteristics of physician participants are summarized in Table 3.5. The majority of participants were male (75%). The participants had varying years of experience practicing at NCCCR with 75% experienced less than 5 years and 25% experienced less than 10 years. The majority of participants were oncologists

(37.5%), followed by hematologists (25%). Other specialties were radiologists, general medicine, and genetic counselor in cancer (all 12.5%). Participants mostly originated from the MENA region (75%) including Egyptian and Sudanese (37.5% each). Others included the United Kingdom and India (12.5% each).

### 3.3.2 Role of narcotics

In terms of perceptions of narcotics use in pain management for cancer patients, practitioners perceived a major role for narcotics. According to them, incidence of cancer pain is very high and it is the most common presenting symptom so patients typically need narcotics to control their pain.

[Sub- theme: Narcotics Role]

*"It comes major role especially the patients having uncontrolled symptoms and palliative setting, they have advanced cancer, they have uncontrolled pain, and this pain usually are not controlled with other medication other than narcotics". [FG2, P3]*

### 3.3.3 Analysis of facilitators and barriers

In terms of the facilitators and the barriers to narcotic use, the same four key themes emerged from the focus group discussions: **1)** Narcotic use process; **2)** Availability of specialized care; **3)** Patient-related factor; and **4)** Healthcare profession related factor. Themes and sub-themes have listed in Table 3.6.

### 3.3.3.1 Narcotic use process

#### 3.3.3.1.1 Barriers: law and regulations, travel, documentation, prescription process, staffing

Participants identified that the Amiri law and the strict ministry regulations limit the optimal use of narcotics. Physicians identified the law impacted the accessibility of narcotics for cancer patients. Specifically, the ten day supply period of dispensed narcotics was deemed inconvenient and lacked consideration for cancer patients. Again, issues pertaining to inspection, documentation, prescription durations, and travel approvals were discussed as examples.

[Sub-theme: Law and Regulations]

*"The out-patient we have only ten days supply, so we need if a patient needs to renew the medications every ten days. This around the prescription or regulation ah according to Qatar law to use the narcotic in the community and in the hospital". [FG1, P4]*

*"There are some restrictions or the process of prescribing narcotics for cancer patients, I can understand that this happen for any other patient, in other facilities but for cancer patients the prescription can be more simplified". [FG2, P2]*

*"Supreme council is the one controlling this narcotic book and the policies, and you know even if you fill this narcotic book, it gets reviewed by the supreme council".*

[FG2, P2]

*"According to the law also still we cannot, we have to ah repeat the hand written prescription for the in patients every three days, okay every 72 hours if it's written by a consultant or by specialist".* [FG1, P3]

[Sub-theme: Travel]

*"Yeah for vacation we have very high difficulty in this you cannot give medication only for ten days and after ten days the patient have to come back. What if he wants to stay for one month or so, so this is also one of the barriers that we are the patients get frustrated and angry and yeah they are not satisfied at all about this".* [FG1, P5]

[Sub-theme: Documentation]

*"Even for the outpatient, you write in the Cerner and also write in the prescription, narcotic prescription, the controlled and the opioid so it's a double work".*

[FG1, P4]

Inadequate accessibility of narcotics at the outpatient department (OPD) impacted cancer patients. For instance, the process for prescribing the narcotics was considered lengthy and in need of simplification. Also, shortage of staff to see and

assess outpatients results in under-treatment of their pain and long waits to receive their therapy. Similarly, pain assessment of outpatients was deemed to be suboptimal and potentially inhibited by inclusion of family members when seeking refills.

[Sub-theme: Prescription Process]

*"I feel that the process of prescribing narcotics for cancer patients in Qatar can be more simplified..... coming to the outpatients, it is a lengthy procedure and I think it can be more simplified". [FG2, P2]*

[Sub-theme: Staffing]

*"We can see some patients on the out-patient setting in which their pain is not adequately controlled when they come to us. This is probably because of shortage of staff maybe, they do not have the capacity to cover all of these patients". [FG2, P3]*

[Sub-theme: Documentation]

*"Also another barrier is you have to do it twice, you do it and the only ones you do it electronically and then you write it also hand written, so it makes your work a bit doubled". [FG1, P2]*

#### 3.3.3.1.2 Facilitators: setting, availability

In terms of facilitators to narcotic use, the main ones include: inpatient regulations and guidelines; availability of various types of narcotics at the outpatient; pain

assessment and monitoring; and training programs for other providers. The inpatient setting was deemed to be a facilitator as itself.

[Sub-theme: Setting]

*"The inpatient is different from the outpatient, so the inpatient usually seen every day, they are monitoring him for the pain and medications are adjusted accordingly, and he is usually free of pain and he is happy and satisfied". [FG2, P3]*

Medication costs and availability were not seen as barriers for narcotic use. The exception may be for patients bringing medications from abroad, as these medications may not be available. However, it was perceived that non-formulary procedures negated any undesired consequences.

[Sub-theme: Availability]

*"It's available and cheap and affordable for the patient as outpatient and like what we need yeah what we need is available so far ". [FG1, P5]*

*"The prescription will be only for the available medication the choices that we have and if patient came from abroad with certain medication analgesia which is not available here so we can utilize non formulary access to get this medication". [FG1, P4]*



### 3.3.3.2 Availability of specialized care

#### 3.3.3.2.1 Barriers: none

No barriers were identified.

#### 3.3.3.2.2 Facilitators: referral

Referral of cancer patients to specialized teams was perceived as a facilitator. The specialized care team consists of palliative care unit and pain management clinics. Referral to the palliative team, including the accessibility to 24-hours on-call physician, and the mobile service for the discharged patients facilitates narcotic use and results in adequately managed cancer pain.

[Sub-theme: Referral]

*"Accessibility to 24hrs on call physician even if through the phone they have access to call us at any time to ask about the dose". [FG1, P4]*

*"The pain management team they are very good, they are helpful, they are facilitators". [FG2, P1]*

### 3.3.3.3 Patient related factors

#### 3.3.3.3.1 Barriers: initiation, fear, family, culture, religion

In terms of barriers, the sub-themes were: initiation therapy for cancer patients, fear of ADRs such as addiction, family involvement and culture. Participants stated that initiating the therapy would be difficult for newly admitted cancer patients.

[Sub-theme: Initiation of therapy]

*"In our patients, we have two, the patients who are starting narcotics they have just only one concern, am I going to be addicted on this one, you explain to them, they have no problem. Their other concern is dizziness, with the, and feeling sleepy all the time, this is why they are trying to avoid it". [FG2, P3]*

Fear of addiction recognized as barrier for patients to receive and consume narcotics. In addition, cancer patients are hesitant to receive the narcotics due to other side effects such as dizziness, constipation, and vomiting.

[Sub-theme: Fear]

*"Patient and the family themselves sometimes they feel that ah when you put the patient on narcotic going to be addict". [FG1, P1]*

*"Most of them do not like it because, they afraid of being addict, they hear about addiction, so they do not want to use it. And some of them, when they experience it for one time of two times before, if they have vomiting and constipation, they know now the side effect". [FG2, P1]*

Providers mentioned some factors related to patients including family involvement and culture. It was perceived that some families are deciding for patient whether to take the medication or not and interference occurs with their treatment

regimen and doses. When it comes to culture, participants identified that patients that identify with the Arab culture are sensitive to narcotics more so than the Western patients. In addition, certain patients from specific population are knowledgeable about their cancer and pain crises however they still refuse to take narcotics due to religious reasons.

[Sub-theme: Family]

*"It is critically here to agree the problem always with the family. The family because sometime , most of the time the patient cannot decide by themselves either very sick or in pain they want anything to relieve their pain but the family will take control of this and they will decide whether to start to start or even interfering with this". [FG1, P5]*

[Sub-theme: Culture]

*"The Arab culture is more sensitive, to the opioid to the name of the opioid ". [FG1, P4]*

[Sub-theme: Religion]

*"Another cultural factor also related to the patient sometimes we found certain population specific population they understand about the cancer pain they understand that they are suffering but they are refusing to get the medication because they have like a belief that this is something related to the religious ". [FG1, P4]*

#### 3.3.3.3.2 Facilitators: indication

Majority of the participants stated that patients are willing to receive narcotics with the presence of pain. For instance, palliative patients are more willing to use narcotics because they understand that their pain needs narcotics to be controlled. One participant described culture as the 'culture of pain'.

[Sub-theme: Indication]

*"The patients who have established palliative advanced disease, they have no problem at all with the narcotics, although, sometimes they say it causing me some dizziness, but they know that without it, they experienced the pain without it, so they usually accept it". [FG2, P3]*

*"Definitely not you know, these patients have one culture only, the culture is pain. There is no other culture". [FG2, P2]*

#### 3.3.3.4 Healthcare professional related factors

##### 3.3.3.4.1 Barriers: fear

Fear of practitioners to prescribe narcotics acted as barrier to the accessibility and usage of narcotics. These fears were perceived to be misconceptions that were inherited from beliefs rooted in cultural values. However, it was noted that with education and training, these fears subside.

[Sub-theme: Fear]

*"The misconception about the opioid for all the population not physician only morphine and opioid can cause death, can cause respiratory depression can cause addiction so this is the main misconception in the whole population including the physician because the physician is human being so why to use this but with the training, awareness and orientation it improve". [FG1, P4]*

*"Palliative care I was hesitate to use morphine, cancer patients is tolerable some adverse effect of morphine or other narcotics maybe is risk benefit ratio maybe more risk for given this medicine so it depends". [FG1, P3]*

#### 3.3.3.4.2 Facilitators: counseling, prescription authority, education

Factors including education and counseling by providers, MD collaboration with other providers, authority by licensed physicians, and abroad providers considered facilitators to the optimal use of narcotics and pain management. Counseling by providers helped in clarifying patients and family's misconception of narcotics and increase the adherence of cancer patients to consume narcotics. In addition, this education helped to recognize common side effects and follow their regimen and doses to control their pain. Collaboration with other providers was also noted to facilitate optimal use.

[Sub-theme: Counseling]

*"We are working as a counselor and also the doctors so this is our job to explain to especially for the opioid we are explaining to the patient to the family how to use and how to come if there is any toxicity or side effect and also we are using also the clinical nurses specialist also they do a great job also in the counselling".*

[FG1, P4]

Participants perceived the licensed authority by healthcare practitioners as a facilitator to control the use of the narcotics, forbidden the misuse leading to addiction from certain patients. Others mentioned that unexperienced physicians may write an unsuitable dose for the patient, which may result in uncontrolled pain.

[Sub-theme: Prescription Authority]

*"Yeah I agree for this licensing because as we know in some country we heard about some issue addict for some patient because of wrong dose or prescription written by untrained doctor so I think it's good to have people license for prescription of narcotic after treatment".* [FG1, P1]

Physicians perceived health professional education by specialists to facilitate better practices.

[Sub-theme: Education]

*"As I told you once in a while for one of the physician prescribe an inadequate dose that may happen sometimes but now with education, teaching, explanation and what we are doing our effort in educating them the more we put we noticed that its less now". [FG1, P5]*

### 3.3.4 Analysis of physician's cultural beliefs

Participants shared opinions in regards to physician's cultural beliefs as barriers to optimal use of narcotics. Most of the participants identified that physicians' culture is sometimes a barrier to optimal narcotic use. Some revealed that narcotics misconceptions are inherited a cross the culture since the 1970s to 1980s. They stated that the old generation were advised to use narcotics cautiously and warned about their side effects and addiction. In the past, for example, the promoted strategy was to lower the consumption of narcotics and healthcare providers were following the guidelines to accomplish this goal. In the meantime, the use of narcotics became the mainstay in pain management for cancer patients caused a discrepancy between the previous goals of limiting use and new goals of adequately controlling pain. Participants perceived that differences in these beliefs still exist between the old generation and the new generation physicians due to their differences in training, lack of communication, and lack of exposure to patient's suffering from pain. Others stated that physicians who trained abroad are more likely using narcotics in their practice and have different beliefs, as compared to those trained in the Middle East.

[Sub-theme: Physician's Cultural Beliefs]

*"This culture inherited since long time its training and teaching and these things since 80s and 70s when they warn the student and the that time we were student they warn us about opioid, don't give opioid to COPD, and to patient with respiratory distress if you give it give it cautiously and so this is inherited cross the cultural". [FG1, P1]*

### 3.4 Similarities and differences across the professional groups

Similarities and differences across the professional groups sampled for this study must be noted. It was positive to see mostly similar findings across the professions and 8 focus groups as a whole. This strengthens the validity of our findings, as the same themes were representative between each profession. Key similarities were:

- 1- Perceiving narcotics to have a major role for pain management in cancer patients.
- 2- The most common barriers identified by all professions were: law and regulations by the ministry pertaining to narcotics, days supply duration of dispensing narcotics for outpatient use, patient fear of addiction, family involvement, culture, and physicians fear of prescribing narcotics.
- 3- The most common facilitators perceived by all of the professions were: inpatient institutional processes and regulations, availability of specialized care services (pain management and palliative care), education level of the patient, practitioner counselling, and physician's collaboration with other team members.



The findings as well illustrated dissimilarities between the three groups of physicians, pharmacist, and nurses. They were differing in these criteria: Although pharmacists overwhelmingly perceived the 10-day duration of supply to be a major barrier, it was also perceived by some to be a facilitator. This was due to the frequent reassessment requirements that shortened prescription duration mandates. However, other professions did not confirm this. With respect to physician's culture impacting the use of narcotics, most of them disagree with this statement. However, some revealed that prescribers originate from Arabic school background tend to be more hesitant to prescribe and leave narcotics as a last choice for more advanced pain.

From the nurse perspectives, the limited access of narcotics by charge nurses was frequently mentioned and considered as a barrier. This may be reflecting their struggling with shortage of licensed nurses and their inability to access and provide the pain medications for patients while acutely observing pain symptoms. Nurses were also the only profession to focus on logistics such as working times of pain management clinics and pharmacy departments. From a facilitator perspective, nurses focused more on their role as clinicians in pain assessment and management of patient symptoms.

From the physician perspective, religious issues were highlighted as a barrier to use narcotics. Some stated that some patients are not willing to receive narcotics while they are experiencing pain due to religious beliefs. From a facilitator perspective, authority of the licensed physician was considered as a facilitator by physicians but as a barrier by others. This may be due to, majority of the physicians were approved to

prescribe narcotics and they therefore do not encounter the delays mentioned by nurses and pharmacists. Physicians also revealed that sometimes physician's culture is a barrier to optimal use of narcotics, which was consistently denied by other professions. It is important to address that physicians at NCCCR are from multiple nationalities, have different backgrounds, and vary in age and experiences. These factors may contribute to their views specifically when illustrating any gaps resulting from generational transition of ideas and beliefs.

Table 3.1

## Demographic Characteristic of Pharmacist Participants

Characteristics	Number of participants n=16, (%)
<b>Gender</b>	
Male	2 (12.5%)
Female	14 (87.5%)
<b>Years of practice at NCCCR</b>	
Less than 5	9 (56.3%)
Between 5 and 10	2 (12.5%)
Between 11 and 20	4 (25%)
More than 20	1 (6.25%)
<b>Specialty</b>	
Clinical/ Inpatient	6 (37.5%)
Dispensary/ Out-patient	10 (62.5%)
<b>Nationality</b>	
Middle East North Africa region	14 (87.5%)
○ Jordan	5 (31.3%)
○ Egypt	6 (37.5%)
○ Palestine	1 (6.25%)
○ Sudan	1 (6.25%)
○ Somalia	1 (6.25%)
Philippines	1 (6.25%)
USA	1 (6.25%)

Table 3.2

## Pharmacist Emerged Themes and Sub-themes

<b>Pharmacists Emerged Themes</b>				
<b>Theme</b>		<b>Sub-theme</b>	<b>Facilitators</b>	<b>Barriers</b>
<b>1. Narcotic Use Process</b>	i.	Law and Regulations	√	√
	ii.	Documentations		√
	iii.	Travel		√
<b>2. Specialized Care</b>	i.	Specialized Care	√	
<b>3. Patient-Related Factors</b>	i.	Misuse/Abuse		√
	ii.	Indication	√	
	iii.	Fear		
	iv.	Family		√
	v.	Culture	√	√
	vi.	Education		√
<b>4. Healthcare Provider Related Factors</b>	i.	Fear		√
	ii.	Prescription Authority		√
	iii.	Counseling	√	
	iv.	Collaboration	√	

Table 3.3

## Demographic Characteristic of Nurses Participants

<b>Characteristics</b>	<b>Number of participants n=12, (%)</b>
<b>Gender</b>	
Male	1 (8.33%)
Female	11 (91.7%)
<b>Years of practice at NCCCR</b>	
More than one year	12 (100%)
<b>Specialty</b>	
Inpatient	2 (16.7%)
Palliative Care Unit	3 (25%)
Pain Management Unit	1 (8.33%)
Urgent Care Unit	2 (16.7%)
Day Care Unit	1 (8.33%)
In Ward One	2 (16.7%)
Ambulatory Chemo Unit	1 (8.33%)
<b>Nationality</b>	
Philippines	7 (58.3%)
India	4 (33.3%)
Jordan	1 (8.33%)

Table 3.4

## Nurse Emerged Themes and Sub-themes

<b>Nurse Emerged Themes</b>			
<b>Theme</b>	<b>Sub-theme</b>	<b>Facilitators</b>	<b>Barriers</b>
<b>1. Narcotic Use Process</b>	i. Law and Regulations	√	√
	ii. Documentations		√
	iii. Travel		√
	iv. Assessment	√	
	v. Institutional Policy		√
	vi. Accessibility		√
<b>2. Specialized Care</b>	i. Referral	√	
	ii. Accessibility		√
<b>3. Patient-Related Factors</b>	i. Misuse/Abuse		√
	ii. Fear		√
	iii. Family		√
	iv. Culture		√
	v. Gender		√
	vi. Education	√	
	vii. Patient Request	√	
<b>4. Healthcare Provider Related Factors</b>	i. Fear		√
	ii. Prescription Authority		√
	iii. Counseling	√	
	iv. Collaboration	√	

Table 3.5

## Demographic Characteristic of Physicians Participants

<b>Characteristics</b>	<b>Number of participants n=8, (%)</b>
<b>Gender</b>	
Male	6 (75%)
Female	2 (25%)
<b>Years of practice at NCCCR</b>	
Less than 5	6 (75%)
Between 5 and 10	2 (25%)
Between 11 and 20	Non
More than 20	Non
<b>Specialty</b>	
Oncologist	3 (37.5%)
Radiotherapy	1 (12.5%)
General MD	1 (12.5%)
Genetic MD	1 (12.5%)
Hematologist	2 (25%)
<b>Nationality</b>	
Middle East North Africa region	6 (75%)
○ Egypt	3 (37.5%)
○ Sudan	3 (37.5%)
India	1 (12.5%)
UK	1 (12.5%)

Table 3.6

## Physician Emerged Themes and Sub-theme

<b>Physician Emerged Themes</b>			
<b>Theme</b>	<b>Sub-theme</b>	<b>Facilitators</b>	<b>Barriers</b>
<b>1. Narcotic Use Process</b>	i. Law and Regulations		√
	ii. Documentations		√
	iii. Travel		√
	iv. Prescription Process		√
	v. Staffing		√
	vi. Availability	√	
<b>2. Specialized Care</b>	i. Referral	√	
<b>3. Patient-Related Factors</b>	i. Initiations		√
	ii. Fear		√
	iii. Family		√
	iv. Culture		√
	v. Religious		√
	vi. Indication	√	
<b>4. Healthcare Provider Related Factors</b>	i. Fear		√
	ii. Prescription Authority	√	
	iii. Counseling	√	
	iv. Education	√	



## CHAPTER 4: DISCUSSION, LIMITATIONS, CONCLUSION, AND FUTURE STUDIES

### 4.1 Discussion:

This thesis aimed to explore narcotic utilization for cancer patients in Qatar from the perspectives of healthcare providers including physicians, pharmacists, and nurses. Through this analysis, themes pertaining to the role of narcotics, in addition to facilitators and barriers perceived to influence the optimal use were identified. The findings of this thesis will provide a foundation for future quantitative and interventional studies to further assess utilization of narcotics and optimization of cancer pain outcomes for patients in Qatar. Additionally, the results better conceptualize culture as a perceived barrier to narcotic utilization and provide context for the original statement from the national health strategy.

In this section, our aim is to answer the following research questions:

- 1- How do physicians, pharmacists, and nurses perceive the role of narcotics for the treatment of cancer pain in Qatar?
- 2- What are the facilitators and barriers to achieving optimal narcotic use in cancer treatment from the health professional perspectives?
- 3- How do physicians, pharmacists, and nurses perceive the impact of physician's culture beliefs on narcotic use in Qatar?

In accordance with health professionals' perceptions to the role of narcotics, our findings revealed that the majority of providers perceived their role as major and essential when dealing with cancer pain. This, of course, aligns well with the World Health Organization (WHO) ladder for cancer pain management. Similar to our findings, a survey completed across 10 Asian countries assessing 463 physician attitudes to cancer pain management found that 84% of the physicians considered narcotics to be the first line therapy for moderate to severe cancer pain(65). When we examine this issue from a closer regional perspective, our results were not aligned with final year medical students' perceptions and attitudes in Saudi Arabia. Approximately 60% of these students revealed misconceptions related to addiction when patients use narcotics to manage cancer pain and more than 40% considered cancer pain to be only a minor problem(29). It is likely that the specialized nature of our sample (professionals working in a cancer hospital) and their experience treating patients in practice (at least 1 year) may account for this discrepancy. Furthermore, context and locality of training may also contribute to discrepancies between our results and misconceptions overall. A questionnaire that distributed among 49 nurses from two hospitals in Iran to assess nurses-related barriers to control cancer pain revealed negative attitudes relating to cancer pain management with one of the barriers being misconception about side effects and complications of pain medications (66).

In our study, all professional groups overwhelmingly believed narcotics play a major role in cancer patient care. Although practitioners in our study originate from and have trained in many different countries and settings, the results support the notion that physicians, pharmacists, and nurses caring for cancer patients in Qatar value the role of

narcotics and their perceptions align with international health authorities and guidelines.

In our study, the facilitators for narcotic use identified by all health professions included categories of narcotic use process-related factors, referral to specialized care, patient-related factors, and provider-related factors.

In terms of process, narcotic availability and the guideline-approach to pain management were perceived as facilitators across the professional groups. Availability of narcotics is supported by other studies in the literature, namely the Global Opioid Policy Initiatives (GOPI) report concerning the accessibility of opioids for cancer pain in the ME region. This report stated that Qatar and Saudi Arabia had the seven essential opioid formulations available comparing to other countries such as Iraq and Libya (35). Another key facilitator identified within this theme was ensuring adequate pain assessment for cancer patients. In the same survey of physicians across 10 Asian countries, it was revealed that approximately 50% of physicians considered assessment of pain inadequate in cancer and recognized it as a barrier to optimizing the therapy (65). Therefore, pain assessment should be a priority for facilitating appropriate use of medications and it appears that professionals in Qatar also agree.

An essential key component to optimizing narcotic use in cancer patients was the referral to specialized teams. Teams such as palliative care and pain management are considered to be well-equipped and very helpful when dealing with cancer pain. Participants recognized that many non-specialized physicians lack the skillful knowledge to treat cancer pain, likely due to a lack of pain management training and/or experience working with cancer patients. These factors would negatively influence pain management and narcotic use; however, in our findings availability of pain management clinics at

NCCCR were felt to offer enhanced assessment of cancer pain, cancer patient access to appropriate narcotics, and adequate management of narcotic-related side effects. The importance of specialized services for patients with cancer pain has been mentioned before. Hui (2014) addressed the concept of having supportive care clinics for cancer patients and emphasized the need to ensure treatment is holistic and personalized (67).

Along the same lines, providing a dedicated palliative care unit including "mobile service" to palliative patients was also perceived to facilitate narcotic use. This finding aligned with previously obtained data from Qatar. From the perspectives of medical oncologists at NCCCR in Qatar approximately 86% of the 49 physicians addressed that every medical center should include palliative care to treat cancer patients (16).

Unfortunately, most of countries in the region lack these services and specialized units. Nevertheless, palliative care services are progressing in some of the ME countries such as Jordan, Saudi Arabia, Oman, and Qatar (35).

In terms of patient-related factors, the main facilitators were mainly cancer patient's level of education and willingness to receive narcotics when in pain. These factors contributed to the consumption of narcotics and facilitated use. A point that is further emphasized in the discussion of barriers is that a patient is a key stakeholder in the narcotic-use process and must be comfortable and willing to take narcotics as prescribed, in order for any treatment plan to be successful. Factors that relate to patient willingness from a facilitator perspective should be further explored to assist targeted education and counseling for the purposes of engaging patients as part of the therapeutic alliance.

When it comes to provider-related factors, perceived facilitators were counseling of cancer patients and collaboration with other practitioners. For instance, newly admitted

cancer patients were most hesitant when it comes to the use of narcotics. These misconceptions mostly related to patients fear of adverse drug effects including addiction. Counseling and educating cancer patients were considered very important steps to overcome these fears as stated by participants in our study. This also relates to patient willingness, as described above, and aligns with reports from the literature. A randomized controlled trial assessing pharmacists counseling in cancer pain control revealed that cancer patient who received counseling by clinical pharmacists with the conventional treatment resulted in improved pain control comparing to patients receiving conventional therapy without education (68).

Moreover, collaboration and communication between providers was recognized to support the process of pain management and facilitated the optimal use of narcotics. These findings are consistent with another study completed in Oman that communication between professionals, as well as with patients, is required to adequately assess and treat pain (69). Seamless communication regarding findings and actions taken by the respective professionals will undoubtedly help to ensure pain is adequately assessed and treated and that adverse effects are appropriately managed.

The same four themes captured barriers to optimal narcotic use across the different professional groups. Overwhelmingly, the Amiri law governing all policies and procedures relating to narcotic utilization was perceived as likely the most important barrier to optimal use of these medications in practice. Participants perceived regulations relating to narcotics shipping, receiving, storing, prescribing, dispensing and consuming to be strict and inflexible. Similar studies across the region confirmed the same finding discussing the regulatory restriction to accessibility of narcotics. The GOPI report

revealed that most of the countries in the ME region extensively overregulate the process when dealing with narcotics, which ultimately reduces the level of narcotic consumption (36). A comparative survey in the consumption of morphine using data from the INCB annual report between USA and ME countries in period of 2004-2007 revealed that the United States consumption is 38 times greater than Jordan, 150 times greater than in Saudi Arabia, and 447 times greater than in Turkey(26). These findings showed that regulations greatly influence narcotic consumption throughout the region.

The duration of outpatient dispensing directed by the law was perhaps considered the most important obstacle to optimal and effective narcotic use. The ten days dispensing duration of narcotics is considered a greatly suboptimal practice by professionals enrolled in our study. This regulation places high demands on the outpatient system, inconvenience for cancer patients to return to the hospital every 10 days, and results in a large documentation burden. This finding is not unique to Qatar. A GOPI report stated the covering time of the prescriptions to cancer pain is 30 days for Oman and Saudi Arabia, 15 days for Lebanon, 14 days for Egypt, 10 days for Qatar, and 7 days for Libya (35). This showed that majority of the countries in ME are struggling with the strict duration of dispensing narcotics, however, according to this document Qatar has one of the strictest policies. In fact, Saudi Arabia is considering modifying the duration to 60 days and may have already done so in certain geographical regions (24).

Inspection and documentation requirements were also perceived to inhibit optimal use of narcotics. The problem appears to stem from practitioner overload caused by duplication of efforts from both electronic and hardcopy requirements. Additionally, the small quantities allowed to be ordered (inpatient) or dispensed (outpatient) means the

documentation must occur on a frequent basis. While documentation issues are not unique to Qatar (35) the advent of electronic health records and medication ordering systems (i.e. CERNER) may allow for streamlining of these processes and elimination of traditional requirements. By doing so, practitioners may be less inhibited to prescribe narcotics for all patients when appropriate.

In terms of patient related factors, our findings were specific for patient fear, family pressure/involvement, culture, and education. Fear of narcotics related precisely to addiction to narcotics. Notably, these fears were mostly deemed to be prevalent with initiation of narcotics, particularly in those patients not familiar with the concept of narcotics and pain management. Understandably, these patients feel uncomfortable to be introduced to such medications. Fear of addiction by patients is known to be widely spread throughout the ME region and even in developed countries. Our findings aligned with a report from Turkey. A survey was conducted among 488 cancer patients and aimed to reveal attitudes of using morphine for pain management. Fear of addiction was documented in 50% of patients and was overwhelmingly the greatest reason for refusing narcotic medications. A further 36.8% of patients preferred to have another drug(30). Family and culture were considered as separate sub-themes in our analysis but were quite linked. It was perceived that family involvement is much more pronounced in Arab family cases, as compared to others. While being very loyal, supportive, and helpful to their beloved ones, their involvement was noted to sometimes interfere with the patient's treatment. For example, families may contribute to limiting the access of narcotics to their relatives by prohibiting the prescription of narcotics or asking for adjacent therapy. These patient-related barriers appear to be confirmed from literature originating from the

region. A study from Saudi Arabia revealed that cancer patients expressed their fear of addiction to narcotics initially, however, once introduced to the benefits of narcotics, treatment became more accepted by them. Additionally, the study indicated that family involvement is predominant. Families are typically responsible for the patient in Saudi Arabia and largely decide on what information to share with the patients themselves. In fact, many requests occur to hide the truth of a cancer diagnosis from the patient, in order to protect their relatives from psychological stress and harm (70). This is an important finding, as any targeted interventional strategy to optimize patient and family acceptance of narcotics may need to address these.

Key provider-related barriers were physician's fear to prescribe narcotics and limitation of prescribing to physicians holding special authority. The reasons behind these barriers mainly related to the strict government regulations and fear of addiction/misuse of narcotics by patients. A review of 65 relevant articles pertaining to physician related barriers to cancer pain management published between 1986 and 2006 revealed that up to 75% of physician respondents were hesitant to prescribe narcotics due to the perceived addiction fear. Interestingly, these studies also reported that 76-97% of respondents reported problems in managing cancer pain. Stated problems were insufficient pain relief by the patient, unmanageable side effects, opioid dosing, and pain assessment(71).

Our results, in addition to these supporting statistics from the literature, demonstrate that physician's require training and education regarding appropriate pain assessment and medication prescribing, in order to avoid addiction concerns and optimize pain management outcomes.



Our study findings illustrated that prescribers who studied outside the MENA region are more open to deal with narcotics comparing to physicians who studied across the region. This may be justified to the lack of training programs for medical students to develop pain management competencies and exposure to medication such as narcotics. A prospective observational study was conducted in the oncology unit of King Khalid University Hospital in Saudi Arabia to assess pain management in Saudi cancer patients during period of May to October 2006. It was found that no regular reassessment procedures were documented for follow up on these patient's outcomes. This study demonstrates that healthcare professional knowledge and skills pertaining to narcotic use may not be adequate in certain settings(23).

Overall, it seems that these strict regulations practiced across the region impacted narcotics utilization, physician authorities, and patient satisfaction (35, 37). The cross-analysis of each profession resulted in similar themes being identified across the entire data set. Overwhelmingly, laws and regulations were identified as the strongest barriers and the availability of specialized care and referral services and one of the strongest facilitators. As such, a review of the narcotic use process, including legal considerations, should occur to promote optimization of narcotic use in Qatar and cancer pain-related outcomes.

#### 4.2 Limitations

The result of this study, need to be considered with certain limitations regarding generalizability, sample size, researcher bias, moderators guide, and saturation.

The first limitation to mention is one that is inherent within qualitative studies, which is

generalizability and transferability of results. This study occurred in one specific hospital in a single-center, which makes it very difficult to translate conclusions to all health professionals in Qatar or health professionals that work with cancer patients in other countries. The discussion provided above with linking of results to regional data shows that our results do align with findings from other contexts yet specific ideas and themes should not be applied without proper confirmation. Researcher bias should also be identified as a potential limitation of the study. Although the study team implemented safeties to reduce introduction of bias, research bias may still have occurred as much of the data required deciphering and interpretation. Thirdly, including the moderator guide with specific questions may result in directing the discussions to receive the needed answers; however, the guide consisted of comprehensive questions grounded in pre-existing literature and promoted open ended questions that allowed the participants to express their opinions freely. Finally, sample size and resulting saturation of data may be questioned. While saturation is difficult to determine, we believe we were close to achieving, specifically for the pharmacists and nurses. Few new ideas were presented after conduction of the third focus group for each profession. Only two focus groups were conducted with physicians and so a confirmatory focus group is not available for analysis of saturation. However, when all data is analyzed across the three different professions, the consistency in themes and examples used by participants allow us to be fairly certain that most ideas were captured and saturation of data was adequate to meet the study objectives.

### 4.3 Implications and Future Research

This study has implications from clinical, policy, and education perspectives, as well as for future research. Our findings exposed issues pertaining to the clinical management of pain for cancer patients in Qatar. The identification of many modifiable barriers to effective pain control through the use of narcotics should be acted on and further explored, in order to optimize pain outcomes. First and foremost, the current laws and regulations surrounding narcotic use should be reviewed, in order to modernize and reduce the burden of patient inconvenience and high workload experienced by health professionals. Secondly, future studies should aim to better conceptualize barriers pertaining to patient willingness to consume narcotics and subsequently design educational interventions to rectify misconceptions and alleviate unnecessary fears. Thirdly, practitioners practicing in all areas (not just palliative care or pain management) should be encouraged to participate in continuing professional development relating to pain control and narcotic use, in order to better understand the role of narcotics and how to appropriately use them for patients in practice. Finally, the idea of physician's cultural beliefs as barriers to effective narcotic use could be further explored yet it appears from our findings that this may be changing with introduction of newly trained physicians and internationalization of Qatar's workforce.

### 4.4 Conclusion

The aim of this study was to explore health professions perceptions to narcotics role and to determine the facilitators and barriers to optimize narcotics use. In addition, to investigate the published statement that physicians' culture may result in low utilization

of narcotics. In conclusion, it was evident that health professionals view the role of narcotics for cancer pain to be major and essential for achieving desired patient outcomes. Facilitators and barriers encompassed the major themes of narcotic use process, specialized care, patient-related factors, and provider-related factors. These findings support the notion that narcotic utilization is not simply influenced by a single factor or subset of factors but by a multitude of factors that can be both independent and interrelated. As such, any intervention targeted to optimize the use of narcotics in any particular setting must be well researched and grounded within the local context. Furthermore, this study demonstrates that institutions and governments must not make assumptions pertaining to the rationale of perceived drug utilization issues without properly investigating the phenomena from multiple stakeholder perspectives. Although physicians' cultural values were noted as a barrier by physicians themselves, other key findings (such as laws and regulations) likely have greater impact on narcotic utilization. To conclude, this exploratory analysis provides a foundation for future studies regarding narcotic utilization in Qatar and provides a framework for interventions targeted towards health professional perceptions, attitudes, and beliefs regarding the use of narcotics for cancer pain in Qatar.

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