

Centre for International Health

**Factors Associated with High Turnover of Jordanian Physicians in
Rural Areas: A Sequential Exploratory Mixed Method Study**

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**This thesis is presented for the Degree of
Doctor of Philosophy
of
Curtin University**

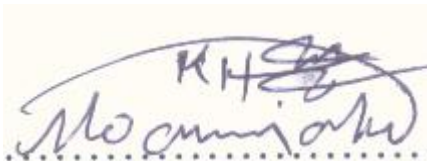
May 2013

Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature:

Handwritten signature in black ink on a light yellow background. The signature consists of the initials 'KH' followed by a large, stylized flourish that resembles the word 'Singh'. The signature is written over a dotted line.

Date:

Handwritten date '08-05-2013' in black ink on a light yellow background. The date is written over a dotted line.

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Lastly, I offer my regards and blessings to all of those who supported me in any aspect during the completion of the study and I ask God to protect them all.

Moawiah Khatatbeh

Dedication

This dissertation is dedicated to the Almighty God for his grace, provision, and protection and for seeing me through this project; through Him all things are possible.

It is dedicated to my mother (May God bless her soul)

To my father (May God protect him)

To my wife (Iman) and lovely kids (Qonout, Reetaj & Bara')

To my dearest brothers and sisters

To all my family members whose unfailing support and belief in me, has helped me through the years.

To all my friends who have left their footprints...“People often walk in and out of your life... but friends will leave footprints in your heart”.

Abstract

Background:

The high turnover of physicians in rural areas of Jordan, a low-middle income country in the Middle East, has adversely affected the provision of primary health care. This study was undertaken in an effort to understand the reasons for this high turnover and to inform health policy makers to formulate more effective strategies to counter this problem which also affects many developing and developed countries around the world.

Methods

A sequential exploratory mixed method design was chosen for the study with the data collection in two phases. In the first phase, qualitative data was gathered using focus group interviews. Four focus groups were considered and each group consisted of five participants. Participants in the focus groups were purposefully sampled and represented currently posted rural physicians, previously posted rural physicians, health directors, and consumers of health services from the general rural community. In the second quantitative phase, a cross-section of currently posted Jordanian rural physicians was surveyed using a 98-item questionnaire whose design was informed by findings from the first qualitative phase. A total of 307 completed questionnaires were elicited in this survey. Qualitative data were analysed with the help of the QSR-NVivo 8 software using thematic analysis, while quantitative data were analysed with SPSS version 19, using both descriptive and analytical statistical procedures including frequency distributions, Chi-Square Tests and logistic regression.

Results

Due to the cross-sectional observational nature of the study design, it was not possible to prospectively measure turnover rate among currently working physicians, rather intention-to-leave was used as an indicator of turnover. By this measure, the overall intention to leave rural practice among the currently employed rural physicians in Jordan was 29.3%.

A large number of personal, organizational, work related and socio-cultural factors were identified and found to be associated with turnover of rural physicians. Some of these factors

have been reported in the previous literature; however, others were specific to the Jordanian context. Factors revealed during focus group discussions included - financial incentives, professional development, workload issues, rural background of medical practitioners and rural exposure during training, transportation issues, demographic characteristics of participants, management related factors, social isolation of rural physicians, lack of treatment facilities, poor general services, lack of resources, lack of opportunities for spouses' career development and socio-cultural characteristics of the Jordanian community. A framework of the association between the various factors associated with turnover of rural physicians was established from the qualitative phase. Findings from the quantitative phase complemented the factors documented in the qualitative phase, and in addition identified physician's age, method of appointment to work sites, daily travelling time, workload, satisfaction about referral policy, and social isolation as significant factors affecting turnover.

Conclusion

Physicians in rural Jordan are dissatisfied with a large range of organizational, social and personal factors. These factors could lead to a high rate of physicians' turnover and therefore impede the quality of health services offered to rural communities. A number of recommendations were formulated to inform decision makers and health policy planners to address the issue of high physician turnover in rural Jordan. In addition, the study generated directions for future research, especially through cohort or prospective studies, to track progress in the area and to evaluate the impact of both organizational and personal factors on physician turnover.

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Chapter One: Introduction and Overview

1.1: Introduction

The purpose of this research study was to investigate factors associated with the high turnover rate of Jordanian physicians in rural areas. This study utilized a mixed method design involving both qualitative and quantitative approaches. The findings of this study are incorporated into a theoretical framework, proposed at the conclusion of this thesis, to guide health authorities and further research on physician turnover and its associated factors in rural settings within Jordan.

This chapter provides an overview of the thesis, beginning with a rationale for the examination of physicians' turnover in rural Jordan. An outline of the aims and methodology of the research is presented and key findings are summarized along with their significance and limitations.

1.2: Rationale for the Study

1.2.1: High turnover rate of rural physicians impedes the quality of health services in rural areas

To achieve optimum outcomes from the health services and offer good quality health care, a qualified health workforce is essential (Brooks, Mardon, & Clawson, 2003). The quality of the offered health services can be negatively affected by workforce characteristics such as level of qualifications and experience of staff, communication barriers, and the socio-cultural characteristics of the health team members. Qualified and experienced health team members are the most important influencing factors for patients choosing and accessing health centers as treatment destinations, as found in a study in Saudi Arabia (Al-Doghaither, Abdelrhman, Saeed, and Magzoub, 2003).

High rates of turnover of physicians in rural Jordan lead to loss and shortage of experienced and skilled health team members which threaten the quality of care patients receive (Jordanian Ministry of Health, 2009a; Jordanzad, 2011). It has been reported in the literature that about 34% of Jordanian physicians who are registered

in the Jordanian Medical Association are working overseas (Tamimi & Tamimi, 2010). While this denotes a high turnover rate from the country as a whole, rural areas are particularly affected, as rural physicians often feel the need to leave their rural posting, due to poor work conditions and pay; however, there is a dearth of information about the magnitude and size of problems associated with turnover of rural physicians in Jordan.

High turnover of qualified staff can lead to lost productivity that is associated with orientation of the new replacing staff (Duffield & O'Brien-Pallas, 2003). Orienting new staff to the setting and practice can take a considerable time during which other health team members are expected to undertake a heavier work load with the resultant extra stress that can adversely affect the quality of care (Buchbinder, Wilson, Melick, & Powe, 2001). Replacement processes in response to physician turnover affect both skills and number of physicians. It is difficult for the Ministry of Health (MoH) to replace physicians in rural areas due to the often long and complicated recruitment processes involved. Even when replacement occurs, the community can suffer as there is often a time lag before the new physician gains adequate skills, experience and orientation. In contrast, experienced staff can not only provide better care, but they are better able to understand and work within socio-cultural contexts of the communities they serve.

Turnover of physicians can lead to unmet expectations of the patients caused by the inexperienced new physicians which results in patient dissatisfaction with the offered care. Patients' perceptions and beliefs about health care provided directly influence their compliance with treatment and follow-up and the resultant health care outcomes. Thus, a high rate of physician turnover affects both continuity of care and patient-physician relationship, and hence outcomes of health services (Jackson, Chamberlin, & Kroenke, 2001). This can lead to a self-perpetuating cycle, with new physicians encouraged to leave if they feel that patients are unsatisfied with their service and are not committed to treatment plans.

Moreover, local rural communities can suffer additional costs when in the face of local physician turnover they are compelled to seek medical advice by more experienced physicians in urban areas or at private sector where fees are higher and

which are associated with expenses for transportation, food, and sometimes accommodation. The high direct and indirect costs and impacts on patients and the community of rural physician turnover was felt necessary to be one important rationale for investigating the magnitude of turnover of physicians in rural Jordan and the associated factors. The next sub-section discusses the effects of high turnover on organisational performance and effectiveness.

1.2.2: High turnover rate of employees have significant implications on performance of organizations

Health care organizations can experience financial and managerial problems from unpredictable turnover consequences (Cavanagh, 1989; Kim & Lee, 2009; Mobley, 1982; Waldman, Kelly, Aurora & Smith, 2004). In case of the turnover of rural physicians in Jordan, both MoH and local communities can be expected to incur additional costs. For the MoH, the estimated cost as a result of turnover of one employee can be up to 150% of his/her annual payment (Contino, 2002). These costs include costs of advertising for recruitment, hiring procedures, termination costs, orientation and training of new employees (Contino, 2002). In addition, the shortfall resulting from turnover leads health decision makers to adopt strategies such as relocating physicians to new areas on both permanent and temporary bases which in turn can lead to job dissatisfaction among the relocated physicians and potentially contribute to a vicious cycle of further turnovers.

In conclusion, high turnover rate of physicians is detrimental to health care delivery in rural areas for both the community and health care services. Therefore, researching the factors underlying such turnover is necessary for policy and decision makers to establish effective strategies to deal with and control the issue and reduce its impact. However, what we know about the reasons of turnover in Jordanian rural areas is mostly anecdotal in nature as no research has been undertaken in this area. This study was undertaken to address this gap, hence, the imperative and rationale for this study.

1.2.3: Selection of Jordan for the study

As will be reviewed in Chapter two, Jordan is a small, low-middle income country with limited resources that cannot afford the high costs of high turnover of rural physicians. Socio-cultural factors operating within the Jordanian population also exaggerate the outcomes of turnover process as will be discussed later in this thesis. The researcher who is a Jordanian national has had the opportunity during the course of his own experience as a health professional in his country to observe and experience firsthand the adverse effects of high turnover of physicians' in rural areas. He was well qualified to navigate the practical and cultural aspects of conducting this research in the country. This thesis reflects an attempt to contribute evidence and propose recommendations that may assist health decision makers in Jordan in developing viable strategies in order to effectively and independently address the key elements of the problem of high turnover of rural physicians in the country.

1.3: Research Aim and Objectives

1.3.1: Research aim

The overarching and main aim of this study was to investigate the perceptions of stakeholders' especially health professionals with respect to working in rural Jordan.

An extensive search of the published and 'grey' literature identified a large body of international data on turnover of physicians in rural areas. However, there is limited literature specific to Jordan, and other literature from developing countries was felt to be not entirely applicable to the Jordanian context. This lack of applicable and specific data led to the adoption of an exploratory study design for this research.

1.3.2: Research objectives

Specifically, objectives of this research were:

1. To assess the magnitude of turnover intention of Jordanian physicians working in rural areas;
2. To examine the perceived factors associated with retention of Jordanian physicians working in rural areas;
3. To document the socio-demographic factors that impact turnover of Jordanian physicians working in rural areas;

4. To explore work related factors that affect turnover in Jordanian physicians working in rural areas;
5. To identify local and community related factors that impact retention decisions among Jordanian physicians working in rural areas;
6. To provide an explanatory framework of the various factors and their interactions that impact turnover in Jordanian physicians working in rural areas.

1.4: Methods & Study Design

Given the exploratory nature of the research, multiple research methods, including both quantitative and qualitative approaches, were considered appropriate. A research strategy involving mixed methods was chosen to allow varying perspectives on the research questions to provide a better understanding and delineation of the depth of the research problem (Creswell, 2003). Creswell (2003) opines that exploratory design is valuable when information about the issue under study is lacking. Given the exploratory nature of the study, it was essential to explore the views of key relevant stakeholders such as currently posted rural physicians, previously posted rural physicians, health directors, and consumers of health services from the rural community.

In the early stages of this study, a review was conducted of the published and grey literature relevant to turnover of rural physicians in both developed and developing countries worldwide. Factors reported by the literature to be affecting turnover of rural physicians were documented for inclusion as discussion points in the focus group discussions of the study. Four selected focus groups, each with five participants, were convened representing different stakeholders who could best inform the research.

A survey questionnaire was developed from the data elicited by the focus group discussions and then distributed to Jordanian rural physicians. In total, 853 rural physicians could be reached and were offered the survey. Among the physicians who responded, 307 questionnaires were included in the final analysis. Quantitative analyses included both descriptive and analytic statistics including regression

analysis. Qualitative data from interviews were organized using the Nvivo software and were subjected to thematic analysis. The research methodology used in this study including survey and interview design, data collection and administration procedures, and the approach to data analysis and ethical issues, are all described in greater detail in Chapter 4 of this thesis.

1.5: Key Findings

The study highlighted the continuing challenge of high turnover of rural physicians in Jordan and was able to identify a range of associated factors within both the national health system and the socio-demographic context of Jordan. These factors require significant commitment and effort by the national government to reduce the high turnover rate of rural physicians or at least minimize the severity of the consequences of this phenomenon. The results of the questionnaire offered to rural physicians and interviews with health professionals and community participants highlighted the importance of several key elements in decreasing the turnover rates of rural physicians or promoting retention. These included financial incentives, maintaining professional development, workload issues, rural background of medical practitioners and rural exposure during training, transportation issues, demographic characteristics of participants, management related factors, social isolation of rural physicians, and socio-cultural characteristics of the Jordanian community. Key findings are summarized below and discussed in more detail in Chapters 5, 6 and 7 of this thesis.

1.5.1: Financial incentives

About three quarters (77%) of participants in the questionnaire commented that turnover rates of rural physicians could be decreased by reasonable financial incentives and salary increments for rural physicians. This finding was also reflected in the focus group discussions.

1.5.2: Professional development

It is important for organizations to pay attention for professional development, in terms of improving staff skills and competencies, in order to maintain staff retention. Professional development was reported in the study to be crucial for rural physicians in Jordan, in terms of the importance of residency programs and educational and

training sessions for physicians and the dearth of such opportunities in rural practice in Jordan.

1.5.3: Workload

In most rural locations of Jordan, usually only one physician is posted; however, a few rural communities with larger populations have two practicing physicians (Francis, Nawafleh, & Chapman, 2005). The resultant workload burdens were reported to be a source of dissatisfaction for both physicians and rural communities in the present study with treating large number of patients per day and working for long hours significantly associated with intention to leave by study respondents.

1.5.4: Rural Exposure

Results from the focus groups and the questionnaire considered exposure to rural experience during study and training as valuable in retraining physicians in rural places and reducing turnover rates. Physicians with rural background or experience can better understand both rural communities and rural employment conditions. In this study, 23.9% of physicians who grew up in rural areas have intention to leave rural practice compared to 43.5% among those who grew up in urban areas.

1.5.5: Transportation issues

Results in this study revealed that Jordan has a poor public transportation system, especially for travelling between urban and rural areas. The more difficult the transportation to rural areas, the greater the intention to leave was noted. Moreover, responses from the focus groups reported that poor transportation system in Jordan impacted decisions of physicians regarding where to practice. This is a disincentive not only to employees agreeing to work in rural areas but also to those who are already working in such areas. Moreover, such travel is costly in Jordan due to the relatively high price of petrol compared to other countries.

1.5.6: Social isolation

Physicians posted in rural areas spend a significant amount of time traveling and thus are away from family and friends, which can lead to feelings of being socially isolated. Physicians in the present study who spent more than two hours daily travelling were 10 times more likely to report an intention to leave rural locations compared to those who spent less than an hour travelling.

1.5.7: Demographic characteristics

Some demographic characteristics were found to be associated with high turnover. For example, physicians whose age ranged from 31 to 40 years reported that they were more likely to leave rural practice (odds ratio=25.5) compared to those older than 40 years. In particular, female physicians have higher rates of turnover due to a complex array of cultural and social factors.

1.5.8: Lack of general services

The lack of opportunity and poor access to basic amenities are crucial inhibitory factors in recruiting and retaining professionals to rural areas (Hays, Wynd, Veitch, & Crossland, 2003). Physicians in this study have reported that lack of general services in rural locations in Jordan was associated with turnover intentions. For example, lack of quality schools, shopping centers and limited access to good quality housing were found to be significant to intended turnover behaviour.

1.5.9: Management factors

The majority of participants in this study (66%) reported that they were dissatisfied with general administrative policies of the Ministry of Health at their current practice locations such as dissatisfaction about referral policy and dissatisfaction about chances of maintaining professional development. This feeling of dissatisfaction with MoH policies can impact turnover intentions as mentioned in the literature (Buykx et al., 2010).

1.5.10: Socio-cultural characteristics

In general, rural populations tend to have a lower educational level than urban communities. Physicians' dissatisfaction about level of education of rural communities was found to be associated with intention to leave. Moreover, religious and cultural factors have an impact on decisions of female physicians to accept rural recruitment as will be discussed later in the thesis.

1.6: Significance of the Study

This study is the first study of its type investigating this issue in Jordan. As turnover rate from rural and remote Jordanian areas continues, there is a need to investigate factors that contribute to both retention and leaving work in these areas.

In contrast to most other research studies conducted elsewhere in the world which used either qualitative or quantitative approach, this study used a mixed method design that complemented either approach adopting a new data collection tool suited to the Jordanian context.

The findings of this research will also add to the existing body of knowledge concerning retention of health professionals in rural areas, and will also be used as a basis for further studies investigating and researching such issue, especially in Jordan and other developing countries which share similar inputs, settings and conditions.

Thus this study will help decision makers in the Ministry of Health to develop policies and procedures capable of improving work environments and maximize opportunities for rural physicians in order to achieve their goals, which in turn may have a positive influence on rural practice and then higher retention rates.

The results of this study can also be used by policy makers and researchers in the field of health care administration and human resources management and managers especially from developing countries that are impacted with physician turnover.

1.7: Limitations

The study encountered a few limitations, most notably the length of the questionnaire used to collect the quantitative data. This may have led to 20% of the returned questionnaires being incomplete and for which they had to be excluded. Another problem was the inaccurate registry records in health directorates which had to be used to obtain the contact details of rural physicians. In spite of these problems, an adequate number of questionnaires were returned. Limitations are further expanded and discussed in the final chapter.

1.8: Overview of the Thesis

This section presents an overview of the content of each chapter of the thesis as described below.

Chapter 1 of this study is the introductory chapter and provides an overview of the thesis, including the study rationale and outline of the aims and methodology of the research. Key findings are summarised along with their significance.

Chapter 2 provides the background to the study through a discussion of the socio-cultural context of Jordan. This chapter presents also a brief summary about Jordanian health care system, provision of health care in rural Jordan, recruitment and turnover of Jordanian physicians, problems associated with turnover, social life, and economic status. Additionally, this chapter presents an overview about medical education and training in Jordan.

Chapter 3 is a review of the existing literature on turnover behaviour with an emphasis on the factors associated with turnover among physicians. The chapter also addresses the gaps in knowledge in the existing literature.

Chapter 4 describes the methodology used in conducting this research. A brief discussion on the mixed method approach studies is made followed by the description of the sampling techniques, development of surveying instrument, validity and reliability measures, and data collection methods.

Chapter 5 presents the findings from the qualitative data collected in the focus group discussions.

Chapter 6 presents the quantitative findings from the survey of Jordanian rural physicians.

Chapter 7 provides an overview of the major findings of the study and discusses these results in term of the existing literature. The chapter describes also the limitations and strengths of the study. It also summarizes directions for future research and presents recommendations and conclusion of this thesis.

Chapter Two: Jordan: Socio-cultural Context and Health System

2.1: Introduction

To assess the issue of physician turnover in rural Jordan, it is vital to understand the context of the study, including the history and socio-cultural and economic background of Jordan, and the health services system, in particular medical education and medical workforce considerations. This chapter describes these aspects, as well as directions and key challenges for health care delivery in Jordan.

2.2: A Brief History

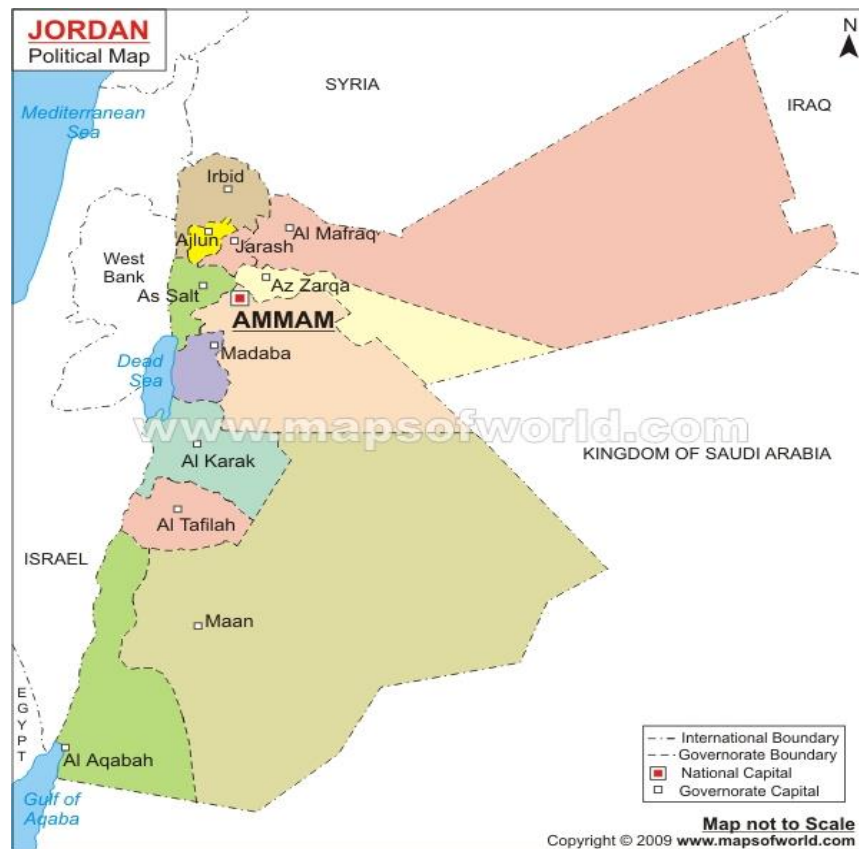
This section provides a brief summary of the geography, history and social life in Jordan.

2.2.1: Geography and general information

Jordan (officially known as the Hashemite Kingdom of Jordan) is an Arab country located in the Middle East, with Amman as its capital city. Jordan is a constitutional monarchy with a parliamentary system of government composed of a lower house of representatives elected every four years and an upper house of representatives appointed by the king.

Jordan is a small country with a total area of 89,342 square kilometers (Jordanian Department of Statistics, 2007). It borders Saudi Arabia to the east and south-east, Iraq to the east, Syria to the north and West Bank and Israel to the west with which it shares the Dead Sea. Jordan's only port is at its southern tip, at the Gulf of Aqaba, which is also bounded by Israel, Egypt, and Saudi Arabia. Three quarters of the total area of Jordan is sparsely populated desert land, with only the north-western part of Jordan being arable and which constitutes part of the Fertile Crescent. Figure (1) shows the Map of Jordan with geographical location and governorates.

Figure 1. Map of Jordan (Maps of the World, 2011)



Around 94% of Jordanians are Muslims and 6% are Christians with Arabic as the official language (Jordanian Department of Statistics, 2011). However, English is widely spoken and it is the language of study of all medical and scientific fields in colleges and universities. The Jordan Times is an English language daily newspaper; in addition, both Jordan governmental TV and Radio have several English programs at fixed times such as the news. The monarchy in Jordan has wide popular support, under the reign of the current bearer of the Hashemite torch, King Abdullah, eldest son of the late and much revered King Hussein (The Hashemite Family, 2011).

Administratively, Jordan is divided into 12 provinces named Governorates, which are further subdivided into 54 departments. Each is run by a governor appointed by the Ministry of Interior. Table (1) demonstrates the Jordanian governorates, capital of each governorate, and its location in the country.

Table 1. Jordanian governorates, capitals, and region of each governorate

Governorate	Capital	Region	Governorate	Capital	Region
Ajloun	Ajloun	North	Madaba	Madaba	Central
Mafraq	Mafraq	North	Zarqa	Zarqa	Central
Irbid	Irbid	North	Kerak	Al Karak	South
Jerash	Jerash	North	Ma'an	Ma'an	South
Balqa	Salt	Central	Aqaba	Aqaba	South
Capital	Amman	Central	Tafilah	Tafilah	South

2.2.2: Population overview

The population of Jordan is approximately 6.5 million, 83% of who live in urban areas (Jordanian Department of Statistics, 2013). It is a low-middle income country, with a per capita GDP of 5900 US Dollar in 2011 (The World Factbook, 2011). The population is distributed over three regions: North, Middle, and South, with the majority (71.5%) concentrated in the country's three largest urban areas: Central Amman, Zarka and Irbid governorates (Jordanian Departement of Statistics, 2007).

In 2007, 60.7% of Jordanians were under the age of 25 years and children below the age of 15 years constituted 37.3% of the population. Individuals 65 years and over made up just 3% of the population (Jordanian Departement of Statistics, 2007). Despite a declining fertility rate, the population is expected to double within the next 30 years (Hijazi, 2005). Migration from neighboring countries is a strain on the social and economic fabric of Jordanian society.

In addition to the estimated 1.7 million Palestinian refugees, there are also around 500,000 displaced Iraqis in Jordan because of the Gulf War and subsequent civil conflict (World Health Organization, 2009), and more recently about 464,000 refugees from the conflict in neighboring Syria and this number is estimated to significantly increase by the end of 2013 (UNHCR, 2013).

2.2.3: Economy

Jordan is a low-middle income country whose economy is among the smallest in the Middle East, with insufficient supplies of water, oil, and other natural resources, and the resultant heavy reliance by the government on foreign assistance and remittances from Jordanians who work overseas and limited revenues from tourism and few manufacturing services (The World Factbook, 2011). Other economic challenges for the country include chronic high rates of poverty, unemployment, inflation, and a large budget deficit. The National Poverty Alleviation Strategy (2002) indicated that up to a third of Jordanians live below the poverty line (The World Factbook, 2011).

In 2007, the unemployment rate was estimated at 14.3%, and was highest among women (25.4%) and young people (51.3%). Since assuming authority in 1999, His Majesty King Abdullah has implemented significant economic reforms, such as opening up of trade, privatizing state-owned companies, and eliminating most fuel subsidies, which have spurred economic growth in the past few years by attracting foreign investment and creating jobs. The global economic slowdown post 2008; however, has depressed Jordan's GDP growth. Export-oriented sectors such as manufacturing, mining and the transport of re-exports have been hit the hardest. The budget deficit is likely to remain high, at 5-6% of GDP, and Jordan will continue to depend heavily on foreign assistance to finance the deficit in the coming future (The World Factbook, 2011).

2.2.4: Social life in Jordan

Apart from the home, the mosque (Muslim place of worship) which is present in every community in Jordan is the most important place for socialization among male Muslims. Muslims offer prayers (Salah) five times a day, preferably in the mosque. Additionally, Friday noon sermon (Khutbah) is a special prayer where all Muslim men attend at the mosque. Other than the mosque, in larger urban areas, social and sport clubs exist with recreational facilities almost similar to those in developed countries, in addition to coffee houses where both men and women socialize in the evening. However, many of these clubs and coffee houses are private and relatively expensive, and as such are not easily accessible to everybody. On the other hand, people in villages and rural areas congregate in large halls called Madhafah during community events like wedding parties, funerals, and elections. The next section

describes the health care system in Jordan, its regulatory bodies, health insurance and provision of health care services in the country.

2.3: The Health Care System in Jordan

Jordan has one of the most developed health care infrastructures in the Middle East. Compared to other developing countries, Jordan has achieved significant improvements in health indicators such as the under-five year and maternal mortality rates (WHO, 2006). Such progress can be attributed to improvements in nutrition; wide spread immunization programs, improved access to safe water and sanitation, and increased capacity in physical infrastructure and medical staffing, along with improved access to health care services. As a result, the overall mortality rates have decreased significantly for all age groups (Jordanian Ministry of Health, 2011).

The governance of the health care system in Jordan is vested in the Ministry of Health (MoH), mandated by the Public Health Law and other legislation to license, monitor and regulate all health professions and institutions in the country (Jordanian Ministry of Health, 2009a). The High Health Council (HHC) is a governmental institution and the umbrella for all health sectors in Jordan. Its role is to formulate and follow up the implementation of national health policies (High Health Council, 2011). HHC is also responsible for identification of the needs of health sector, supporting scientific research, and promoting qualifications and motivation of health workforce in the public sector.

The HHC has announced the health strategic plan for the year 2012 which has a wide range of objectives aimed to promote and enhance the health care system in the country (High Health Council, 2012). The plan includes the following objectives:

- Provide the whole population with a reasonable health cover.
- Maintain equity among population in receiving and accessing health services whether having a health cover or not.
- Provide high quality health care services congruent with international standards.
- Increase financial support to primary health care services to maintain its continuity.
- Computerize the administrative, financial, and data bases systems at all levels of health care provision.

- Strengthen the partnership between the sectors to create a distinct health system based on the integration and control spending.
- Modernize and develop a central ambulance and emergency system in the Kingdom.
- Activation of reproductive health programs in line with all the strategies approved.
- Direct the support for the most vulnerable groups, particularly the elderly.
- The institutionalization of national health accounts and review public sector spending as a reference to financial policy.

Health care services in Jordan are provided through a network of health centers and hospitals in both the public and private sectors. The public agencies are: the Ministry of Health (MoH), the Royal Medical Services (RMS), and two large university teaching hospitals which are non-governmental but still considered to be in the public sector. Furthermore, the United Nations Refugee Work Agency (UNRWA) is responsible for providing health care for 1.7 million Palestinian refugees in Jordan (Hijazi, 2005).

Private hospitals primarily serve patients with private health insurance and for those who can pay medical costs up-front, the RMS caters to military personnel and their dependents, while university hospitals provide health care to university employees and their dependents. All of the above mentioned providers also accept referrals from hospitals run by the MoH for certain conditions. For example, heart surgery is not available in the services operated by MoH. Moreover, for urgent cases, when there is a problem in the availability of beds in MoH hospitals due to high occupancy rates, patients are referred either to the university hospitals or to the private sector and the MoH pays the expenses. The next sub-section discusses the health insurance structure in Jordan.

2.3.1: Health insurance

Having health insurance can provide better access to health services; therefore, providing people with more continuity of health care. The government of Jordan is committed to attaining the goal of general health insurance for all citizens. The first health insurance scheme in the kingdom was introduced in 1963 by the Royal

Medical Services (RMS) for military personnel and their dependants. The other major insurance scheme, the Civil Health Insurance Plan (CHIP), covers about 20 percent of the population comprising all civil servants (non-military personnel) and their dependants. Moreover, individuals certified as poor, the disabled, children below the age of six years, and blood donors are also formally covered under the CHIP. Among those who are insured, almost 11% are covered by more than one source of health insurance. For example, a civil servant whose husband is a military staff can have dual health insurance, one through CHIP and the other through RMS as a dependant.

The private health sector also plays an important role in providing health services to the non insured citizens. About 17.7% of the population is not covered by any health insurance plan (Ajlouni, 2010). These citizens cannot access the private services offered by private hospitals and clinics. However, any individual can access MoH facilities and pay highly subsidized charges for the entire range of health services.

Health care costs in Jordan are borne by four major sources: 45% of costs are met by public funding raised through the taxation system; 43% are borne by households out-of-pocket expenditures for medications, payroll deductions for insurance, and user fees; 8% of costs by foreign donor contributions; and 4% by private companies mostly in the form of health insurance fees at first class level for their staff (Hijazi, 2005).

2.3.2: Provision of health care in rural Jordan

Private health care services, university hospitals and Royal Medical Services are mostly concentrated in the urban areas. Health care services in rural and remote areas in Jordan are provided mainly through primary health care centers run by the Ministry of Health (Jordanian Ministry of Health, 2006). These primary health care centers deal mainly with common but minor health problems in the community through a mix of preventative and curative services. There are 684 such primary health care centers distributed over Jordanian governorates of which 526 centers are in rural areas (Jordanian Ministry of Health, 2009b). Primary health care centers in Jordan can be categorized into: village clinics, primary health care centers (PHCs), and comprehensive health centers (CHCs) (Khoury & Mawajdeh, 2004). The village

clinic is usually run from a single room and is visited by a physician from the nearest primary health care center on scheduled days. A nursing aide is assigned permanently to the clinic and organizes the waiting list of patients and prepares patients for clinical examination by the physician.

The primary health centers (PHCs) offer general practice services and maternal and child health care provided by a physician, nurse and midwife. Administration is usually performed by the physician and a secretary, with patient-based medical records maintained manually. Among the functions of the PHC are immunization, dental care provided by a dentist, and a pharmacy which supplies the most important drugs, usually according to World Health Organization (WHO) recommendations. Primary health care centers are open six days a week (Jordanian Ministry of Health, 2010).

The comprehensive health center (CHC) is the highest level facility in the primary health care services; it usually provides health care services to a group of villages in the rural areas. CHCs are not only available in rural areas, as there are some in urban areas as well (Jordanian Ministry of Health, 2009b). There are 84 CHCs in Jordan. The CHC is staffed by several physicians, nurses, midwives and an administrative team including accounting and secretarial personnel, with a family-based manual record system. In addition to general medicine and family medicine, the CHC offers emergency services including minor surgery and specialty services provided by MoH specialists who visit on scheduled dates. Other services include immunization, dental services, pharmacy, laboratory services and radiology (Jordanian Ministry of Health, 2010).

In rural areas, the primary health center and the village clinics are entirely dependent on the sole physician, thus when the physician is on leave, the service is essentially paralysed as a covering physician is almost impossible to be obtained. Therefore, Jordanian patients have been acculturated by the system to seek medical advice or care only from a physician, and not other members of the health team. The system promotes this culture through procedures that make physicians the eventual decision makers in the health care process.

The above reflects the highly centralized nature of health administration in Jordan (Mrayyan, 2005). In any health care facility in Jordan, the physician's approval is required to access each stage of treatment. Non-physician health team members such as nurses or laboratory technicians can only perform even simple screening procedures such as checking blood pressure or measuring blood sugar on an order or request from the physician (Mrayyan, 2005), and this limits their ability to provide basic health care where needed. The next section presents a brief about the situation of health workforce in Jordan.

2.4: Health Workforce in Jordan

With regards to its health workforce, Jordan fares well and is considered a net supplier of human resources for health to many countries, especially the rich Gulf countries in the region. It is almost self-sufficient in health and medical education and to a large extent in postgraduate specialties training (WHO, 2009). However, the country lacks a comprehensive plan for the development of health human resources to address both local and regional needs, especially among physicians. Therefore, human resources for health still constitute a priority in the national agenda of Jordan, and this is clearly reflected in the National Health Strategy 2008-2012 stating that "manpower" is the main pivot of health service provision (High Health Council, 2011).

While improving health is the main and primary aim of any health system, it is not the only one. The target of good health has two dimensions: goodness and fairness. Goodness means a health system responding well to what people expect of it; fairness means it responds equally well to everyone, without discrimination (World Health Organization, 2000). In the national health strategy 2008-2012, the main challenges concerning the health workforce in Jordan were inadequate training plans, unclear job descriptions, poor management of human resources, difficulty in attracting and retaining qualified personnel, lack of a clear career path for most of the healthcare professions, and misdistribution of human resources across the country (High Health Council, 2011). Overall, physicians constitute 13.5% of the MoH staff (all types including residents), 27.8% are nurses, 15% administration staff and the remaining are distributed to other positions such as drivers, technical personnel, catering and laundry services personnel (WHO, 2009). The situation of medical

workforce in Jordan is further discussed in the section below.

2.5: The Medical Workforce Situation in Jordan

Jordan, as a developing country, faces considerable difficulties in recruitment and retention of health workforce in Jordanian rural areas, especially physicians (Jordanian Ministry of Health, 2009b; Tamimi & Tamimi, 2010). Jordanian physician have reported high turnover rates from their locations in both urban and rural areas, especially when offered the opportunity to work in highly remunerative positions within the private sector or in overseas positions such as in the oil-rich Gulf countries (Tamimi & Tamimi, 2010). Rural areas, as they are served by primary services, would be expected to be adversely affected by such turnover as they have less options and access than urban people to both public and private health services (Jordanian Ministry of Health, 2009a).

A number of reasons have been postulated for such turnover, such as unsatisfactory work conditions (Jordanzad, 2011) and the lack of rural community orientation in the medical education curriculum (Al-Qudah, 2011). That is, physicians are trained to work within large urban-based hospitals which have relatively sophisticated equipment and resources. When they practice in rural areas they are challenged by a different work environment from that where they had received their training. The diverse cultural and social variances between health team members of urban origin and rural communities can also lead to lack of cultural competence and poor communication (Lewando Hundt, Alzaroo, Hasna, & Alsmeiran, 2011). Working in such unfamiliar work environments can be stressful and encourage turnover at an early stage of employment. Even those physicians with experience of working in rural areas choose to leave these areas due to the poor infrastructure of rural health facilities in Jordan and the lack of opportunities for career progression (Al-Qudah, 2011; Jordanian Ministry of Health, 2006). The high turnover rate has a destabilizing influence on the delivery of health services and also means the loss of valuable experience.

In 2006, statistics of the total number of physicians registered in the Jordanian Medical Association (JMA) revealed quite a high number (12,050) compared to other countries (Jordan Ministry of Health, 2006). By 2009, this number had increased by 22% to reach 14,674 (Jordanian Ministry of Health, 2009b). The ratio

of physicians to population has been improving in the last 5 years reaching 24.5 doctors per 10,000 (Jordanian Ministry of Health, 2009b). However, currently 34% of the total registered physicians work overseas (Tamimi & Tamimi, 2010). Based on the previous statistics which mentioned that 34% (4989 physicians) of the total 14,674 Jordanian physicians work overseas, the number of physicians currently working in Jordan is 9,685 (14,674-4,989). Therefore, the actual physician/population ratio is 16.1/10000.

With regards to medical workforce, 60% of physicians in Jordan work in the primarily urban-based private sector leaving the remaining 40% to work in the public sector (Hijazi, 2005). Given that, private health services are mainly offered in urban areas, similar statistics were reported by the WHO which reported that nearly two thirds of the Ministry of Health physicians (64%) work in hospitals in urban areas, leaving 36% of physicians to work in primary health care facilities in the remote areas (WHO, 2009). While these statistics may seem satisfactory given that 20% of Jordanians live in rural areas, they do not reveal the full picture of turnover rate among rural physicians and the resultant disruptions to smooth provision of primary health care services. Moreover, exact data about turnover rates of physicians from rural areas in particular are scarce and available information about this issue are mostly anecdotal from local newspapers and websites. The next section provides a brief description of the process of recruiting physicians in Jordan.

2.6: Recruitment of Physicians in Jordan

Most physicians after graduation in Jordan are recruited by the public sector, especially the Ministry of Health. While the MoH recruits the majority of the graduate physicians, some graduates are committed to RMS if they receive military scholarships. Furthermore, the private sector is also keen to employ new graduates, especially as they can be recruited on quite low starting salaries (Tamimi & Tamimi, 2010). All job seekers looking for governmental careers are required to apply to the Civil Service Bureau which is responsible for nominating employees to all governmental institutions based on their request.

The Civil Service Bureau maintains a national register of all graduates from different specializations. When recruiting physicians, the MoH must indicate the number of

physicians they need and the costs for such recruitment in consultation with its human resources and budgeting departments. The Minister has to approve the decision for recruitment. Finally, the MoH sends their requirements list to the Civil Service Bureau which nominates the names to fill vacant positions. In general, the recruitment process of physicians, as well as for other government professionals, can be time consuming due to complicated and long administrative procedures. The newly hired physicians are assigned to locations based on the needs of hospitals and primary health care centers. The new physicians usually take the place of older physicians who are relocated to their preferred postings. This results in rural areas being serviced by newly graduated physicians who lack professional and administrative experience. In the next section, a description of the medical education in Jordan is provided.

2.7: Medical Education in Jordan

Medical education in Jordan started in 1972 with the establishment of the country's first university, Jordan University. A second medical school was established in Al-Yarmouk University at the northern city of Irbid in 1984 which moved later to Jordan University of Science and Technology (JUST) in 1986. A third medical school was founded in 2001 in Mutah University (MU) in the southern region in the city of Karak. Finally, in 2006, a fourth medical school was established in the central region of the country at Zarka city within the Hashemite University (HU). All of the medical schools have been established in public governmental universities; there are, to date, no private medical schools (Tamimi & Tamimi, 2010).

With the continuing evolution of health care delivery and with advances in medical technology, the appropriate specialty mix within the medical workforce is still debated. Studying career preference can help provide important information to aid in planning educational programs, set priorities, and plan for the provision of adequate health care. The preference of medical specialties chosen by medical students has an important role in the future workforce in health care organizations, especially in times of over or undersupply of physicians (Khader et al., 2008).

All medical schools in Jordan follow the same six-year program. The first year covers general sciences. The second and third years introduce the basic biomedical

sciences in a modular format. The fourth and fifth years cover clinical clerkships, in which the clinical specialties of surgery, medicine, pediatric, and obstetrics and gynecology are introduced along with selected subspecialties such as radiology, anesthesia, dermatology and ophthalmology (Khader et al., 2008). During the sixth year, clerkships in the four major specialties are repeated, with the option of having two elective months.

At the end of the 6th year, students are assessed by a comprehensive theoretical assessment of mainly written examinations, and a clinical assessment conducted and supervised by several committees composed of faculty teaching staff, national external examiners from other Jordanian medical schools, and external examiners from Arab and western universities and students who pass both written and clinical assessments are awarded the Bachelor's degree in Medicine and Surgery (Tamimi & Tamimi, 2010). Overall, the curriculum of medical education in Jordan is similar to that in European countries (Dusek & Bates, 2003).

Graduate students who have completed their medical degrees have to undergo a general training program for 12 months after which they will be assessed for both knowledge and practice, and those who pass the assessments will be considered as registered general practitioners (GPs). So, the total study and training time to become a GP is seven years. Due to the good quality medical education in Jordan, the quality of Jordanian physicians is well recognized, both in the region and internationally, and results in many physicians being hired outside the country which has a subsequent negative effect on the retention of physicians in Jordan (Tamimi & Tamimi, 2010). The Dean of the Medical College at Jordan University has announced that one third of the university medical graduates work in USA and European countries due to the reputable medical education programs in Jordan (Ammon news, 2012). Additionally, Jordan is recognized in the region as a training destination for health professions (WHO, 2009), which is reflected by the large number of overseas students studying medicine and other health subjects, especially from Syria, Palestine, Sudan, Yemen, and the Gulf Countries such as Saudi Arabia and Kuwait (Jordan University of Science and Technology, 2013). The next section discusses the impact of culture on medical education in the Jordanian context.

2.8: Culture and Medicine as a Profession

In Jordan, as well as in all other Arab countries, being a physician carries a very high level of social and professional prestige (Oweis, 2005). It is a dream of the families that one of its members can be a physician, and towards this, family members do their best to support the education and training of their children so that one of them can become a physician. Therefore, competition between students to study medicine can be intense. The high prestige bestowed on the medical profession appears to even overcome gender restrictions, as revealed in a study from Saudi Arabia where women who are traditionally not allowed to work in various professions such as nursing can study and practice medicine (Vidyasagar & Rea, 2004).

2.9: Summary

In spite of the large numbers of medical graduates every year, Jordan still suffers from the consequences of high turnover rates of its physicians due to the competing attraction of working in the private sector or neighboring oil-rich countries. As health care services in Jordanian rural areas are mainly provided by the MoH with relatively little private sector involvement, these areas are particularly vulnerable to physician turnover. Therefore, this study aimed to explore the factors related to the turnover of physicians working in the rural areas and identify the effect of socio-cultural and work related factors on turnover of Jordanian physicians from the rural areas. The next chapter of this thesis is an extensive review of the relevant literature on turnover behaviours among rural physicians and factors affecting their decisions to leave rural practice. In addition, turnover of other health care workers from different disciplines and different countries is discussed in the same chapter.

Chapter Three: Literature Review

3.1: Introduction

This chapter reviews the existing literature relevant to turnover of physicians working in rural areas globally with a focus on the developing world. The chapter also reviews the literature on turnover among other health care personnel such as nurses and allied health care professionals. The chapter also analyzes what is known about the topic of interest. The chapter presents definitions of key concepts, consequences of turnover, management of human resources in health care system, turnover of physicians in both developed and developing countries, and finally factors thought to be associated with turnover of physicians.

3.2: Methods of Literature Search

The literature in this study was selected from a wide range of academic journals and books in both printed format and electronic databases. In order to identify relevant studies, electronic databases such as Medline, Google Scholar, Ovid, PubMed, and CINHAL were searched with key words relevant to the main research problem. The general search structure for electronic databases was (turnover or synonyms) and (retention or synonyms) and (rural or synonyms) and (physicians or synonyms with turnover and its synonyms).

A number of techniques were used to locate relevant literature. First, the researcher conducted an extensive search of the published literature on the above mentioned databases using the following search terms and key words (turnover OR retention* OR leaving*) AND (physicians* OR doctors* OR general practitioners* OR health professional* OR employee* OR health workforce* OR Staff) AND (rural* OR remote* OR underserved). Second, the researcher searched the bibliographies of all located and relevant papers for additional potentially relevant references as this bibliographic searching was supplemented by citation searching and manual searching of an extensive collection of relevant reprints. This process was performed iteratively until no new potentially relevant references could be identified and

saturation was felt to have been reached. Third, data from national Jordanian reports or reports of international organizations such as WHO were included in the review, in addition to information about the issue under study from local Jordanian newspapers and web pages. Finally, non-published literature (grey literature) such as those revealed by doctoral theses, reports, and conference papers were searched for more detailed information.

The above search strategy revealed over 800 potential papers for review. The abstracts of these papers were screened to ascertain their relevance based on key words used and the pre-determined inclusion and exclusion criteria as shown in Table 2 below.

Table 2. Inclusion criteria of selecting papers for review

Criteria	Inclusion criteria
Time period	1980-2013
Language	Arabic, English
Place of study	International but filtered to take account of transferability across countries.
Aspect of health care	Must specifically deal with workforce turnover or retention.
Concrete factors relevant to turnover or retention	Must identify specific reasons contributing to physicians' turnover.

This process identified about 550 articles for review. Additionally, some articles located using the search terms rural*, turnover*, and physicians* dealt with factors that were not principally related to turnover. On the other hand, data from reports and web pages was more difficult to judge its relativeness as they were presented without abstracts.

3.3: Definition of related terms

Turnover and retention of employees are complex concepts, and employees' reasons for staying and leaving a workplace are diverse. The decision to resign or stay at work is multifaceted and one that is not made carelessly by any worker. This

complexity of factors associated with retention or turnover is supported by research from around the world (Boxall, Macky, & Rasmussen, 2003; Cheney, Willetts, & Wilson, 2004; Lehmann, Dieleman, & Martineau-t, 2008). These studies found that a rural employee's decision to leave or stay is due to the combined influence of several complex variables. The worker's perceptions and attitudes about themselves, their values, their job, their organization and their place in society influence such decisions and play an important role in turnover process. To better understand the problem, it is helpful to review operational definitions of certain concepts pertaining to the main issue under research. These concepts include definition of work, defining the term "rural", and defining turnover.

3.3.1: Definition of work

This research is trying to identify factors associated with turnover of rural physicians from their work locations; therefore, it is valuable to define the term "work". While there are several definitions of work, from an economic perspective one early definition referred to work as a mean by which the goods and services that society needs are produced (O'Toole, 1973). In contrast, the social viewpoint of work views it as of first importance to the individual concerned, as it takes up much of our time, steers us to particular social circles, generates daily troubles or triumphs, and defines our political interests and personal identities (Seeman, 1974).

From a social perspective work serves multiple functions for an individual and the community. It allows an individual to gain knowledge, skills and mastery over themselves and their environment. By either producing goods or providing services, workers are valued by others. The individual is able to compare the evaluation of themselves against others' evaluation of them and thus gain a sense of personal worth. Since workers see themselves as both the seller and as a commodity to be sold on the market, their self-esteem depends on conditions beyond their control. If the worker is successful, they may consider themselves valuable; if they are not, then they can consider themselves worthless (Fromm, 1968). Thus, work may be defined not only in terms of its function in society but also in terms of its significance for the individual worker including its contribution to a worker's sense of 'place' in society. Therefore, this perspective of 'work' has implications for workers, organizations, governments and communities.

3.3.2: Definition of the term “Rural”

The term ‘rural’ has been widely argued in the literature. Many studies and articles that were reviewed for this research provided several perspectives on the term. Terms like “remote” and “underserved” were interchangeably used with “rural” in the literature. It has been reported that “rural” is a ‘vague and ambiguous term’ (Woods, 2005, p. 4). Some of the key features associated with the term rural are: small population groups, small villages, sparse settlement and inaccessibility, or at least distance from large urban cities (Cromartie & Bucholtz, 2008). The United Nations itself recognizes the difficulty of defining urban and rural areas globally (Dolea, Stormont, Shaw, Zurn, & Braichet, 2009), reporting that because of national differences in the characteristics that distinguish urban from rural areas, the distinction between urban and rural population is not amenable to a single definition that would be applicable to all countries.

Another important factor in defining rural areas is the total surface area of the country (Hall, Kaufman, & Ricketts, 2006). A rural area in a large and developed country like Canada, USA, or Australia has entirely different characteristics from those in small developing countries because of good transportation systems, affordability, and accessibility of services in the former and poor services in the latter. For example, an area at a distance of 50 km from a major urban centre in Australia or USA is not considered rural due to large surface area of these countries and due to good public and transport services. However, the same distance in a small developing country, like Jordan, is considered sufficiently far to be termed as rural.

Each country has its own definition for these terms, taking in consideration two main elements in most cases: the settlement profile (population density, availability of proper infrastructures) and the accessibility from an urban area (distance in kilometres or hours drive) (Hall et al., 2006). Hays (1999) stated: “it is not easy to understand, at first glance, why a picturesque rural town 30 km from a large English city would have as much difficulty attracting health professionals as a dry, dusty and remote inland town in Australia”. For the purpose of this research, ‘**rurality**’ will be measured by both accessibility of general services and distance to the nearest urban city (Hall et al., 2006). A distance of about 30 km in Jordan is considered rural due to

poor transportation system and infrastructure. Rural, remote, and underserved are all terms of rurality and will be interchangeably used in this research.

3.3.3: Definition of turnover

There is no exact definition of turnover in the literature (Castle, 2006). However, in their model of turnover behaviour, Price and Muller (1981) defined turnover as the voluntary leaving from an organization. It may also include changing employment status in the same setting, or completely leaving the profession for another profession.

3.4: Factors Impacting on Turnover

Many international models of turnover have been developed to explain factors that are positively or negatively associated with turnover (Bluedorn, 1982; Prestholdt, Lane, & Mathews, 1987; Price & Mueller, 1981). Bluedorn (1982) has developed his model by synthesizing three previous turnover models over various professionals in United States including nurses, army officers, and administrative personnel. However, Prestholdt et al (1987) and Price and Mueller (1981) tested their models on nurses. These models were the most reputed in defining the term ‘turnover’ and demonstrated that the influences on turnover behaviour are multi-factorial. It has been reported in the literature that job involvement, pay, autonomy, promotional opportunities, equity and distributive justice are all motivating factors associated with job satisfaction and hence retention. On the other hand, routine, centralization, job stress and role conflict are associated with turnover (Bluedorn, 1982; Price, 2001; Price & Mueller, 1981). Moreover, Bluedorn (1982) reported that some demographic characteristics like age, education, marital status and length of service play an important role as well.

Turnover models were proposed as generic models of turnover and intended to be applicable across workplaces (Steel, 2002). However, a growing body of literature suggests that these models may not adequately explain turnover behaviour in the health care workforce (Hancock, Steinbach, Nesbitt, Adler, & Auerswald, 2009; Steel & Lounsbury, 2009), particularly for those employed in rural areas. In addition, models of turnover have been developed in Western countries that have different and varied characteristics than those in developing countries. Before discussing factors

associated with turnover of rural physicians, it is valuable to focus on the magnitude of turnover problem and its consequences.

3.5: Magnitude of the Global Health Professional Turnover Problem

Turnover is a global challenge for the health care systems (Daniels, VanLeit, Skipper, Sanders, & Rhyne, 2007; Garrett, 2008). The literature concerning rural workforce turnover is both old and diverse. Mention about rural employee turnover can be found in the literature as early as the 1930s in Australia (Radford, 1939). Later, many studies concerning employee turnover were conducted in Australia itself (Hall, Garnett, Barnes, & Stevens, 2007; Lonne & Cheers, 2000), whilst rural worker turnover has been researched in many other countries like the UK (Mercer & Evans, 1991), the USA (Cross & Billingsley, 1994), Canada (Montgomery, 1999), Thailand (Wibulpolprasert & Pengpaibon, 2003), Japan (Inoue, Matsumoto, & Sawada, 2007), China (Wang, 2002), Zimbabwe (Chikanda, 2006) and Swaziland (Mazibuko, 1999).

Turnover directly impacts an institution's ability to provide effective, efficient and safe care; thus negatively affects the quality of services provided. High turnover rates weaken the structure of health care systems and impede the proper implementation and delivery of health care services (Mobley, 1982). It affects the workforce and its impact varies among staff in different positions and different settings (Buchan, Calman, & infirmières, 2004). The next sub-section goes into greater detail about the direct and indirect costs of staff turnover.

3.5.1: Direct and indirect costs of turnover

Direct costs are those incurred during the hiring process and include costs such as advertising or hiring temporary staff. Indirect costs relate to the termination of employment, orientation and training, and decreased productivity (Hayes et al., 2006). Turnover threatens workforce stability and impedes its functionality due to certain consequences affecting the individual employee, work unit, society, and organization (Mueller & Price, 1989; Waldman, Kelly, Aurora, & Smith, 2004). Turnover can disturb the rhythm and harmony of teamwork that plays a crucial role in the attainment of efficiency and productivity in the organization. The negative consequences of staff turnover relate to costs, poor performance, a decline in morale,

and disruption in the psycho-social environment in an organization (Grobler et al., 2006).

Employee turnover also impedes benefits such as customers' satisfaction, better services, lower costs (Reichheld & Schefter, 2000), and it also leads to lower productivity and lower work efficiency (Zineldin, 2000). Thus, the problem of staff turnover requires managers to be capable of effectively managing staff migration (WHO, 2006). Moreover, organizations need to implement acute corrective actions to compensate staff turnover through ways such as hiring, training, and managing productivity loss (Waldman et al., 2004). The most frequently studied organizational consequence of turnover is monetary cost. It has become evident for most researchers that turnover is expensive. A high level of staff turnover can also result in professional disillusionment as remaining staff question their own employment in this sector (Waldman et al., 2004). The following sub-sections can explain the cost of turnover with more details.

3.5.1.1: Cost of lost performance

The high cost of losing employees has long been recognized in the world (Hayes et al., 2006). A number of identified costs are incurred as a result of employee turnover. These are:

1. Cost of recruitment and replacement
2. Administrative hiring costs
3. Lost productivity before a replacement can be placed in the job
4. Lost productivity due to the time required for a new worker to get up to speed on the job
5. Lost productivity associated with time that co-workers must spend away from their work to train a new worker
6. Cost of constant training
7. Cost associated with the period prior to voluntary termination when workers tend to be less productive
8. Public relations and marketing costs

When rural employees desire to leave their work positions, their efficiency reduces, and their commitment to the organization decreases. An additional unquantified cost

is when employees leave with their unique skills, the replacement staff can take a long time to master these skills (Maertz, Griffeth, Campbell, & Allen, 2007). Moreover, communication pattern between employees can be affected during the replacement time. These challenges in communication and efficiency are discussed below.

3.5.1.2: Disturbance in the communication pattern and decline in morale

In any organization, social and communication patterns develop among employees over time that not only assist them in doing a better job, but also contribute to effective work relationships and feelings of belonging. When an employee leaves, other employees who were sociable with the leaver may feel distressed. If leavers are valuable co-workers, and if the work group is cohesive, turnover can have a negative effect on those remaining (Grobler et al., 2006). Therefore, and for the aforementioned consequences of turnover, it can be noted that management of human resources is vital for organizations in terms of financial cost and disturbance in the psycho-social aspects between the employees. Management of human resources in health care organizations is further discussed in the next section.

3.6: Management of Human Resources in Health Care Systems

Human resources management is an important factor in the progress and improvement of any industry, and its role is vital to attain organizational goals (Devanna, Fombrun, Tichy, & Warren, 2006). However, lack of human resources is an immense challenge for organizations. This shortage may result due to several reasons such as poor distribution of employees, poor financial situation of organizations leading to poor staffing and importantly turnover which is a leading factor in the lack of human resources in the organizations. However, its impact is much more crucial in health services industry as health services directly handle human beings and affect their lives.

The World Health Organization states that "Human resources are the most important of the health system's inputs" (World Health Organization, 2000). The Health workforce is the heart of every health care system and is vital to advancing health. Developing health systems of sufficient, capable, motivated and supported health

workers is essential for overcoming obstacles to achieve national and global health goals. For example, generally, it has been reported that good quality and balanced distribution of physicians have been correlated with positive outcomes in the treatment of cardiovascular diseases, however, staff shortages was associated with child malnutrition (WHO, 2006).

From policy and management perspectives, the health workforce should be prepared through strategic investments in education and training recruitment courses. They should also be supported by their managers to create comfortable work environments (Fritzen, 2007). Among all health team members, physicians play a particularly important role in providing health care services to the population (Chantler, 1999; Ooms, Van Damme, & Temmerman, 2007). Strategies to counteract workforce attrition include managing migration, making health a career of choice, and restricting premature sickness and retirement. For turnover, tailoring education and recruitment to rural communities, improving working conditions more generally and facilitating the return of migrants represent significant retention strategies (WHO, 2006).

Strategies to promote workforce retention in rural areas vary among countries because each country has its own characteristics and its unique work environment. For example, in some developing countries difficulty of transportation may contribute to turnover; however, this is not an issue in developed countries. This notion is reflected in an Australian study which aimed to identify factors that influence foreign physicians' intention to stay in the rural areas in Australia (Han & Humphreys, 2005). Results of this study shown that distance travelled daily and financial cost needed for this travel were considered as influential factors for physicians to accept rural work.

In health care settings, good and effective planning of human resources is crucial element for its success. An adequate supply of personnel is critical to the delivery of health services to the communities. However, the problem is more serious in case of turnover of physicians as the physicians' role is one of the most important key players in the treatment process (Gurmankin, Baron, Hershey, & Ubel, 2002). Physicians' turnover strongly affects continuity of care and abolishes the trust

relationship between the patients and their physicians that is needed for achieving treatment goals.

Effective planning of medical workforce should ensure, so far as possible, that the right numbers of physicians, with the right specialties, are working in the right locations at the right time to meet the current and anticipated future medical care needs of the population. Mismanagement in the planning of any of these elements may lead to system malfunctioning and unwanted outcomes of the health services (Goldacre, 1998).

Planning a well-balanced medical workforce can be more problematic than other professions as generally, medical workforce planning is subject to decisions about several factors such as type of medical services, quality and safety of these services and affordability of the medical services to the population; such planning is even more challenging in developing countries due to limited resources (Laurence, 2008). In most countries, the most common issues in planning a stable medical workforce are both supplying adequate number of physicians and effective distribution process over the country (Duckett, 2005). In general, issues of effective planning of medical workforce have been investigated in the literature worldwide. In Australia, it has been reported that supporting training programs, addressing misdistribution of human resources, recruiting additional practitioners and generating workforce substitutions are all essential factors in maintaining a healthy medical workforce (Brooks, 1994; Dunbabin & Levitt, 2003; Joyce, McNeil, & Stoelwinder, 2004; Lehmann et al., 2008).

Human resources issues of medical workforce were also discussed in the UK (Goldacre, Lambert, & Davidson, 2001). Furthermore, United States struggles with the complex issues related to the size, composition, and distribution of its medical workforce (Dowton, 2005; Stoddard, Sekscenski, & Weiner, 1998; Weiner, 2007). Generally, both developing and developed countries suffer from turnover of medical workforce in rural areas due to a number of complex factors that include management, remoteness, facilities, nature of population and others. The following two sections of the thesis detail factors associated with turnover of rural physicians in the developed and developing countries.

3.7: Turnover of Rural physicians in Developing Countries

Due to poverty and a lack of resources in many developing countries, salaries for health staff have been low. Therefore, health organizations in these countries struggle to recruit and retain their staff within its rural areas, especially physicians (Tamimi & Tamimi, 2010). Developing countries like the developed world often suffer from 'urban bias' in the provision of services and investments in urban areas, reinforcing disparities in access to health services and in health outcomes between rural and urban communities (Atkinson, Cohn, Ducci, & Gideon, 2005). It was reported that, rural residents have poorer health status and life expectancy at birth is lower in rural areas; overall mortality risks among rural communities are attributed to higher death rates from causes such as infectious diseases and injuries (Pong et al., 2011).

In such circumstances of poor resources and poverty, workers start to think about new opportunities. Therefore, staff turnover tend to be high in these countries, especially from rural and remote areas, as they are attracted to the advantage of living and working in urban areas, overseas and in international organizations, as has been observed in Jordan (Tamimi & Tamimi, 2010) and Cambodia (Men et al., 2005). Turnover tendencies among physicians are even higher than other health team members like nurses, support workers, community health workers because of the often higher career aspirations of physicians and the urge for professional development including specialisation.

It has been reported that rural health team members will move to another job or place if retention strategies do not meet their expectations (Dayrit, Dolea & Braichet, 2010). They state also that turnover rates might increase further as employees gravitate towards work-life balance and other motivations, not all of which are necessarily financial in nature. In this context, physicians working in the different health facilities of rural Abbottabad District in Pakistan perceived a wide range of disadvantages affecting their social, professional and family life, if they join in rural areas (Farooq, Ghaffar, Narru, Khan, & Irshad, 2004). Moreover, results of this cross-sectional survey revealed that 70% of the physicians in Pakistan were unwilling to work in rural health facility. The study found also that Pakistani

physicians were neither trained to work in rural settings nor were they provided with proper facilities and service structure to work there.

In Africa, financial incentives were one of the top factors affecting and impacting decisions of turnover (Kotzee & Couper, 2006; Kruk et al., 2010). A descriptive qualitative study using a semi-structured questionnaire interviewed 10 doctors from rural hospitals in Limpopo province of South Africa and the recommendations included increasing salaries and rural allowances; maintaining continuing medical education; ensuring the availability of essential medical equipment and medicines; strengthening rural hospital management and increasing the role of doctors in management; ensuring adequate senior support for junior doctors; and providing recognition and appreciation for the work rural doctors do (Kotzee & Couper, 2006).

However, in addition to the need for higher salaries for rural physicians in Ghana, better working conditions were found to be strongly associated with the choice of Ghanaian medical students (Kruk et al., 2010). In the Ghanaian study, based on discussions with Ghanaian medical student focus groups and physicians in practice, students' stated preference for certain rural postings was influenced by several factors such as free housing, an educational allowance for children, supportive management, shorter contracts before study leave and a car.

Zambia also introduced a package of measures to attract physicians to and retain them in rural areas (Koot & Martineau, 2005). The package includes a rural allowance equivalent to about 30 percent of their salary, but also the renovation of accommodation, contribution to school fees, vehicle and/or housing loans and some support for further education. The high turnover rate of rural physicians in developing countries has raised the need for mandatory rural services in some countries. In South America, Ecuador has initiated a compulsory service program for physicians in its rural areas known as *medicatura rural* (Cavender & Albán, 1998). Based on responses to a self-administered questionnaire completed by 127 physicians who had fulfilled or were currently fulfilling their *medicatura rural* requirement, in-depth interviews with physicians and other officials, and visits to several rural placement sites, the majority of the physicians reported that the *medicatura rural* experience was both professionally and personally rewarding, many

view the program as conceptually flawed with respect to its goal of improving the health status of rural communities.

Another significant issue which has serious consequences on rural medical practice is the international migration of physicians from developing countries. A study was conducted in five countries from Asia, Africa, and South America (India, Nigeria, Pakistan, Colombia, and the Philippines) addressing several core issues related to physician migration (Astor et al., 2005). Respondents in this study reported that physician migration has had a particularly disadvantageous effect on rural areas and public practice settings, and reported also that while migration may not lead to an overall shortage of physicians in a country, responses indicate that it leads to a shortage in the rural areas. Consequently, efforts to provide incentives to physicians to work in rural and public settings are necessary. Similar results were reported by Chinese physicians (Wang, 2002).

Turnover of physicians in rural areas is a major challenge in most developing countries, where rural practice is more serious due to lack of resources (Fritzen, 2007). Jordan, as one is also experiencing a lack of its medical workforce given that 34% of Jordanian physicians registered in the Jordanian Medical Association are working overseas (Tamimi & Tamimi, 2010). This can be explained by the high reputation of Jordanian medical education and training programs which opens the door for Jordanian physicians to catch international work opportunities in Europe and USA (Ammon news, 2012; Derkash & Kelly, 2002). Although the Jordanian government invested in many medical schools in Jordan, which graduate large number of medical students compared to the size of its population, the country still suffers from a critical shortage in physicians within the public health care system (Jordanian Ministry of Health, 2009a). The private sector in Jordan is expanding, and therefore recruits experienced physicians offering them higher salaries and better benefits. In addition, the neighbouring Gulf rich countries attract many physicians offering them better salaries, better work environments and living conditions (Tamimi & Tamimi, 2010).

Due to a high rate of physician emigration, most of the physicians employed in the rural health areas are new graduates from Jordanian universities and overseas

medical colleges. They are recruited to these areas immediately upon graduation by the Ministry of Health. Despite acquiring wide experience in the rural areas, many of those physicians choose not to stay in remote areas (Jordanian Ministry of Health, 2006). The high turnover has a destabilizing influence on the delivery of health services and also means the loss of valuable experience. In his study, Al-Qudah (2011) has reported that physicians in Jordan perceived work in rural area as affecting their families, social life, and professional development. When physicians in rural areas get the experience, they start searching for new opportunities (Kraishan, 2010). This leads to fluctuation in the quality of health care services, therefore, affecting the trust in public health services in these areas.

The MoH has reported high turnover rates of Jordanian physicians in rural areas which is comprehensively affecting the quality of health services provided by MoH in rural communities and raises the need for developing special plans and appropriate motivations to attract and retain physicians into these areas (Jordanian Ministry of Health, 2006). The Minister of Health has announced that the ministry was adopting new strategies including both financial incentives and improving work related conditions of physicians in rural areas to encourage better retention rates (Adhayleh, 2011; Saraya, 2011).

In fact, adopting these new strategies was a result of an open strike announced by Jordanian Medical Association in 2011 as a result of low salaries of physicians in the public sector compared to those in the private sector (Assawsana, 2011). The strike was a result of physicians' dissatisfaction, along with lack of planning by the government and poor health policy related to satisfaction factors of the public medical workforce. Turnover of rural physicians is an ongoing problem in Jordanian rural areas, 40% of Jordanian physicians are employed by the public sector, and the remaining 60% of physicians in Jordan work in the private sector (Hijazi, 2005). This leads to lack of physicians in public hospitals and provides the chance for rural physicians to leave their locations to the benefit of larger public hospitals in urban areas within a short period of time.

There is a paucity of literature concerning medical workforce issues in Jordan. Only few studies have been carried out to examine issues concerning the Jordanian

medical workforce (Al Omari et al., Al-Qudah, 2011; 2009; Khader et al., 2008; Khoury & Mawajdeh, 2004; Tamimi & Tamimi, 2010); however, none of these studies were designed to assess medical workforce issues such as needs, training, incentives, and the work environment. There is passing mention in some of these papers about the difficulties in retaining rural physicians in remote areas of Jordan (Jordanian Ministry of Health, 2009b; Tamimi & Tamimi, 2010).

In conclusion, factors associated with rural medical workforce in Africa and Asia are perceived to be complex as described by the annual report of WHO (2006), the factors affecting retention are multifaceted, and reasons for staying in or leaving a rural workplace are diverse and decisions made by physicians complex. In this context, it is difficult for managers and policy makers to recruit and retain an adequately skilled and motivated health workforce, leading inevitably to workforce shortages, while the inability to sufficiently motivate health workers can lead to decreased productivity and increased turnover rates. It is therefore essential for policy makers at the Ministry of Health to have a good understanding of turnover, retention and motivation issues in both developing and developed countries. The next section reviews the literature of turnover of rural physicians in the developed countries.

3.8: Turnover of Rural Physicians in the Developed Countries

Retention of physicians is vital to the delivery of healthcare services to rural and remote communities in Australia (Humphreys et al., 2002). Shortage of rural physicians in Australia continues despite carrying out various implementations at all levels of medical education, training and practice of specific regulatory and incentive-based programs and initiatives to improve rural medical workforce recruitment and retention (Department of Health and Ageing, 2000). Many studies have investigated turnover and its associated factors in Australia (Han & Humphreys, 2005; Hoyal, 2008; Humphreys et al., 2002; Laven & Wilkinson, 2003).

Humphreys et al (2002) conducted a study aimed to explore the most influencing factors on turnover of Australian rural physicians. Results have shown that the two most important contributing factors of turnover were professional development and on-call arrangements. Other related factors of physicians' turnover included

availability of services and geographical attractiveness. However, physicians were least concerned with proximity to a city or large urban centre. Results of this study also revealed that retention factors were diverse according to geographical location and physicians' age, gender, marital status, years of experience, and hospital duties.

Another study, conducted with 139 rural physicians from Australia, explored the reasons why they left their previous practice (Alexander, 1998). Results of this study reported two categories of main issues related to turnover. The first category was professional issues, such as not being able to perform enough procedural work, long working hours and sometimes being on-call all the time, hospital access and the attractions of a group practice. These issues were listed by a majority of physicians as having influenced their decisions to leave their previous practice. The second category of issues was related to the quality of life including a lack of social and cultural facilities, poor educational amenities for children, and poor roads.

Hoyal (2008) found that retention of physicians in rural areas in Australia is associated with many factors such as maintaining the professional interest of physicians in rural practice, the importance of an appropriate workload, work opportunities for partners, availability of good education for children, financial incentives, availability of quality housing, and cultural factors of the community. Similar findings were reported in a study from Scotland (Richards, Farmer, & Selvaraj, 2005), where all 2070 health care professionals in the rural Scottish areas reported professional isolation and a lack of access to general facilities as important issues contributing to intent to leave rural practice. Results documented that working in a rural background was significantly associated with rural retention in the Scottish context.

North America also suffers from turnover of its rural physicians. In the United States (USA), for example, rural and remote areas continue to struggle in their attempts to recruit and retain physicians (Rosenblatt & Hart, 2000). Canada too is facing a scarcity of physicians in rural and remote areas and rural practice has no longer attracting physicians (Rourke, 2005). To increase number of rural physicians in Canada and promote rural retention, it is of great importance in the Canadian rural medical workforce to increase numbers of medical students from rural areas,

community involvement and support, enhance return-of-service programs, and improve financial incentives for rural practice (Rourke & McIsaac, 2008). Other developed countries such as New Zealand (Kearns et al., 2006) and Japan (Inoue et al., 2007) are also facing difficulties in retaining physicians within their rural settings.

In conclusion, high turnover rates among physicians in rural and remote areas are a worldwide phenomenon (Cutchin, 1997; Hays, 1999). Most countries suffer from high turnover rates of rural physicians regardless of the level of socio-economic development of these countries (Fritzen, 2007). In addition to the importance of retaining physicians, issues of turnover and retention of other health care workers are important for organizations. The following section goes into deeper explanation of factors associated with turnover of other health care workers worldwide.

3.9: A Global Overview of Turnover of Health Care Workers

In addition to physicians, health care workers such as nurses also appear to suffer from high turnover and poor retention in rural areas. The literature reports multidimensional and complex reasons for turnover among such workers. Reasons for dissatisfaction fall into four major categories: job satisfaction, management, work environment, and personal reasons.

Among other health care workers, nurses form the majority of the workforce in most health care organizations. A study that examined the intention of rural nurses to stay in their work places in the Northwest region of the USA (Molinari & Monserud, 2008), documented that turnover intentions was impacted by length of stay and marital status reporting that nurses who were singles and employed from 1 to 3 years have strong intentions to leave rural practice . The results revealed also that, peers, working hours, efficient personal time away from work, reasonable cost of living, and access to recreational activities are all important factors in choosing their practice location. In another study also conducted in Midwestern USA, nurses have reported that long working hours and better financial opportunities as major causes of turnover (Strachota, Normandin, O'Brien, Clary, & Krukow, 2003). Other related

factors included: work overload, poor management styles, and unsatisfactory work environments.

Hospitals and health centers struggle to retain other health professionals in rural areas of most developing countries as is the case in African and Asian countries (Kunaviktikul, Nuntasupawat, Srisuphan, & Booth, 2000; Stilwell et al., 2004). For example, a study from four hospitals in Thailand revealed that nurses were dissatisfied with their salaries (Kunaviktikul, et al., 2000).

In Cameroon, a lack of promotion opportunities, poor living conditions, and a desire to gain experience ranked above poor wages as reasons why health-care professionals chose to migrate, however, in Uganda and Zimbabwe, wages were the most important factor pertaining to turnover (Stilwell et al., 2004). Results from Ghana, Senegal, and South Africa reported that turnover of health workers was associated with poor financial incentives similar to Cameroon, lack of opportunities for further education, lack of recognition, and poor managerial systems in these countries (Awases, Gbary, Nyoni, & Chatora, 2004).

Health workers such as nurses, medical assistants, ophthalmology technicians, laboratory technicians, pharmacy, and radiography technicians in Malawi, a Southern African country, considered continuous education and career progression strategies to be inadequate and perceived human resource management practices such as performance appraisal and the provision of job descriptions as not present in many cases. Health workers felt that they were inadequately supervised, with no feedback on performance (Manafa et al., 2009).

In another study from Africa, 58% of radiography degree students in Makerere university in Uganda reported that they would consider rural practice with certain motivational factors amongst salaries, maintaining professional development and well equipped rural health facilities are core issues (Gonzaga et al., 2010).

Thus factors associated with turnover of health workers varied among studies according to research contexts. Moreover, the variance in work environments among studies plays an important role in determining turnover encouraging factors.

However, because of the unique role of physicians in health care organizations, especially in rural areas, factors associated with turnover of physicians could be different in one way or another. The next section describes the situation with respect to turnover of other health workers in Jordan.

3.10: Turnover of Health Care Professionals in Jordan

In addition to retaining rural physicians in Jordan, the WHO reported that management of human resources of other health care professionals as one of the main challenges for the health sector in Jordan (WHO, 2009). Among other health care professionals in Jordan, nurses play an important role in providing health care services in the country. Therefore, several studies in Jordan have studied turnover behaviour among Jordanian nurses (Abu Alrub, 2007; Abu Alrub & AL Zaru, 2008; Al-Ma'Aitah, Cameron, Horsburgh, & Armstrong-Stassen, 1999; Haddad, 2002; Mrayyan, 2005).

Many Jordanian nurses choose to work overseas as financial rewards are greater than those in Jordan (Abu Alrub, 2007; Haddad, 2002). In addition, there are no incentives to motivate Jordanian nurses to work in Jordan, especially in the remote areas where staff turnover rate is high. This finding is supported by statistics of human resources of health in Jordan which showed that 50% of the newly employed health professionals refuse to work outside major urban areas (Francis et al., 2005).

Workload was another important factor in turnover. A study conducted by Mrayyan in 2005, identified factors of job satisfaction and retention affecting Jordanian nurses and compared nurses from three public and two private hospitals in Jordan. Results of this study revealed that nurses in private hospitals were more satisfied and intended to retain their jobs more than nurses in public hospitals due to higher salaries and lower workloads (Mrayyan, 2005).

In another study, it has been reported that there is a negative relationship between job stress and intention to stay (Abu Alrub & AL Zaru, 2008). Participants also reported a positive relationship between recognition for work performance and intent to stay among Jordanian nurses. Some factors associated with turnover of nurses in Jordan

similarly affected both male and female nurses; however, other factors were of greater importance to females. Al-Ma'Aitah et.al (1999) found that both male and female nurses in Jordan were concerned with professional development, administrative nursing policies, and work physical conditions. The next section of this thesis presents an overall description of factors associated with turnover of rural workforces in general.

3.11: Factors Associated with Turnover of Rural Physicians

Research about turnover has primarily attempted to identify and evaluate variables influencing employee turnover. Because rural turnover impacts on decline of rural service provision, the focus has been on attracting and retaining government workers (Archer, 1999; Chikanda, 2006; Higgins, 1993; Lonne & Cheers, 2000). There are several consistently identified variables found to influence rural government worker turnover- these are related to age, experience, family, pay, professional development, supervision and colleagues (Boxall et al., 2003; Boylan, 1993; Gonzaga, Kiguli-Malwadde, Francis, & Rosemary, 2010; Hall et al., 2007).

Some of the research on turnover has focused on specific determinants such as demographic characteristics of rural workers, while others have taken a more holistic approach to understand inter-related factors in the turnover phenomenon. Indeed, one study in rural Canada that looked at workers from the education, health, human services and law enforcement fields in rural Canada found a commonality in the experiences of living and working in rural areas among the respondents (Montgomery, 1999). Most studies in the literature about employee turnover categorize the factors pertaining to turnover into either professional or personal factors (Boxall et al., 2003; Hall et al., 2007; Montgomery 1999). Porter (1973) and Cheney et al (2004) classified these factors into four groups involving personal, organizational, socio-cultural, and work related factors.

Professional variables which have been found as influencing turnover include salary, working conditions, job role, and the organization (Hall et al., 2007; Harrison & Hubbard, 1998; Kim & Loadman, 1994; Yee, 1990). Related factors include job satisfaction (Baker & Baker, 1999; Newton, 2008), commitment to the job and

organization (Baker & Baker, 1999; Boxall et al., 2003; Yoon & Thye, 2002), adjustment and coping (Hall et al., 2007; Lonne, 2001), and stress (Bednar, 2003; Hall et al., 2007).

The effect of these factors is also determined by employment opportunities and if such opportunities are limited, there would be less motivation for turnover (Brandes et al., 2008; Chirumbolo & Hellgren, 2003; Kim, Price, Mueller, & Watson, 1996). Personal variables include demographics such as age, marital status, education levels, rural experience (Hall et al., 2007; Harrison & Hubbard, 1998), personality characteristics (Church & Waclawski, 1998; Day & Jreige, 2002; Swanson & Fouad, 1999), and community (Boylan, 1993; Hall et al., 2007; Lonne, 2001; Montgomery, 1999). There is some debate with regards to the effect of each of these factors on turnover.

Some studies have found that professional factors were the primary motivator for worker turnover (Newton, 2008; Vandenberg & Nelson, 1999; Yoon & Thye, 2002), while others have found personal and community factors have a stronger influence than professional factors (Lonne & Cheers, 2000; McNearney, Hunnicutt, Maganti, & Rice, 2008). It must be noted that most of these studies are based on one employee group, for example, teachers, physicians, dentists or information technology workers (Baker & Baker, 1999; Hall et al., 2007; Lonne & Cheers, 2000). This can limit the generalizability of the findings to other professional groups. Factors affecting turnover of rural physicians thus can be classified as personal, organizational, work environment factors, and socio-cultural factors. The following section reviews the literature pertaining to each one of these factors.

3.11.1: Organizational factors

The organizations itself plays an important role in retaining employees, for example, opportunities for professional development, and management style within an organization can impact on decisions made about whether to stay in or leave the organization. These factors are discussed in the following sub sections.

3.11.1.1: Professional development

One of the most important factors in retaining physicians in rural areas is their perception of opportunities for professional growth and development (Daniels et al., 2007; Humphreys et al., 2002; Pathman, Williams, & Konrad, 1996). For the purposes of this thesis, professional development was considered to be achievable by three ways; further education and training, opportunity to join specialist residency programs, and regular employee promotion system.

Professional development is an important factor in the retention process, as observed in a study from the USA where rural hospitals with residency programs were more successful in hiring and retaining physicians than those without residency programs (Connor, Hillson, & Kralewski, 1994). Similar findings were reported from developing countries as well such as Pakistan (Malik, Yamamoto, Souares, Malik, & Sauerborn, 2010), Jordan (Al-Qudah, 2011), Nepal (Butterworth, Hayes, & Neupane, 2008), Sri Lanka (Adkoli, 2006), Viet Nam (Martineau-t, 2003), Malaysia (Sararaks & Jamaluddin, 1999), Kenya & Benin (Mathauer & Imhoff, 2006), Fiji (Oman, Moulds, & Usher, 2009) and Mali (Van Dormael et al., 2008).

University medical students in Uganda have emphasized the importance of opportunities for further training as one of the main motivating factors to consider rural practice (Gonzaga et al., 2010). In another study from Nicaragua, 97% of surveyed rural health professionals considered the number of received training courses to be insufficient (Martínez, Villarroel, Seoane, & Del Pozo, 2005). Professional development has been an extremely well-researched area of organizational and worker behaviour and the desire for professional development have consistently been linked with turnover (Boxall et al., 2003; Morgan, 2008). Umiker (1999) suggested that managers should encourage professional development of their subordinates even though they know that they will leave once getting better skill levels or higher educational achievements.

3.11.1.2: Salary and payment

A major issue that affects employees' decisions to stay in or leave a rural or urban setting is financial incentives (Rourke & McIsaci, 2008). For example, rural physicians in South Africa opined that improving their financial remuneration was

one of the most important considerations in their decisions whether to stay or leave (Kotzee & Couper, 2006). Rourke (2010) also contends that appropriate financial incentives and compensation for physicians in rural areas would better retain them in these areas. Indeed, financial incentives are the most commonly used retention strategies for rural health workers in both developed and developing countries (Buykx, Humphreys, Wakerman, & Pashen, 2010; Martineau-t, 2003). The importance of financial benefits has been demonstrated in many studies from the developed countries (Daniels et al., 2007; Pathman et al., 1996; Zurn et al., 2010). In a study from USA it was found that retention was longer for rural physicians who own their practices, since they earn more than if they were employed by the government or private sectors (Pathman et al., 2004).

Africa, on the other side of the world, has the same problem. Low salaries and poor working conditions have led many African countries to lose their skilled health workers at an alarming rate (Bloom & Standing, 2001; Chikanda, 2006). This is not surprising given that wages for health care workers in high-income countries can be as much as 15 times higher than in low-income countries (Vujicic, Zurn, Diallo, Adams, & Dal Poz, 2004). In Ghana, health workers have reported low salaries as the major reason of turnover (Agyepong et al., 2004). Similar results were revealed in Tanzania (Leshabari, Muhondwa, Mwangu, & Mbembati, 2008). Additionally, in an exploratory mixed method study from Uganda, university students reported that they would consider rural practice only if they get attractive salaries and incentives (Gonzaga et al., 2010). Furthermore, rural physicians in Asian countries have reported high turnover rates due to low income and payment, as in Viet Nam (Martineau-t, 2003), Indonesia (Chomitz, 1998), Nepal (Butterworth et al., 2008) and Thailand (Wibulpolprasert & Pengpaibon, 2003).

3.11.1.3: Management style

Dissatisfaction of physicians about management in their organizations was early reported in the literature and pertained to turnover (McHardy, 1958). Several recent studies have looked at the nature of management and turnover of rural physicians (Buykx et al., 2010; Kotzee & Couper, 2006; Matsumoto, Okayama, & Kajii, 2004). For example, In Tanzania, about half of health workers, mainly physicians and nurses, were dissatisfied with their jobs due to many reasons among which lack of

participation in decision-making processes was a contributing factor of turnover (Leshabari et al., 2008).

Inadequate or inappropriately applied human resources management tools have been found to be associated with job dissatisfaction among physicians and nurses in Benin and Kenya (Mathauer & Imhoff, 2006). Similarly, rural physicians in Japan reported that numerous instances of conflicts and interference as a result of the policies or actions of municipal administrators had led many to consider leaving their jobs (Matsumoto, Okayama, Inoue, & Kajii, 2005). In contrast, a collaborative and consultative management style where there was good communications between managerial staff and other staff are critical to improve retention rates of staff, as found in a study among critical care nurses in the USA (Volk & Lucas, 1991).

Relevant to the importance of management style is the managers' appreciation of the work professionals perform. Lack of appreciation has been found to be a motivating determinant among physicians in Malaysia (Sararaks & Jamaluddin, 1999), Fiji (Oman et al., 2009), and in Nepal (Butterworth et al., 2008). In these studies, rural physicians were not satisfied with current managerial policies and perceived lack of recognition and motivation by their managers. Furthermore, Jordanian nurses considered lack of recognition as a leading cause of job stress pertaining to turnover (Abu Alrub & AL Zaru, 2008). These findings are supported by similar results from Viet Nam where appreciation by managers was found to be a key retention factor for rural health workers (Martineau-t, 2003). Another study from Cambodia has reported that weak support and supervision by managers as vital reasons for job dissatisfaction and leaving of health workforce (Soeters & Griffiths, 2003).

3.11.2: Work environment factors

In addition to organizational factors, there are factors related to the work environment that can also affect turnover decisions. These factors include work load, cooperation of other health professionals, and availability of services. Now these factors are elaborated more in the next sub-section.

3.11.2.1: Work load, cooperation of other health team members and availability of general services

Many studies have shown that heavy work load on physicians who are working in a remote setting can influence decisions to leave (Higgins & Szafran, 1990; Kamien, 1998). Turnover of rural physicians in South Asian countries like India, Pakistan, Nepal, Sri Lanka and Bangladesh have been associated with poor working conditions, inadequate facilities, and shortage of drugs and equipment in their rural areas compared to hospitals situated in the cities (Adkoli, 2006; Malik et al., 2010). Malik et al (2010) has reported also that difficult work conditions such as long duty hours can adversely impact on personal and social time leading to stress and job dissatisfaction.

The effect of excessive workloads on turnover intention has been reported from the USA, where 25 percent of the physicians indicated that they were very likely to leave the practice within the next 2 years due to heavy work load (Mainous Iii, Lucier, & Rich, 1994). On the other hand, a tolerable work load has been associated with intention to stay in rural areas, as found in Canada (Higgins & Szafran, 1990), Zimbabwe (Chikanda, 2006), Malaysia (Sararaks & Jamaluddin, 1999), and Viet Nam (Martineau-t, 2003). Other work-related considerations such as on-call arrangements are also important determinants of retention of physicians in rural areas, as found in a study by Humphreys et al (2002) where rural physicians in Australia consistently ranked on-call arrangements, professional support and variety of rural practice as the top three issues, followed by local availability of services and geographical attractiveness. Proximity to a city or urban area was the least important factor.

Cooperation with other team members is influenced usually by both personal and work related characteristics. Personally, the communication pattern differs from one person to another and what is accepted for some people may not be so for others. In the work environment, load of work, size of the team and number of policies in the organization play an important role in the level of cooperation between team members. Moreover, Alexander (1998) has reported that good quality educational facilities for one's children, easy access to health services, and availability of good

social and cultural facilities are all factors affecting physicians' decisions about where to practice.

Another important issue for rural physicians is the availability of job opportunities for their partners (Alexander, 1998). This result agrees with results reported from Australia by Han & Humphreys (2005) and Ozolins et al (2004) who reported that a major concern for physicians to accept rural employment was related to the available opportunities of employment for their partners in these areas. In this regard, rural physicians in New Zealand viewed rural areas as lacking work opportunities for their spouses (Kearns, Myers, Adair, Coster, & Coster, 2006).

Furthermore, the number of years the employee's partner had spent in rural areas is a factor affecting worker turnover. This indicates that the partner has built up several relationships in the area and may not want to leave (Alexander, 1998; Han & Humphreys, 2005). Here we see acknowledgement of the job opportunities of partners as a very important factor in the worker's decision to stay or leave. Mayo & Mathews (2006) reported that spouses who were employed in rural communities were more satisfied and had lower intentions to leave rural practice.

Availability of child care access in rural areas was emphasized in the literature as an important for retention or turnover decisions (Ellsbury, Baldwin, Johnson, Runyan, & Hart, 2002; Veitch & Crossland, 2005). A systematic review of the literature suggests that health workers with family commitments might be unable to work without support of child care services (Buykx et al., 2010). This importance increases in case of female physicians because of long working hours and workload on rural physicians (Wainer, 2004). The extent to which personal factors such as demographic characteristics of physicians affect decisions of turnover are now discussed in the section below.

3.11.3: Personal factors

The next sections present an understanding of the impact of personal factors on turnover.

3.11.3.1: Demographic characteristics

Demographic variables like gender, age, marital status, and number of children can affect physicians' decisions in matters related to their work. Many studies in the literature have shown that female physicians are more likely to leave rural practice compared to their male counterparts (Ellsbury et al., 2002; Wainer, 2004). These results agree with results revealed by a quantitative study from Japan which reported that male physicians showed greater intent to stay in rural practice than females (Matsumoto et al., 2004). This suggestion is also supported by other studies from other countries reporting that females' decisions to stay in or leave rural areas are strongly affected by family considerations (Ellsbury et al., 2002).

The importance of marital status on turnover was also discussed in the literature which suggests that the physician's spouse is crucially influential in making a decision about moving to, remaining in, or leaving a rural work location (Mayo & Mathews, 2006). In this context, a study conducted in Malaysia reported that spouses have an influence on an individual's mobility from his/her work place (Smith & Thomas, 2004). However, in the Malaysian study, there was no significant difference in the intention to leave of physicians and their marital status, with 30.6% of single physicians expressing intentions to leave rural practice compared to 28.5% among married physicians. Other demographic characteristics reported to be associated with making turnover decisions in rural employment included younger age (Matsumoto et al., 2004) and less number of children (Hays, Veitch, Cheers, & Crossland, 1997; Wainer, 2004).

3.11.3.2: Organizational commitment

Commitment to an organization can be led by many factors including employees' expectations from the organization in terms of money, professional development, and satisfactory working conditions. Several studies from different countries were found in the literature and revealed significant inverse relationship between organizational

commitment and decisions of turnover, with those more committed being less likely to leave (Boylan, 1993; Kotzee & Couper, 2006; Matsumoto et al., 2004).

3.11.3.3: Rural background and rural exposure

Many studies, worldwide, have emphasized the influence of rural background of physicians on their turnover behaviours. These studies argue that physicians with a previous rural background are more likely to stay in rural areas for longer periods (Brooks et al., 2003; Inoue et al., 2007). A study conducted in Uganda revealed that rural physicians in Uganda were more likely to have rural background (Gonzaga et al., 2010). Similar findings have been reported from Mali (Van Dormael et al., 2008). Moreover, Indian physicians reported that physicians who have trained in urban areas would not fare well in rural service (Mullan, 2006).

Medical education which is specifically geared towards producing rural physicians appears to have a positive effect on the retention of their graduates in rural postings. In Japan, the Jichi Medical School (JMS) was established in 1972 as the first and only medical school in the country to exclusively produce rural physicians (Inoue et al., 2007). Out of the 1871 graduates from Jichi, 792 (42%) were working in rural areas denoting that although there are still improvements to be made, JMS has succeeded in achieving its aim of supplying doctors to rural areas. Similarly, in China, a study was conducted to compare the role of urban and rural medical schools in the provision of rural physicians (Wang, 2002). All rural medical colleges produced rural physicians. However, 10 out of the 12 urban medical colleges did not produce any rural physicians, whereas the remaining two urban colleges listed only 73 graduates who selected rural practice. These results indicate that rural medical schools may play a valuable role in supplying rural communities with physicians.

In Thailand, the government has aimed to annually produce 300 doctors specifically for rural areas. Students in Thailand are recruited through mechanisms that require them to sign contracts for residency with their provincial health office. Their contract mandates two to four years of public sector employment after graduation. Students conduct their practical training at the location where they will work after graduation, to familiarize themselves with their future working environment (Wibulpolprasert & Pengpaibon, 2003).

A study in Florida, USA, revealed that rural physicians were more likely to have grown up in a rural area, and they were more likely to have been exposed to rural medical practice or living in a rural environment during their medical school and residency training (Brooks et al., 2003). This result is consistent with results from other studies (Daniels et al., 2007; Parker & Sorensen, 1978; Pathman et al., 2004). Similar results were demonstrated in a study related to recruitment and retention of physicians in rural Pennsylvania in the USA (Rabinowitz, Diamond, Hojat, & Hazelwood, 1999). In this study, it has been reported that rural background was the most important independent predictor of rural practice, and any policy neglecting this factor may be unsuccessful. Therefore, demographic characteristics are considered important factors in the retention of physicians in remote areas.

The Australian Commonwealth Government has invested in a national strategy to encourage recruits to rural practice (Dunbabin & Levitt, 2003). This strategy was informed by the overseas experience that rural origin students, and those experiencing early and repeated rural exposure during training, are more likely to practice in a rural location. In another Australian study, it has been reported that doctors with rural backgrounds at Newcastle medical school were 2.5 times more likely to choose rural practice (Rolfe, Pearson, O'Connell, & Dickinson, 1995). This result was also supported by another Australian study (Jones, Humphreys, & McGrail, 2012). Additionally, medical schools have encouraged rural exposures by developing uniquely rural content in their curricula (Dunbabin & Levitt, 2003). Clinical rotations to rural areas may influence medical students' decision to practice in these areas (Dolea et al., 2010).

Hays et al (1997) reported that physicians in Queensland, Australia who have been exposed to rural communities in their undergraduate or postgraduate education were more likely to enjoy practice in rural areas. This finding was reflected in other studies worldwide (Rabinowitz et al., 2001; Wilkinson, Laven, Pratt, & Beilby, 2003). Australia has boosted rural educational programs to help workers adapt to rural areas and cope with rural environments (Dunbabin & Levitt, 2003). Moreover, In Japan, rural exposure during study period was a strong predictive factor of future decision about work place (Matsumoto, Inoue, Kajii, Takeuchi, & Inoue, 2010). Similarly, in rural USA, a 9-month training exposure in a rural community increased

the number of students choosing to practice in a rural setting (Halaas, Zink, Finstad, Bolin, & Center, 2008). However, a study from UK reported that coping with rural work places depends mainly on personal characteristics of the worker himself (Farmer, Iversen, Bond, & Duthie, 2003). In conclusion, there is abundant evidence that physicians who grew up in rural communities or are exposed to rural experiences during their study tend to practice in rural areas. In the next section of the thesis, the extent to which socio-cultural considerations can affect decisions of turnover or retention is discussed.

3.11.4: Socio-cultural considerations

The next sub-sections provide an overview of the impact of the socio-cultural context on turnover of rural physicians.

3.11.4.1: Family considerations

The literature suggests that the number of female rural physicians is remarkably lower than that of males (Jones, Humphreys, & Adena, 2004; Matsumoto et al., 2004; Tolhurst, Talbot, & Baker, 2000). This issue was further supported in the literature by Ellsbury et al (2002) who declared that strong family considerations pertain to decisions of female physicians in accepting rural employment. Moreover, if a male physician is practicing in rural area while his family is far away in another area he will suffer from social isolation and lack of support by family members. In case of female physicians, their role as mothers in maintaining the family can be affected due to workload and lack of time (Wainer, 2004). Family commitments, especially for females, can affect decision of females where to practice (Gow et al., 2008; Harvey-Cook & Taffler, 2000).

3.11.4.2: Community factors

The nature and characteristics of rural communities can be a crucial determining factor in retention or turnover of physicians. Some communities value the role of physician more than other communities depending on certain rural characteristics involving level of education in the community, geographical location of the rural area and community image to rural physicians (Hegney, McCarthy, Rogers-Clark, & Gorman, 2002; Ozolins, Greenwood, & Beilby, 2004).

One of the most important factors relevant to community factors is the orientation and adaptation of physicians and rural communities to each other. A study from Jordan and Georgia (Franco, Bennett, Kanfer, & Stubblebine, 2004) has emphasized the importance of adaptation of health workers to their work context. This result is supported by results revealed by a study from Mali (Van Dormael et al., 2008) evaluating an orientation course for young practicing rural physicians. The programme consisted of four classroom modules; clinical skills, community health practice, management and communication skills, and a practicum supervised by an experienced rural doctor. Out of the 65 trained doctors between 2003 and 2007, 55 were still engaged in rural practice at the end of 2007, suggesting high retention for the Malian context. Moreover, orienting new employees to their new locations is considered one of the corner stones in the health service management strategies which aim to maximize employee productivity (Muller, Jooste, & Bezuidenhout, 2006). Participants viewed the training as crucial to cope with technical and social problems related to rural practice.

Overall, it may not be a single factor but a complex array of factors that appear to be important in retention or turnover, as found in a study in Australia (Hays et al., 1997). In the study, semi-structured interviews were conducted with rural physicians who claimed that they had entered rural practice with intention to stay for a substantial period of time. Participants appeared to be subject to a dynamic balance between opposing pressures to stay and pressures to leave, and in time, they became more susceptible to leave. This result supports the idea that decision to stay or leave is affected by complex factors as reported by studies from Zimbabwe (Chikanda, 2006) and Nepal (Butterworth et al., 2008). In conclusion, factors associated with turnover of rural physicians and revealed in the previous literature are found to be complex.

3.12: Chapter Summary

This study explored factors associated with turnover of Jordanian physicians in rural areas. Chapter 3 has provided definitions of some terms related to turnover such as the term "rural", work, and "turnover" itself. It also presented an overall view of the magnitude of turnover including the direct and indirect costs of turnover. The chapter also discussed turnover behaviours among different health team members with an emphasis on turnover of rural physicians. In Jordan, literature that examined the turnover of physicians is limited and none of the studies found in the literature was designed to assess medical workforce issues such as needs, training, incentives, and the work environment. The next chapter describes the methodology used in this study to address the research objectives.

Chapter Four: Research Methodology

4.1: Introduction

This chapter describes the research methods used in the study. First, the chapter presents the aim and objectives of the study. It explains how the study was conducted focusing on the design, development and administration of data collection instruments. The chapter also provides details about recruitment of participants who were interviewed and those who were surveyed. It begins with presenting the research design, and then it illustrates the sampling techniques, types of instrumentation, data collection methods and related ethical issues.

A brief review of the characteristics of a mixed methods research approach, a description of the sequential exploratory mixed methods approach used in this study, along with the advantages and limitations of this design, are presented. The chapter also includes clear description on how interviews were conducted, and questionnaires were administered. An explanation about methods of data analysis and how validity and reliability were attained are also described in this chapter.

4.2: Aim and Objectives of the Study

The overall aim of this study was to investigate the stakeholders' perception of factors impact decision of physicians to practice in rural Jordan. Due to the nature of the research topic, the limited amount of data on the topic in Jordan, and the unique socio-cultural context of Jordan, it was decided to use an exploratory study design and involve other stakeholders in the research in addition to physicians such as health directors and consumers of health services in rural areas. The objectives of the study are listed in chapter 1, page 4.

4.2.1: Rationale for study

The objectives of this study were selected based on consideration of a number of factors. Firstly, there was limited information and literature about the issue under study. So, it was vital for the research to explore views of different stakeholders about turnover of rural physicians to best inform the research aim. An estimation of

the magnitude of turnover was provided by currently posted rural physicians who examined their turnover intentions (objective 1). Previously posted rural physicians informed the research with in-depth insider information as they were expected to have had a more complete view of the actual situation of what would retain physicians in rural areas (objective 2). It is vital to investigate factors associated with turnover of rural medical practitioners in Jordan to help decision makers in developing viable strategies to overtake this problem (objectives 3, 4 & 5). Lastly, drawn from the data analysis and literature a framework of factors impacting on turnover is presented (objective 6).

The research methods utilized included:

- A review of the published and grey literature
- Focus group interviews
- A structured survey of key informants
- Self-administered questionnaire for rural Jordanian physicians

Table 3 summarises the methods used to address the study objectives. The table also highlights where associated results are presented and discussed within the thesis.

Table 3. Summary of objectives and associated methodologies

Objectives	Methods	Discussion of Results
Assess the magnitude of turnover intention of Jordanian physicians working in rural areas.	i. Survey questionnaire	Chapter 6 Chapter 7
Examine the perceived factors associated with retention of Jordanian physicians working in rural areas.	i. Focus group interviews ii. Survey questionnaire	Chapter 5 Chapter 6 Chapter 7
Document the socio-demographic factors that impact turnover of Jordanian physicians working in rural areas.	i. Survey questionnaire	Chapter 6 Chapter 7
Explore work related factors that affect turnover in Jordanian physicians working in rural areas.	i. Focus group interviews ii. Survey questionnaire	Chapter 5 Chapter 6 Chapter 7
Identify local and community related factors that impact retention decisions among Jordanian physicians working in rural areas.	i. Focus group interviews ii. Survey questionnaire	Chapter 5 Chapter 6 Chapter 7
Provide an explanatory framework of the various factors and their interactions that impact turnover in Jordanian physicians working in rural areas	i. Focus group interviews	Chapter 7

4.3: Academic Review and Approval

The research proposal went through several iterations between March and August, 2010 before the final draft was completed. Advice was sought from the supervisors to ensure that the methods addressed the study's aim and objectives. The proposal was also critically discussed following a formal presentation by the researcher to staff and post-graduate students at the School of Public Health/Curtin University on August 12, 2010, enabling a further refining of the proposal. The final proposal was submitted to the Curtin University Health Sciences Divisional Graduate Studies Committee and was approved without any changes at the meeting held on August 23, 2010.

4.4: Engagement of Academic Advisors

The literature on methodological design argues that researchers bring their own unique experiences and knowledge to the design and conduct of research which would influence not only the choice of research questions posed, but the processes of data collection and interpretation (Creswell, 2003). This can be particularly challenging when researching within unfamiliar nations and cultures. To overcome this, as mentioned by McDade (2008), it was necessary to understand as fully as possible the culture (way of life, values, beliefs, standards, language, behavioural norms, communication styles) within rural areas of Jordan where the research was to be conducted. Therefore, it was considered imperative to seek advice regarding the design and conduct of the study in order to ensure that the methodology was relevant and culturally appropriate, and that the study's final recommendations would be relevant to the Jordanian context. As a result, a professor in public health from Jordan was selected to be an associate supervisor for the study.

4.5: Rationale for Choice of Field Work Location

Jordan was chosen as the key focus area and study site for a number of reasons, outlined below.

4.5.1: Socio-cultural context

Since the researcher was a Jordanian national, it was vital for the research to be conducted within a context familiar to the researcher to enable effective communication and full understanding of the situation. Furthermore, familiarity of researcher to the research context can help to create rapport with the participants so that rich data could be obtained. In this instance, both the researcher and the participants shared the same language and socio-cultural values and background. The researcher is himself from a rural background and lives in a rural community in Jordan. He has a young family and noticed that during each visit to the health center in his area his family received treatment from a different physician, which first brought home to him the issue of physician turnover in rural Jordan.

4.5.2: Context relevance

As mentioned earlier in this thesis, Jordan has 12 governorates spread over three main regions: North, central and south. Six governorates were targeted in this study, two from the north and the four southern governorates as these governorates or some parts of them represent the typical rural life. Within these governorates, there is variation in terms of population size, general services, housing types, and transportation services. For example, in certain governorates, tents are the main types of housing. Moreover, distance from a major urban centre, remoteness and lack of general services are common characteristics of many parts of these governorates. The other six governorates (two from the north and the four central governorates) were not surveyed as their total surface area was small and general services available and easily accessible so that they were more difficult to be classified as typical rural areas.

4.6: Research Approach

Mixed Method Design

This study used a sequential exploratory mixed methods design of both qualitative and quantitative approaches in order to address the research questions. A mixed methods research is ‘an approach to inquiry that combines or associates both qualitative and quantitative forms in the same study’ (Creswell, 2009, p. 4). As a sequential mixed method design, data were collected through consecutive qualitative and quantitative data collection phases (Creswell, 2009, p. 206). In such an approach, there is a sequence of data collection and analysis through different phases, and either the qualitative or quantitative data collection phase can come first.

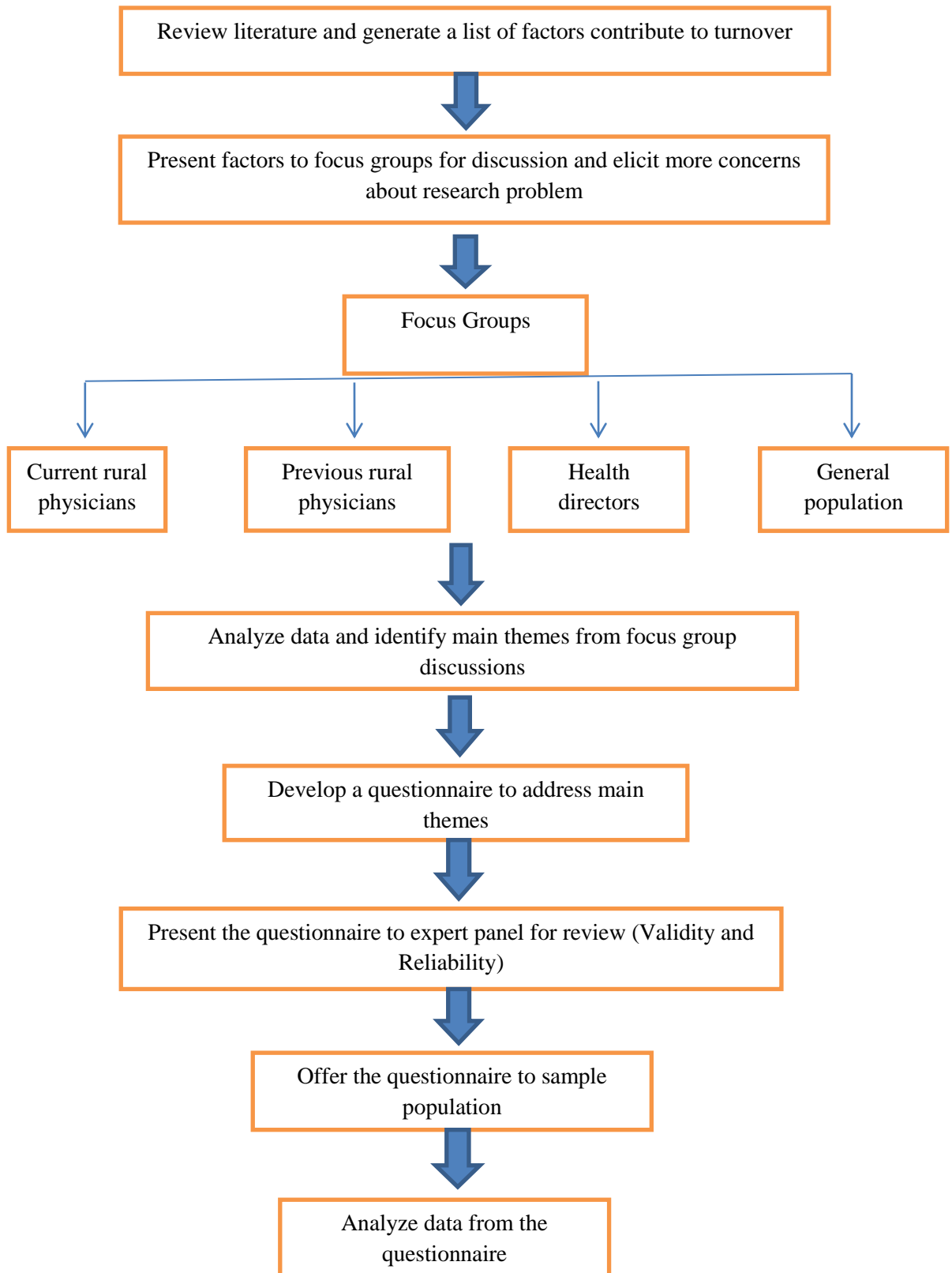
In this study, qualitative data was collected and analysed in the first stage, followed by a second stage of quantitative data collection and analysis which was built on the results of the first stage (Creswell, 2009, p. 211). Brewer and Hunter (1989) are of the opinion that most major areas of research in the social and behavioural sciences now use mixed methods design as such an approach allows investigators “to attack a research problem with an arsenal of methods that have no overlapping weaknesses in addition to their complementary strengths” (Brewer & Hunter, 1989, p. 17).

The rationale for using this specific design in this study was to attain a greater integration of the different method types and to obtain an extensive range of data that was not possible if only one approach had been followed. Researchers use this approach to pursue a better and expanded understanding of a phenomenon, and provide an opportunity to explore the problem in two different ways, qualitative and quantitative (Creswell, 2009). In addition, more insight can be gained using a mixed method approach than through a solely qualitative or quantitative approach. So, a qualitative approach was used in the form of focus group discussions where participants in the focus groups were purposefully sampled to best inform the subsequent quantitative survey of rural physicians.

As there was scarce background information about the research problem in Jordan, this approach was expected to generate a large amount of data (Minichiello, Fulton, & Sullivan, 1999). Qualitative data from the focus group discussion was expected to help inform the development of a survey instrument that could be validated for the Jordanian context. The combination of both qualitative and quantitative methodologies in the present research project allowed for an enhanced scope, depth and exploration of findings creating both measurable and quantifiable data and data that gave priority to insight and reflection based on individual experiences of health practitioners in rural Jordan.

This study was conducted through four different phases. First, the researcher reviewed existing literature to explore and generate a list of factors considered central to turnover process of rural physicians. Then, factors found in the literature to be impacting turnover of rural physicians were presented to selected key members in form of focus groups for discussion and examination. After that, the factors believed to be relevant to Jordanian context were selected to design and develop a surveying data instrument to be distributed to the target population. The survey instrument was developed based on exemplars of other instruments implemented internationally. Finally, the instrument was offered to the sample and data was analyzed. Figure 2 summarizes the whole research design.

Figure 2: *The Mixed-Methods Sequential Research Design*



4.7: Permission to Undertake the Study

The study proposal was submitted to the Human Research Ethics Committee at Curtin University/Western Australia. Approval to conduct this research was obtained in September 2010 (HR 106/2010), (See Appendix A). Permission to conduct the study was also obtained from the Research Ethics Committee at Ministry of Health in Amman, Jordan (See Appendix B).

4.8: The Phases of the Study

4.8.1: Phase One: Preliminary review of the literature

In this phase, relevant and existing literature from both developed and developing countries were reviewed to address main themes. Literature was sourced from various scholarly journal databases such as Pubmed, Google Scholar, Ovid, Medline and CINHAL using the search strategies described earlier in the literature review chapter. The inclusion criteria for selecting the papers have been shown in Table 2 (page 26). In brief, papers had to be related to turnover of rural physicians and other health workers in both developed and developing countries, with a focus on Jordan and other similar contexts. The main issues of relevance related to physician turnover that were identified through the literature review were presented to the focus groups to generate discussions.

After an extensive literature review, factors most commonly described as impacting on healthcare related retention and turnover were identified from both generic models and the general literature. This primary review of the literature revealed multiple factors affecting turnover of physicians such as:

- Professional development of physicians
- Financial incentives of rural practice
- Rural background
- Availability of general services in rural areas
- Organizational and professional commitment
- Work load
- Distance from nearest urban area and transportation issues
- Socio-cultural characteristics of rural population

4.8.2: Phase Two: The Qualitative component

The qualitative phase of this study comprised of focus group discussions with selected respondents. Focus group discussion was the preferred mode to collect data as there was little information about the problem being investigated and to better explore and discover the phenomenon (Tashakkori & Teddlie, 1998).

4.8.2.1: Focus group discussion

Focus group discussion is a research technique that collects data through group interaction on a topic determined by the researcher (Morgan, 1996). The focus group discussion is a special type of group in terms of purpose, size, composition and procedures, its purpose being to listen, gather information and to better understand how people feel or think about a particular issue (Krueger and Casey, 2009, p.2). Focus groups combine elements of both interviewing and participant observation. This is seen to be as useful in answering questions as in-depth interviews, but within a more social context. Focus groups are very helpful in the elicitation of a wider variety of views in relation to a particular issue than possible with individual interviews (Bryman, 2001). Focus groups also enable the researcher to collect a large amount of data in a short time. Moreover, as interaction between participants is a key feature of the focus group discussion; it highlights participants' views and beliefs about the issue and permits reevaluation of the experience one understands (Kitzinger, 1994).

The second phase of the research study was designed to:

- Investigate, explore and describe the issues facing physicians in rural areas in the views of different shareholders
- Develop an understanding of the issues, experiences and needs of physicians in rural areas.
- Generate themes to be explored further in the quantitative stage.

In all, four focus group discussions were conducted involving currently posted rural physicians, previously posted rural physicians, health directors, and consumers of health services from rural communities respectively.

4.8.2.2: Sampling of participants in the focus groups

Participants in the first phase were recruited by the researcher and his associate supervisor (See section 4.4) and then assigned to four groups:

1. Physicians currently working in rural areas.
2. Physicians who had worked in rural areas and left their position in the last 5 years.
3. Health directors from rural areas, line managers of rural physicians.
4. Representatives of Jordanian rural community served by government health services.

Participants in the focus groups were purposively sampled. The advantage of purposive sampling lies in selecting participants who are able to provide rich information about an issue enabling an in-depth investigation of the problem (Patton, 2001). In purposive sampling, individuals most likely to know about a particular phenomenon are selected (Sandelowski, 1995). Participants in the focus groups were selected either because of their familiarity of the study environment and similarity with the survey participants, or because they were directly affected by the problem as rural physicians. Participants were recruited through local professional networks of the researcher and his associate supervisor.

For each of the focus groups, participants had to meet certain inclusion criteria. All participants in the focus groups had to be Jordanian citizens. In case of the group of current rural physicians, participants had to be (1) employed as a physician (2) working in governmental health sector (3) working in a rural area for a minimum of 6 months. The same inclusion criteria were applied for the group of previous rural physicians, however; they should have practiced in rural areas in the last two years. Health directors had to be on their positions for at least 1 year. In the case of group of Jordanian rural community, participants had to be residing in the rural area for the last 2 years and using health services offered by MoH.

4.8.2.3: Ethical considerations of focus group discussions

At the time of commencement the interviews, participants were given a brief verbal explanation about the research and its purposes. All participants were provided with an information sheet explaining the aim and objectives of the study. Consent was

also included in the information sheet and obtained from all participants acknowledging their agreement for discussions to be tape recorded (See Appendix C). The following points were stressed to the participants: the interview is strictly anonymous, and no one other than the researcher would know who had participated; the participant should be open as much as possible; there are no right or wrong answers to the questions offered; the participant has the right to indicate any question does not wish to answer and this would be respected; and the participant would be able to withdraw or close down the interview at any stage without giving any explanation. Additionally, the participants were informed that the information from the focus group would be kept confidential and protected in a locked secure location, and would be accessible only to the researcher and his supervisor prior to destruction in five year time according to Curtin University policy.

4.8.2.4: Organizing focus groups

Compared to other types of interviews, organizing focus groups is considered more difficult and requires more planning (Gibbs, 1997). Finding a suitable place and time convenient to all, recruiting members for the focus groups, and making sure that the environment is comfortable to the participants are all vital factors to be considered when planning focus groups (Litosseliti, 2003). Most of these were not issues for the study, as participants were recruited through the professional network of the researcher and the associate supervisor. Because the topic was significant for all participants, recruitment was also not an issue. Two of the focus group discussions were held at the researcher's home, one in a governmental hospital, and the last one in a restaurant.

4.8.2.4.1: Group one: Current rural physicians

Seven physicians currently working in rural places were purposefully sampled for this group after meeting the inclusion criteria for participation. Purposeful sampling is usually followed when the "researcher solicits persons with specific characteristics to participate in the research study" (Johnson & Christensen, 2007, p. 239). Two of them apologized and withdrew two hours before the appointment. The remaining participants in this group were males between 26 to 35 years. As the researcher lives in a rural area, it was easier for him to access physicians and allowed him to drive to the neighbouring sites to recruit members of the group. However, it was challenging

to assign an appointment suitable for all participants because of their work commitments and transportation difficulties. It was agreed that researcher guarantee dropping off those physicians to their homes after completing the discussion. The researcher also provided complimentary lunch to the participants before the focus group discussions (FGDs).

Discussion commenced by opening questions allowing each participant to talk early in the discussion so that participants could feel comfortable. Additionally, the longer it took a participant to say something in the group discussion, the less likely she/he is to be active and say anything at all (Krueger & Casey, 2009). Participants were asked to introduce themselves and to tell others how long they had been working in their rural settings.

After the opening questions, the topic was introduced for discussion and participants were asked to tell others how they came to practice in rural areas. After that, participants were guided to talk about advantages and disadvantages of rural practice from their personal perspective. Then, key questions addressing the main themes of the research problem were presented for discussion. After completing the focus group discussion, the researcher summarized the main themes and ideas of the discussion, and participants were asked if they had any comments or new ideas to add. At the end of the discussion, participants were given the chance to propose recommendations for health managers to improve retention rates of physicians in rural areas. Moreover, each participant was given the time to conclude the main associated factors with turnover in Jordanian rural areas, and to identify the most important aspects of turnover in her/his own opinion.

4.8.2.4.2: Group two: Previous rural physicians

Six physicians who had left rural practice to work in urban areas were recruited to participate in this discussion. They were selected from a large governmental hospital by the researcher and his associate supervisor. It is worthy to note that all governmental hospitals in Jordan share similar facilities, equipment, and work conditions. For this group, it was more difficult for physicians to find a time convenient for everyone, as governmental hospitals are very busy during the day time, and due to strict rules of the residency program in which physicians were

enrolled. Finally, it was agreed that discussion should take place on a Friday as workload was less during the week ends (Friday and Saturday in Jordan).

One physician left the discussion just after the opening questions as he received an urgent call from the emergency department. The remaining five participants were three females and two males between the ages of 27 - 42 years. As with the first group, discussion in this group was started by introductory questions asking participants to introduce themselves and to give a brief about how long he or she had worked in rural areas. Then, participants were asked about factors that led them to leave rural practice. Where necessary, the researcher was introducing themes that had been overlooked during the discussion. Participants were asked about advantages and disadvantages of rural practice, they were also asked about the most important factor led them leave their places. Then, participants were recommended to conclude major issues that they considered as areas requiring improvement in the rural workforce.

4.8.2.4.3: Group Three: Health directors

As the study was approved by the MoH in Jordan, the approval letter was sent to all health directorates to assist in the study. Contact details of all health directors were obtained from MoH. All health directors in the six governorates included in the study were contacted via phone by the researcher informing them about the study, its aim and objectives, and requesting them to participate in the focus group discussion.

Five health directors responded within a fortnight to the letter acknowledging their willingness to participate as the topic was of great importance to them. Compared to participants in previous two focus groups, it was more difficult to arrange a convenient time for all health directors in this group. Directors were busy, often had tasks or work outside their offices, and had frequent meetings with top line managers. So, the chance of scheduling a meeting with all of the participants was difficult. Additionally, it was inflexible to appoint a time convenient to all participants because of distance between them. Two health directors suggested that researcher should initiate individual interviews to overcome these obstacles. However, the researcher explained to them the importance of group discussion and the importance of following the pre designed methodology of the research. Finally, it was agreed that the Health Directors focus group discussion be held during the weekend at a restaurant at a time and place convenient to all of them.

On the meeting day, all five directors attended the FGD. All were males with an age range of 44-57 years. As with the other groups, the study and its aim and objectives were explained to them. The participants were given the opportunity to introduce themselves. Then, participants were asked about their perceptions of rural practice; the advantages and disadvantages of rural practice; an explanation about recruitment process; why they think physicians dislike rural practice; their role and influence as health directors in encouraging physicians to stay for longer periods in rural areas, the role of MoH in retention process. At the end of around 90 minutes, participants were provided with the opportunity to suggest solutions and propose recommendations and were thanked for their time and effort.

4.8.2.4.4: Group Four: Consumers of health services from rural community

Participants in this group were recruited from the Jordanian rural community by the researcher through his social networks. As the researcher lives in a rural area, it was easier for him to select members for this group than for the other three groups. Five persons were verbally invited to participate in the discussion after explaining the aim and objectives of the study. All participants were males due to cultural limitations especially within rural communities in Jordan. They were married, had children, and were employed in the Jordanian government sectors. Their age ranged from 33 to 59 years. All five were university graduates, including two with masters degrees. Two were school teachers, two served in the armed forces and the fifth was a bank accountant.

Participants were invited to the researcher's house for dinner followed by the FGD. After introducing the research and its objectives, participants were encouraged to introduce themselves, their job, and for how long they had been living in the rural area. They were then asked about their impressions of health center visits, their trust relationship with physicians in the health center and their perceptions of rural physicians. Why physicians didn't stay for long periods in their area and how this impacted on continuity of care and what were their suggestions to promote retention of physicians? Additionally, participants were encouraged to summarize factors affecting decisions of physicians to leave rural practice, and to conclude with recommendations to improve retention rates in Jordanian rural areas.

4.8.2.5: The role of the researcher during focus group discussions

The role of the researcher was important in terms of providing participants with an explanation of the aim and objectives of the study, helping participants to feel comfortable, and facilitating the discussion among group members. He also took down field notes of aspects of the discussion that he perceived as relevant or significant. These notes complemented the transcripts of the discussions that had been audio recorded. At the beginning of each FGD, the researcher tried to ensure that the same information was explained to the group regarding aim, objectives, importance of the study, and the importance of focus group discussion in enriching the research process.

During the discussion, the researcher asked open-ended questions, and answered emerging questions by the group as needed in a simple and clear way so that everyone could hear what was being said. When necessary, the researcher took care to guide the discussion back to the topic under investigation if the conversation appeared to drift or digress. Each participant was active in the discussion and given sufficient time to express his/her feelings and opinion about the topic. Discussions in the FGDs were conducted in Arabic. The time for each focus group session ranged between 60 to 90 minutes which is consistent with the ideal time for an FGD (Krueger and Casey, 2009, p. 158).

4.8.2.6: Transcribing and Analysis of Qualitative Data

Interviews result in large quantities of data and Alreck & Settle (2007) specify the need to summarize the data into meaningful information. Preparation of the qualitative data included transcription of the interviews and checking the transcription for accuracy. As suggested by Creswell and Clark (2007), the data was explored by reading through all the data, recording initial thoughts, writing notes, and looking for codes or themes. Immediately after conducting each focus group, data was transcribed verbatim in Arabic language from the audio tapes into Microsoft Word Documents. Then, it was translated into English by the researcher who tried to ensure that in the translation the data did not lose its richness and meaning (Sperber, Devellis, & Boehlecke, 1994).

Data from the focus groups was managed using ©QSR N-Vivo 8 software, which assisted in organising and preparing the qualitative data for analysis. N-Vivo has a wide range of tools to enable the handling of rich data sets, coding and categorization of data, and linking ideas in many ways (Richards, 1999, p. 5).

Thematic analysis as described by Braun & Clarke (2006, P. 87) was used to refine relevant data and categorized into themes and sub-themes through the following stages:

- Familiarization with data by transcribing them, repeatedly reading the data, searching for meaningful ideas and generating an initial list of relevant ideas.
- Generating initial codes by coding items of interest in a systematic fashion across the entire data set and then collating data relevant to each code. Codes refer to ‘the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon’ (Boyatzis, 1998). This was done by reading the transcripts a few times to get a general sense of the data. The researcher immersed himself in hardcopies of the transcriptions in order to develop themes and patterns across questions and participants (Braun & Clarke, 2006, p. 87). The aim of these first two stages of the thematic analysis was to discover the main themes emerging from the discussions and to begin organising them.
- Searching for themes by collating codes into potential themes and gathering all data relevant to each potential theme. This was done after having a long list of the different codes that were identified from the discussions. Then, ideas were classified into themes and sub-themes and entered to the N-Vivo software.
- Reviewing themes by checking if they worked in relation to the coded extracts (Level 1) and the entire data set (Level 2).
- The common themes and ideas were then extracted for the design and development of the survey questionnaire to be used in phase three.

4.8.3: Phase Three: Quantitative component

This quantitative phase of the research was designed to:

- Explore further and quantify the issues facing Jordanian physicians practicing in rural areas.
- Identify any differences or similarities and gain a more focused understanding of experiences in rural health settings in Jordan
- Investigate and gain further insight about perceptions of rural physicians in relation to current services and facilities.
- Explore experiences and needs of Jordanian rural physicians over larger sample.

4.8.3.1: Development of the questionnaire

This section briefly reviews questionnaire development theories. It also describes the questionnaire development process and its validation procedure. It discusses the rationale for utilizing a questionnaire survey in this study and gives an explanation of the content design (themes and questions) of the survey instrument.

4.8.3.2: Rationale for using questionnaires

The survey, as a method of collecting information from people about their ideas, feelings, beliefs, attitudes, needs, motivations, and behaviour, has been widely used in social science research (Fink, 2003). According to (Gillham, 2000), questionnaires have the following advantages: it is effective in terms of time and money, participants can complete the questionnaire when it suits them in the stipulated period, less pressure for an immediate response, lack of interviewer bias, and allows anonymity of participants. Questionnaires provide a mechanism for collecting measurable data when known variables are present (Gall, Gall, & Borg, 2007). The literature provided documentation of some known variables associated with turnover. Additionally, several studies have used questionnaires to collect quantitative data about turnover intentions (Daniels et al., 2007; Matsumoto et al., 2005; Richards et al., 2005). However, these questionnaires have not been validated for use in the Jordanian context. As a result, this questionnaire was developed. Developing the questionnaire involved the following processes:

4.8.3.2.1: Determine instrument questions

After thematic analysis, factors revealed from the analysis of each focus group discussion were used to generate a variety of possible items contextualized to the structure and environment of Jordanian physicians practicing in rural areas. This step, in fact, consisted of two stages: The first was question selection, and the second was question construction.

4.8.3.2.2: Question Selection

The survey development process began by identifying the relevant content areas using the information identified in the focus group discussions. The researcher developed an initial set of questions extracted from each focus group discussion to summarize the core issues related to turnover behaviour of physicians in Jordanian rural areas. These questions represented broad content areas of concern and served as the underlying dimensions to be assessed by the general survey instrument.

4.8.3.2.3: Question Construction

Once a large pool of questions was accumulated, the items were categorized as representing one or more domains summarizing the core issues related to turnover of rural physicians. The pool of questions was then reduced through a series of reviews. When two questions were deemed redundant from 2 or more focus groups, one question was selected and the other excluded. Questions generated from the focus group discussions and thought to be influencing rural practice included the following:

- Professional development of physicians
- Financial incentives of the rural practice
- Rural background
- Availability of general services in rural areas (shopping centres, internet connection)
- Organizational and professional commitment
- Work overload
- Distance from nearest urban area and transportation issues (cost, time)
- Characteristics of rural population (culture, level of education, lack of trust in rural physicians)

- Cooperation of other health team members
- Availability of resources in rural practice (lack of diagnostic and treating options)
- MoH policy in rural areas (referral policy)
- Routine
- Recreational facilities
- Good quality education for children
- Lack of training sessions in rural areas
- Level of experience of rural physicians
- Social isolation

Some of the above factors relevant to turnover have not been discussed in the previous literature. These factors were specific to the Jordanian context such as characteristics of rural population including culture, educational level, lack of treatment and diagnostic options, referral policy, difficult and costly transportation, and lack of trust in rural physicians. Other factors listed in the literature review and found to be applicable in the Jordanian context were also included in the questionnaire such as intent to leave, feelings about professional isolation, work pressure, and job satisfaction.

4.8.3.2.4: Generation of sample questions

In addition to the processes detailed above, the generation of items during questionnaire development requires extensive work to refine wording and content. To assure face and content validity, items of the questionnaire were compared with likely items generated from a number of sources including consultation with experts in the field, consulting proposed respondents and a review of the associated literature (Bowling, 2002; Priest, McColl, Thomas, & Bond, 1995). In addition, a key strategy in item generation is to revisit the research questions frequently and to ensure that items reflect these questions and remain relevant (Bowling, 2002). It is during this stage that the proposed subscales of a questionnaire are identified and to ensure that items are representative (Ferguson & Cox, 1993). A series of sample questions was created and then sequenced to design the draft questionnaire.

4.8.3.2.5: Designing the initial questionnaire

Johnson and Christensen (2007) recommended using multiple methods in a questionnaire for measuring constructs in order to increase reliability and to avoid measurement-based errors. Alreck (1995) indicated that the use of item scales, such as Likert-type scales, could provide data that are more reliable and valid than other modes of questioning. Based on these recommendations, a five item Likert-type scale was selected for the questionnaire as this type of questions requires short time to answer so that the return rate of the questionnaires could be enhanced and responses could be reliable. A statistician was consulted about arrangement of the questions in the survey to ensure that analysis and interpretation could be easily performed. At the end of this stage the questionnaire was ready to be handled to the panel reviewers.

The initial questionnaire consisted of the following sections:

- SECTION A: Personal Information
- SECTION B: Transportation
- SECTION C: Job factors
- SECTION D: Job satisfaction
- SECTION E: Amenities
- SECTION F: Feelings about professional isolation and work pressure
- SECTION G: Intent to leave
- SECTION H: Physicians' satisfaction level about the community they serve
- SECTION I: Physicians' perceptions about current practice location
- SECTION J: The influencing factors on decisions of physicians to practice in rural areas
- SECTION K: General information.

4.8.3.3: Questionnaire feedback from reviewer panel

The draft questionnaire was presented to a reviewer panel composed of four participants, one from each focus group, for refinement and re-wording of questions to ensure that statements were understandable and meaningful to the participants, and to ensure that the questionnaire consistently measured what it was intended to measure, thus bringing reliability and validity to the study (Bryman, 2001). Every reviewer had enough knowledge about the study, including aim and objectives, hypotheses to be tested, methodology, and the general goals for instrument usage

(Davis, 1992). At the time of conducting discussion of each focus group, the researcher paid attention to this by informing the group members about the methodology of the research and steps needed to develop the questionnaire survey.

At the beginning of each focus group discussion, the group was informed that, by the end of the session they would nominate one of their members to be a panel reviewer to revise the drafted questionnaire. After drafting the questionnaire, the predetermined panel reviewers were asked to make qualitative comments regarding the content of the questionnaire. They were also asked to indicate any issues that they thought were missing and it is necessary to be included in the questionnaire.

Such reviews are designed to assess the content validity of an instrument, that is, whether the instrument possesses sufficient number and types of questions to represent the desired domain of the content (Polit & Beck, 2004). In addition to providing reviewers with copies of the instrument, Waltz & Lenz (1991) recommend that investigators provide reviewers with information on the instrument purpose, as well as a list of pertinent study definitions. In this way, reviewers have the necessary philosophical and theoretical background to provide a comprehensive review of the instrument.

The researcher sent the questionnaire via email to the reviewers drawn from the four focus groups, as all of them had access to the internet. The reviewers estimated that they would take 2 to 3 weeks to complete the review. Because English is the official language used in the medical and other health fields in Jordan, the questionnaire was constructed in English to overcome issues of translation and back translation which may affect meanings of certain questions. However, this was a problem for the reviewer from the community, as his English language proficiency was not strong enough to review the questionnaire. In order to overcome the language problem, the researcher offered to act as an interpreter to facilitate understanding of questions and prevent inaccuracy. The reviewer agreed, and a 2 hour daily meeting was scheduled until the review was completed. After around three weeks, all the panel reviewers sent their responses and made the following suggestions - provide an overall explanation about the study and its objectives in Arabic language, and to include this as the first page in the questionnaire.

In the personal information section, the question about country of graduation was set as: “*What is your country of graduation? A- Jordanian B- Non-Jordanian*”. The reviewers argued that the question should respect participants’ sensitivities, as the public perception about graduates from overseas medical schools, especially those from Eastern European countries, was poorer than that about graduates from Jordanian medical schools. Therefore, the panel suggested changing the format of this question to include a space and fill the country of graduation instead of limiting the choices by Jordanian or non-Jordanian choices. The question in the survey was formatted to: “*What is your country of graduation? (space)....*”.

- In section “J” about the influence of selected factors on decisions of physicians to practice in rural areas; the reviewers recommended the inclusion of one more variable about the physician satisfaction level about the total working hours/week. They argued that rural physicians work more hours than physicians at hospitals because they have only one day off per week.
- In the section on professional isolation and work pressure, the question was revised to read: “I often feel isolated from colleagues”. It was argued that the question should also include also friends and relatives.
- In section I, the reviewers suggested changing the question: “People look more prestigious to physicians in large hospitals to “People hold a more prestigious view towards physicians in large hospitals”.
- In the transportation section, a question about effect of poor transportation on females’ employment was as follow: “*Poor transportation in rural areas restricts presence of female physicians*”. The panel suggested changing the question to: “*In your view, poor transportation in Jordanian rural areas affects females’ decision to accept rural employment*”. Moreover, central to transportation issue, the panel suggested adding one more question about the satisfaction of daily transportation cost for physicians working in rural areas.

- Regarding the question of the effect of rural background on the length of stay of physicians in rural areas, the panel suggested changing the word “*stay*” to “*serve*”. The new question format states: “*Physicians with rural backgrounds may serve for longer periods in rural practice*”.

Finally the panel recommended adding two more questions at the end of the questionnaire asking physicians about the most positive and negating aspects of their current locations. Reviewers argued that responses of these two questions would be given a priority when trying to take corrective actions.

4.8.3.4: Modifying the questionnaire based on feedback from the reviewer panel

Based on the feedback from the reviewer panel, the instrument was revised and modified. In general, the panel reviewers accepted the survey and the changes they made to the questionnaire were minimal. Almost all comments suggested by the panel about the instrument were accepted and incorporated into the revised questionnaire.

4.8.3.5: Validity of the questionnaire

An important criterion for evaluating a quantitative instrument is its validity. Validity is the degree to which an instrument measures what it is intended to measure (Carmines & Zeller, 1979; Polit & Beck, 2004). The instrument cannot attain validity if it is inconsistent or inaccurate. Validity for the instrument in this study was tested using two different types of validity measurement. These were face validity and content validity.

4.8.3.5.1: Face Validity

Face validity refers to whether the instrument measures the appropriate construct (Polit & Beck, 2004, p. 423). Face validity refers to the appearance of the questionnaire, in terms of whether it looks professional or is poorly constructed (Del Greco, Walop, & McCarthy, 1987). Although face validity is not considered primary evidence for an instrument’s validity, it is helpful for an instrument to have face validity. Face validity was assessed by consulting with the research statistician who reviewed the draft questionnaire before was sent to the panel for review.

4.8.3.5.2: Content Validity

Content validity concerns the degree to which an instrument has an appropriate sample of items for the construct being measured (Polit & Beck, 2004). Content validity is useful for researchers designing a new instrument. Researchers designing a new instrument begin with a thorough conceptualization of the construct so the instrument can capture the entire content domain. Such a conceptualization might come from rich first-hand knowledge, an extensive literature review, or findings from a qualitative analysis. An instrument's content validity is based on judgment (Polit & Beck, 2004).

Applying part of the research on content validity, the panel reviewers were asked whether the questions were vague, ambiguous, difficult to understand, or had contradictions. The reviewers all agreed that the sections were appropriate, concise and important. Moreover, all reviewers reported that the questions covered almost all domains that may related to intention to leave and the questions within each domain were reported as measuring the same attribute. The reviewers also reported that they fully understood the questions and agreed that as the survey was anonymous as it provided a confidential avenue when answering questions about MoH policies. Therefore, content validity of the instrument was met.

4.8.3.6: Reliability of the questionnaire

Reliability indicates whether the questionnaire performs consistently (Del Greco et al., 1987; Jack & Clarke, 1998). A reliable instrument is one with small errors of measurement, one that shows stability, consistency, and dependability of scores for individuals on the trait, characteristic or behaviour being assessed (Mitchell, 1979). It is essential that the reliability of developing a questionnaire can be demonstrated (Rattray & Jones, 2007). The more reliable the questionnaire the higher the correlation between results. Reliability can be determined by means of a test-retest, internal consistency, inter-rater, and intra-rater consistency (Saunders, 2003).

In this study, reliability of the surveying instrument was determined by using the internal consistency method. Internal consistency involves correlating the responses to each question in the questionnaire with responses to other questions in the questionnaire (Saunders, 2003). After administering the questionnaire used in this

study, the responses to Sections B to K were statistically tested for internal consistency. Reliability was also determined by comparing responses to alternative forms of the same question or group of questions (Wrisley, Marchetti, Kuharsky, & Whitney, 2004). Cronbach's alpha coefficients for all domains were produced and ranged from 0.76 to 0.90. Thus, Cronbach's alpha exceeded the acceptable limit of 0.7 indicating that the items within each domain are consistent in measuring the same attribute.

4.8.3.7: The final questionnaire

A cover letter was attached to the final questionnaire explained the reasons for the survey (Jankowicz, 2005). The cover letter which accompanied the questionnaire used in this study is provided in Appendix (D). The items in the final questionnaire were expected were sensitively worded so that participants felt comfortable in answering all the questions. To enable rapid completion of the questionnaire and increase the return rate, most of the answers took the form of simple ticking or multiple choices. Moreover, the items were brief and to the point and arranged in a sequence so that the respondents remain interested throughout the process of filling the questionnaire. It is reported in the literature that the layout of the questionnaire should be attractive to encourage the respondent to complete it, the questionnaire should not be too long. The best way of obtaining optimum responses is to keep both the visual appearance of the questionnaire and the wording of each question simple (Saunders, 2003).

The questionnaire was developed in English as English is the official language of study at all medical colleges in Jordan and the language of all communications within the Jordanian health system. All physicians in Jordan can easily read and understand English. This was tested by the panel reviewers. The final questionnaire consisted of 98 items over 9 pages (See Appendix G). These included Likert-scale items, multiple choice items, and questions require short qualitative or yes/no answers. A questionnaire cover letter of two pages was presented in Arabic as advised by the reviewer selected from the focus group of general population. Two more pages comprised the participant information sheet in English bringing the total number of pages to 13. To allow respondents to expand their answers and provide

more in-depth responses, one open ended question was included at the end of the questionnaire (Rattray & Jones, 2007).

4.8.4: Phase Four: Distribution of the questionnaire

4.8.4.1: Permission to distribute the questionnaire

An official letter was sent to the Minister of Health in Jordan asking for approval to distribute the questionnaires to rural physicians employed by the MoH in Jordan (See Appendix E). The Minister referred the application along with the questionnaire to the Ethical Committee of Scientific research in the Ministry. The committee has approved conducting the study and distributing the questionnaires (See Appendix B).

4.8.4.2: Sampling and setting

The study population was the total population of physicians working in Jordanian rural areas. As per the latest census in 2009, 1092 physicians are working in rural areas (Jordanian Ministry of Health, 2009). Participants had to meet the following inclusion criteria to be eligible for participation in the study:

- (1) be a Jordanian citizen
- (2) employed as a physician
- (3) working in governmental health sector
- (4) working in a rural area for a minimum of 6 months.

Work addresses, mobile phone numbers and emails of physicians practicing in rural areas were obtained from the Health Directorates. The questionnaire, information sheet and the consent form were addressed by a pre-paid envelop and sent to 100 physicians who met the inclusion criteria at their work addresses as an attempt to evaluate the distribution process. Unfortunately, the response rate was very low (10%). When the researcher investigated the causes behind low return rates it was found that either mobile phone number had changed or the physician had moved to another area. Moreover, many of the given email addresses were incorrect.

After consultation, it was agreed that the process of distributing the questionnaire should be changed and that the best way of getting the maximum return rate was to distribute the questionnaires personally by the researcher to physicians in their work locations. All participants participated in this research on a voluntary basis and no

incentives were offered. The information sheet indicated that the return of a completed questionnaire would be interpreted as consent in cases where participants did not want to complete the consent form and remain completely anonymous. The information sheet and consent form are presented in Appendix (F).

The questionnaire was distributed to the entire target population who were reachable. This non-randomized quantitative sampling is considered to be a purposeful sampling strategy. Purposeful sampling is appropriate approach when the purpose of the quantitative segment of a study is to seek merging and corroboration with the results from a qualitative segment of the study (Teddlie & Tashakkori, 2009). Additionally, Creswell and Clark (2007) indicated use of a large quantitative sample from the same population as the smaller qualitative sample as a method for minimizing threats to validity of mixed methods research (Creswell & Clark, 2007). Non-randomized sampling was selected as a measure to increase the number of responses in this study in rural Jordan.

Several factors improve response rates to survey (Gay, and Airasian, 2009). These included notifying respondents before sending the survey, including a cover letter and an easy return method, setting a specific deadline, sending a follow-up reminder, and limiting the overall survey length. The researcher had also mentioned the estimated time of filling the questionnaire (about 30 minutes) in the cover letter. Based on these recommendations, the research study began with a pre-notification to the respondents.

Gay et al (2009) indicated the importance of allowing participants adequate time frame to respond. They indicated 2 to 3 weeks as being appropriate, as longer time frames could result in procrastination. Based on this recommendation, a time limit of two weeks was set for physicians to return the questionnaires and correct mobile phone numbers or emails were obtained from the physician himself at the time of handling the questionnaire based on his/her preference. In an effort to assure optimal response, follow-up email or phone call reminders were sent two days before the deadline. In total, the questionnaire was distributed to 853 physicians and 416 physicians completed the questionnaire indicating a response rate of 48.7%.

4.8.4.3: Analysis of quantitative data

Preparation and processing of the quantitative data included transfer of questionnaire responses into a spread sheet where each response was given a numerical value. Then, the survey data were managed using the Statistical Package of Social Sciences (SPSS version 19). The descriptive statistics of all items were examined in order to establish their normality. Means and percentages were used to describe data.

Univariate analysis was performed to test the association between intention to leave and socio-demographic, work-related, and other participants' characteristics using Pearson Chi-square test. All possible studied predictors of intention to leave were tested in the univariate analysis. Multivariate analyses were then performed using multiple binary logistic regression analysis to determine the factors associated with intention to leave (dependent variable). Multivariate analysis involves measurement and analysis of more than one variable simultaneously with other variables (Johnson & Wichern, 2002).

The variables that were found statistically significant in the univariate analysis were examined in the multivariate analysis in separate models according to the type of independent variables. Specifically, these factors included some socio-demographic characteristics (age, gender, place of growing up, and number of children), work-related characteristics (method of appointment to worksite, work load, experience at current work site, work pressure, training place, and availability of treatment facilities and options), and local/community factors which included transportation factors, amenities, job opportunities for spouse, and factors related to interactions with community members at work locations. In the multivariate analysis, variables found statistically insignificant were removed from the model using the backward stepwise procedures. A p-value of less than 0.05 was considered statistically significant.

Congruent with the aim and objectives of the study, variables of interest in the quantitative analysis were intention to leave rural practice and its associated personal, organizational, work-related, and socio-cultural factors, and the extent to which each of these factors impacted on intention to leave. For example, by calculating the Odds Ratio (OR), it was expected from the analysis to provide information about the likelihood of intention to leave given that the participant is a

single male or a married female. Moreover, it was expected from the analysis to reveal information about percentages of physicians who have intentions to leave according to their work characteristics or transportation related factors.

4.9: Chapter Summary

This chapter has presented a rationale for the use of specific methodological approaches chosen to address these objectives. It presented also a detailed description of each phase of the thesis including ethical approval to conduct the study, sampling technique of focus groups, method of handling qualitative data and methods of analysis. This chapter has also detailed the construction of the questionnaire and discussed issues relating to validity, reliability, and distribution of the questionnaire including the process of reviewing the questionnaire by panel reviewers. Data analysis and ethical considerations were also presented in the chapter. The next chapter presents the results of the qualitative data.

Chapter Five: Qualitative Data

5.1: Introduction

The chapter presents the findings of the four focus group discussions by presenting the key themes drawn from the analysis and giving exemplar quotations for the themes and sub-themes. This chapter begins by a description of the focus group participants' demographic characteristics.

The qualitative analysis was a process of categorizing the data and searching for meaning through the emergence of themes. The information emerging from the discussions were categorized to themes thought to be influencing rural turnover of physicians. Factors associated with turnover were found to be complex and correlated to personal, organizational, and socio-cultural dimensions. The findings of this phase also informed the development of the rating scale instrument used in the quantitative phase.

5.2: Focus Group Participants

As mentioned in the Methods chapter, there were four focus group discussions that were conducted in January 2012 – among currently posted physicians, previously posted physicians, health directors, and members of the community. Each group had 5 participants. A summary of the demographic characteristics of the focus groups is presented in Table 4 below.

Table 4. Focus group participants' characteristics

Variable	Currently posted rural physicians	Previously posted rural physicians	Health directors	General population	Total
Gender					
Male	5	2	5	5	17
Female	0	3	0	0	3
Age group/year					
26-34	4	3	0	1	8
35-43	1	2	0	2	5
44-52	0	0	4	1	5
≥ 53	0	0	1	1	2
Experience / year					
1-5	5	3	0	N/A*	8
6-10	0	1	0	N/A	1
≥ 11	0	1	5	N/A	6
Education					
Diploma	0	0	0	1	1
Bachelor	4	3	2	2	11
Master	1	2	3	2	8
Total	5	5	5	5	20

* Not Applicable. The experience variable was not applicable to general population group.

As noted in the above table, each group consisted of five participants. Male participants dominated with a majority of participants 85% (17) being males. With regards to their age, (65%) 13 participants were in the age group 26 years to 43 years revealing a remarkable young and middle aged population among participants; however, only two participants were ≥ 53 years. Experience of all health directors was ≥ 11 years compared to only one participant in the other three groups who had such experience. With regards to education, all participants in the four focus groups had bachelor or master degree except for one who had a diploma.

5.3: Key Themes Obtained from the Focus Groups

Themes and sub-themes, associated with turnover behaviour of Jordanian rural physicians, emerged through the structured and organized steps of analysis which have been detailed in the Methods chapter. The themes presented describe the main factors the participants viewed as being influential on the decisions of physicians to leave when working in a rural or remote area. The themes are presented separately,

complemented by quotes from the participants. The names used in the quotes were pseudonyms.

As the first study investigating the problem in Jordan, participants considered themselves pioneers in their attempt of making the change. The following comment which was given by a currently working rural physician is an example of comments made by participants:

I feel proud to be one of the participants in this unique research, and each participant should also be. I hope that change starts from this point (Shaker: A current rural physician).

The findings indicated that the major reasons for turnover were poor financial incentives, poor rural infrastructure and lack of general services, lack of opportunities for professional development, socio-cultural characteristics of the rural communities, and the impact of the general policies of MoH on turnover. Each one of these major themes will now be presented in detail.

5.3.1: Poor rural infrastructure

Participants in this study emphasized the importance of rural infrastructure on decisions of physicians to stay in or leave rural practice. Infrastructure refers to the services and facilities necessary for a system to function or the set of interconnected services and aspects that provide frame supporting an intact structure of development (Fulmer, 2009). Participants in this study identified lack of general services, poor transportation, and lack of opportunities for spouses as crucial elements of infrastructure influencing turnover. This theme was expanded through three sub themes including: Lack of general services, poor transportation, and lack of opportunities for spousal job.

5.3.1.1: Availability of general services in rural areas

As most of the participants had moved from an urban area, they needed to adjust to a diminished range of general facilities and cope with a new situation. Many of the participants did not have a wide range of general facilities to choose from in terms of private schools, cafes, restaurants, theatres, shopping centres, the availability of internet connections, and recreational facilities.

The previously posted rural physicians group reported the need for private schools in rural areas as an important requirement for their children. The government schools in Jordan especially in the rural areas are not of a good quality while there are very few if any good private schools in such areas, unlike urban areas which are well covered by private schools. In many rural areas, there is only one school, and that is a government school. A female physician who no longer worked in the rural area stated that:

“There are no private schools which offer good quality education for my children [Researcher: So] So, I chose the future of my children and I have decided to leave” (Raeda: A previous female rural physician).

Moreover, a member of the focus group representing the rural community emphasised the importance of availability of shopping centres, play parks and recreational facilities. He reported:

“Play parks, shopping centres, and recreational facilities are important for the physician and his family [Researcher: Could you explain more]. To nurture my children in good way, they need to practice their hobby which in turn improves their physical and psychosocial abilities... I need to ensure this, so I feel that the best way is to live in an urban area where all these facilities are existent” (Saleh: A rural community member).

The previous view is supported by some participants who described life in the city as providing a better “quality of life” due to the better availability of services. A currently posted rural physician enjoyed living in the city where he could:

“Walk out the front door to get the bus, which can take me into the city where I can go to watch movies... go shopping to a large number of shops...then I can as easily take the bus home” (Ali: A current rural physician).

Another current rural physician highlighted the importance of internet connections in rural areas as an important consideration:

“This time is the era of internet and speed, internet is very important in my professional and social life”. A previously posted rural physician added: “Oh... do not remind me with those days (previous job)....I was completely isolated from the outside world [Researcher: How?] Internet is a huge library

contains not only books but also anything you want, telephone network, purchasing, chatting with friends, reading and playing medium, as well as, current events, information about almost any subject is available in depth and up to date. It is open 24 hours a day” (Mohannad: A current rural physician).

In summary, lack of general services and facilities in Jordanian rural areas was elicited by many participants to be a key factor affecting decisions to practice in rural areas.

5.3.1.2: Lack of opportunities for spouse career

Some participants reported lack of opportunity and jobs for their partners in rural areas as an important issue related to turnover. They mentioned that when the physician’s spouse gets a job in a rural area, the possibility of turnover decreases as it will be more difficult for the physician and the spouse to get two new job opportunities for both of them in another place at the same time. A previously posted rural physician has reported:

“A friend of mine is living in (rural area) since 7 years as he got a job there for his wife. I think if his wife was not employed there he would never have stayed there for such a long period” (Amal: A previous female rural physician).

However, it is difficult to get jobs in rural areas for both spouses due to limited opportunities as there are usually no hospitals, banks, factories, or universities in rural areas. Thus, availability of job opportunities for spouses can impact the length of stay of physicians in remote areas.

5.3.1.3: Inadequate transport services

Jordan does not have an organized transport system. There are no trains, only buses, taxis and vans for public transport, with some places having poor access to such transport. While many people use their own cars, petrol is very expensive relative to incomes. As a result, participants in this study highlighted the importance of public transportation on turnover issue. This sub theme was highlighted by all groups as having a direct influence on turnover from rural areas. It has been stated that *“Using poor transportation to and from rural areas is time consuming and wastes my efforts” (Ali: A current rural physician).*

This issue becomes more important when participants live far away from their work. Public buses, when available in rural areas, usually start out on their trip only when the bus is full regardless of any timetable. Moreover, in most rural areas, trips to the city after working hours are not available. In urgent situations, personal vehicles are used as taxis. A member from the general community group has said:

“When I plan to go to (the city) I usually feel stressed from a day before and a one day due to the sufferings from bad transportation.... the problem is the time you have to wait for the bus to be full either from here to the city or from the city back to here which wastes my time and efforts” (Ibrahim: A rural community member).

Another aspect highlighted by previous physicians was the costs of travelling to and from rural areas: *The farther away one is from their job, the more costly is daily transport. As you know, petrol is expensive compared to my income which adds extra burden on our expenses” (Mustafa: A previous rural physician).*

Another crucially important factor leading to turnover is the sense of isolation that most physicians experience in rural areas due to far distance and poor transportation, as they are away from their urban-based families who they miss on a daily basis. A member of the rural community said:

“I think some physicians will refuse rural employment because of the distance. I know a physician who works at the health center in our village and he lives in (urban area) which is 90 km from his work, so (imagine) at what time this physician leaves his home in the morning and at what time he returns. Do you think this man (the physician) will have the time to sit down with his family?” (Ibrahim: A rural community member).

The health directors reiterated the influence of far distance and transport, with one saying:

“Because I have a car I have no problem with transportation. But really I do not know what would I have done if I was working in (rural place) and did not have a car? I would not be able to catch up with my children” (A health director: Irbid governorate).

The time taken up with lengthy trips often detracted from time that could have been spent in professional development activities such as reading and training, as noted by one of the health directors:

“As physicians lack the time with travelling, they will not have enough time for reading and learning to strengthen their knowledge and skills necessary for their professional growth” (Health director: Ma’an governorate).

In conclusion, the geographic isolation or distance of rural postings has evoked several problems for rural physicians of which social isolation, increased financial costs, and time wasted which could have been used for more productive activities related to professional development.

5.3.2: Remuneration and wages

Remuneration and wages was the second major theme identified by participants in the focus groups. This issue came up in different sub-themes such as salaries, new job opportunities, and additional incentives for rural employment. All groups agreed that salary and financial incentives were both associated with organizational and professional commitments necessary for staying in or leaving any work place

5.3.2.1: Salaries

Participants in all focus groups agreed that salaries of physicians in the governmental sector were low and unsatisfactory. The following quote is shared by one of the currently posted rural physicians stating that rural teachers in Jordan are given special rural financial allowances.

“I’m not satisfied with my current salary compared to my efforts being done, and I think my job is as important as a teacher if not even more. My point is that the government gives teachers in rural areas a higher rate of special rural allowance than that given to us” (Shaker: A current rural physician).

Referring to the same issue, the rural community group also reported the problem of low salaries of government physicians as shown in the following quote: *“When a physician gets a better job with a higher salary, I think he will definitely leave his posting”*. A previously posted female rural physician reported that: *“If you are*

satisfied with your salary and incentives, you will then start thinking of commitment”.

Health directors also agreed that poor rural services and low salaries of physicians in the public sector resulted in frequent turnover. The health directors group reported that salaries of governmental physicians are low, and when they get better salaries either in the private hospitals or overseas they leave their current practice locations.

“When a physician gets an opportunity either at national or international levels, he will absolutely leave his location... I think most physicians and other professionals look for better job environment and most importantly, the salary” (A health director: Karak governorate).

The physicians’ responses showed a strong relationship between their salaries and their intentions to work in rural areas.

5.3.2.2: Special incentives for rural employment

Participants in the focus groups defined the incentives as the additional money or any other extra benefits might be given for those who work in rural areas. All groups valued the importance of additional financial incentives of rural practice such as allowances for rural employment and housing allowance. A member from the health directors group stated:

“Poor incentives of physicians in rural areas is an encouraging factor of turnover....why I have to serve in this area for nothing while I can serve in better place for the same amount of money” (A health director: Mafrag governorate).

Moreover, a participant from the general community group mentioned:

“If the government pays more money for rural physicians in form of incentives, this would be an advantage that motivates competition between physicians to get rural postings” (Omar: A rural community member).

Moreover, offering a car exempt from tax and customs duties to physicians was highlighted by a participant of the general community group. He thought of offering a tax free car for physicians in rural areas like the army officers. In fact, the tax and

customs duties in Jordan are high, especially when buying a car. The government offers a tax free car to army officers at a certain rank and pays them a monthly stipend for petrol. The participant said:

“I suggest offering a tax free car for rural physicians like army officers under the condition of serving in rural areas for at least five years” (Ahmad: A rural community member).

Participants in the focus groups stressed the importance of special allowances for rural employment such as providing housing for physicians and their families:

“One of the most important factors of settlement of rural physicians is to be near their families and I think that the role of physicians is much more important than mosque imams” (Sulaiman: A current rural physician).

This response referred to family housing provided by the government for imams in most areas in the country. To conclude, financial incentives and allowances in forms of extra money for rural employment, tax free car, and suitable housing were all positively correlated with physicians’ reported intentions to remain in rural postings.

5.3.3: Socio-cultural characteristics of Jordanian community

The third theme that emerged from the discussions of focus groups was the impact of socio-cultural characteristics. In this study, participants reported that socio-cultural factors played an important role in the turnover of rural physicians in Jordan. Socio-cultural characteristics identified in the focus group discussions could be further categorized into (1) religious factors, (2) public image of rural physicians, and (3) level of education of rural communities. Each of these sub-themes will now be presented and supported by participant quotes.

5.3.3.1: Religious factors

Islam is the main religion of Jordanian population. It affects all aspects of Muslims’ life, and Mohammad the final messenger showed Muslims how to live according to Islam rules. Despite the fact that Islam maintains equity between males and females it sets strict rules on some activities of females’ lives (Badawi, 1996). For example, it is not allowed for females to travel alone for long distances or to sleep outside the

home unless for work purposes and under strict regulations. Mixing between the genders is not allowed, except with very close relatives.

A previously posted rural female physician has reported her experience and said:

“My husband kept insisting on me to leave (rural location), I think because both of us are committed to the Islamic instructions. As you know it is prohibited for me to travel alone every day for long distance without my husband being with me. In fact, I felt comfortable there because it was a small village....no stress; you are the manager of yourself, and we (health team members) were like a family.....but finally, I had to leave” (Raeda: A previous female rural physician).

Even though the female physician choose to travel daily to the rural area, she may suffer from the consequences of poor transportation and be back late to home especially in winter time as it is socially unacceptable to be alone while travelling in the early morning or late in the night. A member of the general community group reported:

“I think that poor transportation in rural areas limits the presence of female physicians in these areas because it is risky to let our wives and daughters travel alone for long distances or during night time” (Saleh: A rural community member).

Another cultural proscription was that among most Jordanian families, especially those in the traditionally conservative rural areas, female members could not sleep outside their homes on their own unless accompanied by a close male family member. It has been stated that:

“I left rural practice because of the family pressure that I faced. They were worried and afraid about me as it is, from a religious view, unacceptable for a young girl to sleep outside her home without being accompanied by one of her close relatives such as husband, father or brother” (Abed: A previous rural physician).

The focus group discussions revealed the socio-cultural restrictions on female physicians working in rural areas.

5.3.3.2: Public image of rural physicians

In Jordan, there is a popular perception that physicians working in primary health care centres in rural areas are not as qualified as their counterparts in urban areas or large hospitals. In fact, this view may have some validity as the MoH conducts annual board exams for physicians enrolled in residency programs, and those who failing the exams in two consecutive years are employed in primary health care centres in rural areas as they were still general practitioners (Jordan Medical Association, 2011). This image was supported by the general community group stating that:

“In my opinion, at my place I have never seen a skilled physician since 8 years when x (name of previous physician) left our health care centre” (Ahmad: A rural community member).

This public perception was also echoed by a previously posted rural physician: *“People trust physicians in hospitals more than physicians in small rural health centers” (Mustafa: A previous rural physician).*

He argued that this community view has detrimental effects for both the rural physician and the community. When the trust relationship between physician and community is diminished, it would become less likely for community members to comply with the treatment prescribed by the physician, which can lead to adverse health outcomes. On the other hand, physicians may feel discouraged and demotivated in serving poorly compliant patients in the community. The above participant stated that:

“if patients do not follow my treatment plan, I would feel that my efforts are useless in my place” (Mustafa: A previously posted rural physician). Because of the generally low trust placed in rural physicians, some patients may seek treatment elsewhere and ask for referrals more frequently. *“I prefer to receive treatment and to be referred to large hospitals” (Ahmad: A rural community member).*

Patient dissatisfaction with service may result also from the often heavy workload in rural health centres, which leads to a decreased consultation time with each patient. On the other hand, referrals may affect the experience of physicians. The more the

number of referrals, the less the experience they acquire and the opportunity to hone their skills. As a result, turnover intentions increase.

“Here, the resources are limited and hence the need for referrals is more which means that the chance of improving our knowledge and experience is less” (Sulaiman: A current rural physician).

Due to the low public image of rural physicians, conflicts can arise between physicians and the public which may take the form of verbal abuse, even physical fights. This can lead to a heightened sense of insecurity among some physicians, further encouraging turnover. In this scenario, presence of security personnel is valuable. A previously posted rural physician has emphasized the importance of availability of security personnel to protect health team members. He added: *“Thanks God.....I only now feel safe while at work” (Abed: A previous rural physician).*

He meant that he did not feel safe when he was working in rural areas because many incidents of attacking physicians and other health team members occurred due to absence of security staff in his previous work place. However, he now feels safe as he works in a large hospital where security is available 24 hours. To conclude, the public image of physicians in rural areas can contribute to turnover intentions.

5.3.3.3: Level of education of rural communities

People in rural areas tend to trust traditional ways of treatment over modern medicine. It has been reported that:

“I learnt from my parents that chemical substances may adversely affect my health, so I believe in traditional methods to treat many of my health complains rather than using these substances” (Saleh: A rural community member)

The generally lower levels of education among rural people can lead to poor compliance in some patients with treatment plans – a factor that can lead to physician dissatisfaction. A previous rural physician said:

“Sometimes, patients in rural areas are not cooperative in adherence to our medical ways of treatment. They always prefer traditional treatment ways. This may create an internal feeling of physicians that their treatment and guidance

are useless, which in turn encourages turnover intentions” (Raeda: A previous rural physician).

Focus groups have demonstrated the importance of the educational level of patients for treatment understanding and adherence in rural communities. In general, rural people in Jordan tend to be less educated especially among females. Central to this issue, the latest statistics shows that illiteracy in Jordan was 3.7% among males and 10.8 among females, however, most of the illiterate people were found in rural areas (Jordanian Ministry of Education, 2010). In summary, socio-cultural characteristics of Jordanian community influence turnover of physicians from rural areas.

5.3.4: Lack of resources and work load

Participants in this study defined lack of resources as the limited availability of resources needed for the success of offering quality health care services in terms of both physical and workforce factors. They also viewed work load as a crucial factor in rural practice. To a certain extent, some participants viewed lack of resources as a positive factor in that it forced the doctor to be more independent and self-reliant and to be involved in a much wider range of work than they would have had the opportunity in an urban setting. However, others viewed the lack of resources as limiting the way physicians can practice in rural areas. Other participants viewed this as negative aspect by reporting that ‘the workload’ would be very heavy on physicians leading to job dissatisfaction and then turnover occurs. This theme could be further categorised into four sub themes including: lack of medicines and diagnostic options, lack of health team members, lack of experience of health team members, and lack of amenities.

5.3.4.1: Lack of medicines and diagnostic options

The lack of equipment in the rural health care settings, for which patients often have to be referred to more well-equipped institutions, can affect a physician’s work experience leading to job dissatisfaction and turnover. A previously posted rural physician has reported the effect of the same theme in different way. She reported that:

“Due to lack of diagnostic and treatment options in rural practice, physicians start to feel that patients in these areas do not have complete accessibility to

health care services compared to patients in larger cities and service offered at hospitals. Physicians start feeling sympathy of their patients and resultingly increase their referrals of patients to hospitals, which in turn causes stress to physicians and at the last leads to turnover” (Raeda: A previous female rural physician).

A currently posted rural physician has reported lack of medications in rural health care centres as an important reason for his job dissatisfaction. He argued that this problem can affect both physicians and patients. Lack of medications can cause patient dissatisfaction, and added to the low educational levels of rural community people, conflicts occur with different health team members including physicians. With recurrent conflicts, physicians start feeling stressed, and then start thinking of turnover. A member from the currently posted rural physicians group stated:

“When you know the medicine by which you treat the patient and the health center lacks this medicine, you will feel much stressed. In turn, when the patients do not receive proper treatment they will feel stressed also and dissatisfied and will not come back” (Mohannad: A current rural physician).

In general, participants emphasized the importance of the availability of resources needed to offer quality of care in rural areas and it seems that rural physicians’ decisions about their practice locations are significantly affected by the quality of health services they can provide in these areas.

5.3.4.2: Lack of health team members

In Jordan there is a scarcity in health team members who work in rural areas such as registered nurses, laboratory technicians, and pharmacists (Jordanian Ministry of Health, 2010). A currently posted rural physician has reported the importance of adequate numbers of health team members on the quality of health services and turnover process.

“There is a severe lack of health team members in my area. For example, I’m alone in the health center and I treat hundreds of patients every day and there is only one practical nurse and a secretary who doubles as an accountant at the same time... and they are talking about quality (laughter)” (Ali: A current rural physician).

The focus group discussions reiterated the scarcity of health workers in rural areas, who are also limited in their experience. Participants reported that the inexperience of other health team members in rural areas was one of the stressors that lead to turnover. A member of the rural community group viewed this relationship as follows:

“I think skills and experience of other health team members in hospitals are much better than those working in rural areas, this may lead to some delays or some errors which promotes patient dissatisfaction, and then conflicts occur. In the end, the physician is responsible for any inconvenience” (Ibrahim: A rural community member).

Regardless of the aforementioned view, the increased number of patients will compromise the quality of care provided to patients. In conclusion, the absence or shortage of other health professionals was often elicited by physicians who had left rural practice as one of the reasons they left, or was viewed as an ongoing source of stress, and frustration by physicians currently in rural practice. Thus, this appears to be a major determinant of the level of satisfaction of physicians with their rural medicine experience, thereby influencing decision making of staying or leaving rural locations.

5.3.4.3: Lack of amenities

The last sub-theme under the theme of resources was lack of amenities. The lack of a kitchen for meals and a clean room where physicians could rest and sleep was often quoted by physicians currently posted in rural health centres. They remarked:

“I have visited some of my friends (physicians) in hospitals.....There are clean W.Cs, dining room, clean showers..... (Laughing), believe me sometimes I do not use the W.C until I arrive home” (Shaker: A current rural physician).

It seems from the above quote that, to rural physicians, availability of modern and clean amenities at work sites plays an important role in taking decisions related to staying in or leaving their work places, especially when they start making comparisons relating to work site conditions with their counterparts in large hospitals.

5.3.4.4: Work load

Work load can lead to an increased level of stress on physicians. A currently posted rural physician remarked:

“Sometimes I don’t have the time to write the patient’s name on the prescription. So, I usually ask the clerk in the health center to fill in the needed demographic information of all patients before they get in to the examination room” (Shaker: A current rural physician).

A previously posted rural physician reported that workload was one of the significant stressors that led him to leave rural practice. He viewed the issue in different way. He has reported that work load leads to decrease time of treating individual patients which leads to patient dissatisfaction and increase possibility of conflicts with physicians. He has reported also that conflict with team members made him feel insecure and caused him stress. Therefore, he was waiting for the first opportunity to leave rural practice. A health director reported the same theme. His response is shown in the following quote:

“One of the physicians in my area reported that he treats around two hundred cases every day. I think if he says only hello to each one of the 200 patients he will be busy for the whole day and this makes him stressed” (A health director: Irbid governorate).

However, a member from the rural community group has reported that heavy workload is beneficial to physicians. He argues that as most physicians in rural areas are new graduates, they get better experience when they treat larger number of patients. In fact, a currently posted rural physician has responded to this opinion. The physician said:

“That is not true because I do agree with this view that we treat large number of cases but almost most cases are simple and repetitive... When there is a complicated case we refer it to hospitals....There is nothing new to learn now in this area...It is routine” (Mustafa: A current rural physician).

Overall, lack of resources and workload were viewed to be associated with turnover intentions. However, these factors can be impacted by organizational policies. The

effect of policies in the organizations on turnover intentions is further discussed in the following section.

5.3.5: Administrative policies of MoH

Discussions in the focus groups revealed an association between nature of management and policies in the organizations and satisfaction levels of the employees. Policies formulated by the MoH are intended to support health team members in offering the best quality of care they can provide. However, some participants reported that some of these policies in rural areas encourage turnover from these areas. This theme could be further categorized into: decentralization, lack of opportunities for professional growth, and rural background of physicians in rural areas.

5.3.5.1: Decentralization

A decentralized organization is one in which decision making is not confined to a few top executives but rather is distributed throughout the organization, with managers at various levels making key operating decisions relating to their scope of responsibility (Mills, 2006). Decentralization is a matter of degree, since all organizations are decentralized to some extent out of necessity. A strongly decentralized organization is one in which even the lowest-level managers and employees are capable of making decisions (Prud'Homme, 1995). Without such experience, they would be poorly prepared to make decisions when they are promoted into higher level positions. A currently posted rural physician has reported that one of the most advantageous features of rural practice is the independence they have in making decisions. He opined that this helps promote the self-confidence of physicians and lead to a positive experience about their roles.

However, a member from the rural community group commented that decentralization was good for physicians but not for patients. He thought that independence was good for physicians as they would be less stressed from interventions and monitoring by managers and directors. However, this lack of monitoring can adversely affect the quality of health services offered to people. He stated: *“I feel that rural physicians are fortunate as they are free to take decisions and nobody monitors them” (Saleh: A rural community member).*

On the other hand, one of the health directors viewed decentralization as a disadvantage and a factor in turnover in certain situations. According to him, some physicians have limited experience and lack the knowledge and skill to take decisions independently or perform certain procedures as they are new graduates. He explained:

“In such scenarios, physicians feel stressed as they are not capable of taking decisions and afraid of undertaking medical errors. So, they start looking to move out to hospitals where young medical decisions can be guided by specialists and senior physicians” (A health director: Karak governorate).

In conclusion, the focus group participants viewed decentralization as having both negative and positive impacts on turnover of Jordanian physicians in rural areas.

5.3.5.2: Professional development

Participants in the focus groups emphasized the importance of their professional development in terms of being promoted to specialists. They viewed professional development in terms of training sessions and residency programs. Participants in the current physicians group were asked about the work environment, what they like and dislike about their job location, their prospective plans, and their future intentions of rural practice. The group shared the importance of professional development which is important for their growth as a clinician. According to this group, residency program was a crucial element of their future plans. One of the participants in this group, a head of a primary health care centre, highlighted this importance:

“For me as a physician, I’m now concerned with being enrolled in the residency program so that I can be a specialist. It is my dream. I will use all my capabilities to achieve this dream. I think that I will leave my current location as soon as I get the opportunity for joining the residency program (Muhannad: A current rural physician).

This theme was also emphasized by other groups. Previously posted rural physicians have demonstrated the importance of this theme stating that:

“The most important factor in the turnover process for most physicians is professional development to most physicians. Obtaining a specialty degree is

the most important factor that leads to turnover” (Abed: A previous rural physician).

Another member of the same group said: *“In the medical profession, it is considered a failure if I remain a general practitioner.....I will do my best to be a specialist” (Mustafa: A previous rural physician).*

The health directors group also reiterated that professional development was one of the most significant factors for encouraging turnover from rural areas. Participants in the rural community group also appeared to be aware of the value of residency programs for physicians and understanding this need as a right of physicians. One of the major difficulties that physicians in rural areas face is lack of chances to attend educational and training programs which lead to a decrease in their level of skills and chances of promotions. This issue was highlighted by all focus groups. A currently posted rural physician commented:

“I have been working in my current place since 9 months and have not attended any training session....My friends at hospitals have greater chances to learning.....the morning report they attend is enough. As we all know, in the morning report physicians discuss patient cases every day; they exchange their experiences and opinions of treatment plans...they learn from each other” (Sulaiman: A current rural physician).

This problem is aggravated by the fact that the cases in rural areas are often repetitive with little opportunity to gain new knowledge to deal with the new cases. Some participants viewed physicians’ practice in rural areas as being threatened by the repetition of similar cases and routine treatment and daily work activities. A previously posted rural physician considered routine as an inhibiting factor of professional development and an encouraging factor for turnover. He mentioned that: *“Most of the cases in rural practice are monotonous and simple”.*

As a solution to this problem, the rural community group suggested using rotations between rural and urban physicians in the interests of equity and fairness. A member of this group suggested:

“I think there is no fairness between physicians. The MOH has to start rotating physicians between hospitals in the cities and health centers in rural areas for two reasons: First, is to attain equity and fairness of practice in similar circumstances, and second to expand their experience and skills...I think what a physician in the hospital learns in one month needs a year from the rural physician” (Omar: A rural community member).

In conclusion, lack of chances for professional development of rural physicians pertains to turnover from these areas.

5.3.5.3: Rural background

All groups agreed that rural background was a key player in the turnover process. A physician with a rural background was more likely to serve in rural areas than one with no such background or experience. Participants reported that physicians with rural background were better able to understand rural communities and adapt to different rural cultures and norms. One currently posted rural physician went so far as to say: *“I think rural exposure of medical students during their study is the critical element for solving turnover problem”.*

Participants also discussed about the relatively low numbers of students with rural backgrounds who gain admission to medical schools in Jordan. A participant of the rural community group suggested that the government could encourage rural students to study medicine by offering special scholarships for rural students, and with lower overall averages in the high school of rural students to be enrolled in medical colleges compared to urban students. He reported:

“I think that if the number of graduating physicians with rural background increases rural communities would not suffer from this phenomenon. The responsibility lies with the government [Researcher: How?] by reserving some seats at medical schools for rural students and by offering scholarships to them either within the country or overseas” (Omar: A rural community member).

Themes elicited by the participants in the discussions included: poor infrastructure of rural areas, inadequate financial wages, socio-cultural characteristics of rural

communities, lack of resources in rural practice, and dissatisfaction with the policies of the MoH in Jordanian rural practice.

5.4: Summary of the Chapter

This chapter analyzed the qualitative data collected during the qualitative part of the study and presented themes generated from the analysis. The chapter has also provided a range of themes reported in the focus group discussions and believed to affect physicians' decisions about whether to stay in or leave rural practice. Each one of these themes was presented through different sub themes and aspects to these sub themes. Data in the qualitative part of this study was rich and in-depth and helped inform the development of the survey instrument used for the quantitative part and also complemented and validated the results of the quantitative phase. The next chapter describes findings from the quantitative phase of the study.

Chapter Six: Results, Analysis, and Discussion of Quantitative Data

6.1: Introduction

This chapter presents the results from the analysis of the questionnaire survey on socio-demographic characteristics, work characteristics, and factors associated with intention to leave rural practice by Jordanian physicians. It includes the multivariate analysis of factors associated with intention to leave before and after adjustment for confounding variables. Lastly, the chapter concludes with a summary of the findings.

6.2: Results

A total of 853 questionnaires were distributed to rural physicians in Jordan of which 416 (48.7%) were returned. Of these 416 returned questionnaires, 267 (64.2%) responded within the time limit, 93 (22.4%) responded after one reminder and 56 (13.4%) responded after two reminders. Out of the returned questionnaires, 83 (27%) were incomplete and could not be included in the analysis as many questions had not been answered. In addition, 26 (0.08%) questionnaires were excluded because participants didn't meet one or more of the inclusion criteria for participation. The final number of questionnaires included in the analysis was 307 (n=307), with a response rate of 48.7%.

The internal consistency of the questionnaire was tested by means of the Cronbach's alpha coefficients for the domains ranging from sections B to K of the questionnaire. Cronbach's alpha for all domains ranged from 0.76 to 0.90, therefore, confirming the reliability of the instrument. The next section describes the characteristics of the participants.

6.3: Characteristics of the Sample

This section is divided into two main categories: the socio-demographic and work-related characteristics of the sample. Now, these characteristics are presented.

6.3.1: Socio-demographic characteristics of the sample

Socio-demographic characteristics of the sample are shown in Table 5. The following sub-sections go into more details about these characteristics.

6.3.1.1: Gender

As can be seen in table 5, males comprised 81.1% (n=249) of the sample and the remaining 18.9% were females (n=58).

Table 5. Socio-demographic characteristics of Jordanian rural physicians (n=307)

Characteristic	Number	Percent
Gender		
Male	249	(81.1)
Female	58	(18.9)
Age/years		
≤ 30	116	(37.8)
31-40	86	(28.0)
> 40	105	(34.2)
Marital status		
Single	121	(39.4)
Married	186	(60.6)
Number of children of married participants		
≤ 3	113	(60.8)
> 3	73	(39.2)
Place of growing up		
Rural	222	(72.3)
Urban	85	(27.7)
Work governorate		
Irbid (North)	53	(17.2)
Mafraq (North)	83	(27.0)
Karak (South)	66	(21.5)
Tafilah (South)	43	(14.0)
Ma'an (South)	52	(17.0)
Aqaba (South)	10	(3.3)

6.3.1.2: Age

The mean age was 36.2 years, with a range of 24 to 58 years. Physicians who were \leq 30 years comprised the largest proportion among the study population (37.8%, n=116) compared to 28% (n=86) and 34.2% (n=105) for those aged 31-40 and those more than 40 years, respectively.

6.3.1.3: Marital Status

A little less than two thirds (60.6%, n=186) were married; single participants comprised the remaining 39.4% (n=121) of participants, reflecting the large proportion (37.8%, n=116) who were 30 years or younger. Number of children of married participants ranged from one to six (mean =3.1), with 39.2% (n=73) having more than 3 children.

Of interest was that 72.3% (n=222) of the respondents had themselves grown up in a rural area. Participants were employed by the Ministry of Health at six out of the total 12 governorates in the country. The six governorates were: Irbid, Mafraq, Karak, Tafilah, Ma'an, and Aqaba, with Mafraq in the North accounting for the largest proportion (27%, n=83) of participants, and Aqaba in the far south the smallest (3.3%, n=10).

6.3.2: Work related characteristics of the sample

Work related characteristics of the participants are presented in Table 6. As shown, more than two thirds (68.1%, n=209) of the physicians had graduated from overseas, and only 31.9% (n=98) had graduated from an institution in Jordan. About half of the participants (51.5%, n=158) received their training in rural areas.

The majority of participants (77.2%, n=237) were appointed to their work places by the MoH and only 22.8% (n=70) selected their work places by themselves. The MoH usually employs its workforce based on the staffing needs of each area, and where possible tries to accommodate the preferences of a staff regarding the area of posting.

The total years of experience after graduation ranged from 6 months to 30 years, with a mean of 9.7 years. The respondents all reported a high workload of patients, with an average of 43.6 patients seen daily (range 5 to 250 patients). On average, they worked 41.8 hours weekly (range 35 to 50 hours).

Table 6. Work related characteristics of Jordanian rural physicians (n=307)

Characteristic	Number	Percent	Mean
Place of training			N/A*
Rural	158	(51.5)	
Urban	149	(48.5)	
Country of graduation			N/A
Jordan	98	(31.9)	
Other	209	(68.1)	
Appointment to worksites			N/A
By MOH	237	(77.2)	
Self-choice	70	(22.8)	
Total experience (years)			9.7
≤ 5	149	(48.5)	
> 5	158	(51.5)	
Experience at current work place			3.3
≤ 1 year	173	(56.4)	
> 1 year	134	(43.6)	
Weekly working hours			41.8
≤ 40 hours	157	(51.1)	
> 40 hours	150	(48.9)	
Daily patient number			43.6
≤30	153	(49.8)	
>30	154	(50.2)	

* Not Applicable. Mean was not applicable to those variables.

As noted in the above table, a high proportion (56.4%, n=173) of the physicians in this study had a year or less experience at their current work places. The period physicians had been working at the current location at the time of the survey ranged from 6 months to 25 years, with a mean of 3.3 years.

6.4: Magnitude of Intention to Leave Rural Practice

The overall percentage of intention to leave rural practice among Jordanian physicians was 29.3% (n=90) as shown in table 10, page 119. As later sections in this chapter will reveal, this rate of intention to leave varied according to a number of socio-demographic, work-related and community characteristics.

6.5: Factors Perceived to be Encouraging Retention of Rural Physicians

The questionnaire included items to elicit the perceived causes which enhance retention of rural physicians in rural practice. For these items, participants were asked to rate their answers by ticking numbers from 1 to 5 where 1 stands for a major positive effect and 5 means a major negative effect with 3 standing for a neutral response (no influence). Mean and standard deviation were documented for each of these factors.

In general, all factors listed in table 7 considered important to rural physicians as means of all factors were less than 2.5. When the mean was closer to the value 1, this denoted that a larger number of participants perceived the importance of the factor. For example, closeness to home and family ($\mu=1.65$, S.D= .66) was found to have a considerable influence on decisions of physicians to practice in rural areas. Factors perceived by participants to facilitate retention are shown in table 7.

**Table 7. Perceived factors that facilitate retention of Jordanian rural physicians
(n=307)**

Factor	Mean*	Std. Deviation
Closeness to home/family	1.65	0.66
Easy transportation	1.66	0.82
Flexibility and scope of practice	2.03	0.78
Absence of on-call responsibilities	2.06	0.77
Supportive, skilled colleagues and staff	1.87	0.89
Good salary and benefits	1.58	0.71
Well organized work environment	1.90	0.95
Have an interest in rural practice prior to medical school	1.73	0.76
Number of working hours/week	1.80	0.70
Professional opportunities	1.81	0.90
Training in similarly sized community	2.04	0.95
Relationships and socialization with patients	2.08	0.72
Realistic expectations by patients	2.11	0.84
Clinical autonomy	2.03	0.79
Variety of medical cases	2.09	0.92
Contact with specialists for patient referrals	1.94	0.84
Access to medical technology	2.05	0.92
Opportunities of continuing education	1.78	0.65
Administrative responsibilities	2.10	0.77
Opportunities for promotion	1.85	0.71
Rural/small town lifestyle	2.43	0.93
Adequate personal time away from work	2.34	0.83
Good quality school systems	2.02	0.90
Access to recreational activities	2.09	0.86
Climate	2.32	0.84
Reasonable cost of living	2.06	0.73
Opportunities for professional relationships	2.25	0.82
Opportunities for social relationships with rural community	2.30	0.76
Spousal influences	2.38	0.85

* Mean scores for items of 5-point Likert scale where 1= major positive effect and 5 = major negative effect

As can be seen in the above table, the most significant result in this section was that related to the effect of good salaries and benefits on the decision of physicians where to practice ($\mu=1.58$, S.D= .71). Easy transportation, having an interest in rural practice prior to medical school, opportunities of continuing education, opportunities for promotion, well organized work environment, contact with specialists for patient referrals, and supportive, skilled colleagues and staff all had a significant influence on decisions of physicians to practice in rural areas. All the aforementioned factors had mean of less than 2. However, other factors (those with mean greater than 2) were perceived to have less influence.

6.6: Factors Associated with Intention to Leave

The major part of the questionnaire dealt with factors thought to be associated with intention to leave rural practice in Jordan and are detailed below. A number of studies have found that the use of “intention to leave” as a predictor of turnover can be effective in predicting both short and long term stayers, and has good generalizability and utility (Lonne & Cheers, 2000; Parasuraman, 1982; Robison & Pillemer, 2007). Chi-square test was used for univariate analysis and binary logistic regression was used for multivariate analysis.

6.6.1: Intention to leave and socio-demographic characteristics

All socio-demographic characteristics, except for two, were significantly associated with intention to leave rural practice in the coming year, as shown in Table (8). These are described in greater detail in the following sub-sections.

6.6.1.1: Age

Physicians aged 30 years or less and those aged 31-40 years had a significantly higher proportion of intention to leave compared to physicians aged more than 40 years. Intention to leave rural practice among the physicians was 39.7% (n=46); 38.4% (n=33), and 10.5% (n=11) among age groups ≤ 30 , 31-40, and >40 years respectively (p value for difference=0.001).

6.6.1.2: Gender

As can be noticed, female physicians were significantly more likely to intend to leave than their male counterparts (51.7% females versus 24.1% males, $p < 0.001$).

Table 8. Intention to leave according to socio-demographic characteristics of Jordanian rural physicians (n=307)

Variable	Intention to leave				Total	p value*
	Have no intent		Have intent			
	n	(%)	n	(%)		
Gender						
Male	189	(75.9)	60	(24.1)	249	0.001
Female	28	(48.3)	30	(51.7)	58	
Age/years						
≤ 30	70	(60.3)	46	(39.7)	116	0.001
31-40	53	(61.6)	33	(38.4)	86	
> 40	94	(89.5)	11	(10.5)	105	
Marital status						
Single	84	(69.4)	37	(30.6)	121	0.695
Married	133	(71.5)	53	(28.5)	186	
Number of children						
≤ 3	60	(56.0)	47	(44.0)	107	0.001
> 3	73	(92.4)	6	(7.6)	79	
Place of growing up						
Rural	169	(76.1)	53	(23.9)	222	0.001
Urban	48	(56.5)	37	(43.5)	85	

* p value calculated using Pearson's chi square (p<0.05 is considered significant)

6.6.1.3: Marital status

Almost similar percentages of intention to leave were found among single and married physicians, 30.6% (n=37) and 28.5% (n=53), respectively. Interestingly, marital status was not found to be statistically significant in intention to leave.

6.6.1.4: Number of children

The number of children a physician had showed an inverse relationship to intention to leave rural practice. Thus, among physicians with 3 or less children, a much higher proportion intended to leave compared to those with more than 3 children (44% (n=47) vs 7.6% (n=6), p< 0.001).

6.6.1.5: Place of growing up

Physicians coming from a rural background were significantly less likely to leave rural practice compared to those with an urban background. 23.9% (n=53) of physicians who grew up in rural areas intended to leave their locations within a year;

however, almost double this proportion (43.5%, n=37) of those who grew up in urban areas intended to leave within the same period (p= 0.001).

6.6.2: Intention to leave and work-related characteristics

A wide range of work-related variables were tested for their association with intention to leave as shown in table 9. These variables are described below.

6.6.2.1: Work load (number of working hours and patients per week)

A significant statistical association was found between intention to leave and weekly working hours (p< 0.001). 41.3% (n=62) of physicians who worked more than 40 hours per week had considered leaving the current workplace within a year compared to 17.8% (n=28) of physicians who worked for 40 hours or less per week. On the other hand, there was no significant association between intention to leave and daily number of patients treated by physicians, although there was a slight difference in the percentages between those who treated ≤ 30 patients per day and those who treated > 30 patients (27.5%, n=42 versus 31.2%, n=48).

6.6.2.2: Total experience at work

With respect to total years of experience of physicians and intention to leave rural practice, results revealed that 34.2% (n=51) of physicians with ≤ 5 years of total experience tend to leave compared to 24.7% (n=39) among those with a total experience more than 5 years. However, this did not reach statistical significance.

6.6.2.3: Experience at current workplace

There was a considerably higher rate of intention to leave among rural physicians with ≤ 1 year of experience at the current work site (38.2%, n=66) compared to only 17.9% (n=24) among those physicians with more than one year of experience within the same work places (p< 0.001).

6.6.2.4: Urban/rural training

Exposure to rural training played an important role in the turnover process. About 22.0% (n=35) of physicians who received training in rural areas during the period of their study intended to leave rural practice compared to about 37% (n=55) among physicians who had trained in urban areas (p= 0.005).

Table 9. Intention to leave according to work characteristics of Jordanian rural physicians (n=307)

Variable	Intention to leave				Total	p value*
	Have no intent		Have intent			
	N	(%)	n	(%)		
Appointment to worksite						
By MOH	157	(66.2)	80	(33.8)	237	0.002
Self-choice	60	(85.7)	10	(14.3)	70	
Total experience/years						
≤ 5	98	(65.8)	51	(34.2)	149	0.066
> 5	119	(75.3)	39	(24.7)	158	
Place of training						
Rural	123	(77.8)	35	(22.2)	158	0.005
Urban	94	(63.1)	55	(36.9)	149	
Experience at current work place						
≤ 1 year	107	(61.8)	66	(38.2)	173	0.001
> 1 year	110	(82.1)	24	(17.9)	134	
Weekly working hours						
≤ 40 hours	129	(82.2)	28	(17.8)	157	0.001
> 40 hours	88	(58.7)	62	(41.3)	150	
Daily patient number						
≤30	111	(72.5)	42	(27.5)	153	0.474
>30	106	(68.8)	48	(31.2)	154	
Country of graduation						
Jordan	64	(65.3)	34	(34.7)	98	0.156
Other	153	(73.2)	56	(26.8)	209	

* p value calculated using Pearson's chi square.

6.6.2.5: Work pressures

With respect to feelings of work pressure, four fifths (80.5%, n=247) of participants found themselves isolated from relatives, colleagues, and friends, and among these, more than a third (36%, n=89) had a statistically significant intention to leave. On the other hand, 19.5% (n=60) of participants did not feel this way, among whom only two participants (3%) intended to leave their work places (p< 0.001). Further, 77.5% (n=238) of participants felt that their job role extended beyond their professional

position description, and among these, 24% (n=57) had an intention to leave ($p < 0.001$). The other two items in this part of the questionnaire stated: “It is difficult for me to take holidays” and “It is difficult for me to get away from my work”, responses to these two items were not statistically significant in relation to intention to leave.

6.6.2.6: Patient mix

More than four fifths (83%, n=255) of participants felt bored by the monotonous and simple nature of the patient case mix they encountered at their current practice in rural areas, with 29.7% (n=76) of them expressing an intention to leave. This can be compared to 17% (n=52) of participants who did not feel bored by the patient case mix, and among these, 22% (n=11) expressed an intention to leave. However, this difference was not statistically significant.

6.6.2.7: Work environment

Intention to leave as per satisfaction at current work environment was significantly associated with referral policy ($p < 0.001$) of patients, manager encouragement of professional development ($p < 0.001$), educational and training opportunities ($p = 0.001$), and availability of satisfactory facilities ($p = 0.002$). However; other factors in this domain were not statistically significant and included the following: daily administrative work, experience level of other health team members, and availability of enough health team members.

6.6.2.8: Availability of treatment facilities and options

Intention to leave was significantly associated with perceived availability of enough treatment options. About two thirds (65%, n=199) of the physicians believed that both rural and urban patients had the same opportunity for treatment options, and among these 11.7% (n=23) expressed an intention to leave. However; among those who thought that their rural patients had poorer access and options for treatment, 36.9% (n=40) expressed an intention to leave ($p = 0.002$).

Additionally, 66% (n=203) of participants expressed disappointment at the lack of diagnostic and treatment options in rural health care centres, 19% (n=58) had no opinion on this, and only 15% (n=46) were satisfied with the availability of diagnostic and treatment options.

6.6.2.9: Country of graduation

A bit over a third (34.7%, n=34) of physicians who graduated from Jordanian medical schools had an intention to leave their locations of work within a year, compared to 26.8% (n=56) of those who graduated from overseas medical schools; however this difference did not reach statistical significance.

6.6.2.10: Opportunities for professional development

Opportunities for professional development and their relationship with intention to leave were ascertained by asking participants about their opportunities for promotion, attending educational and training sessions, study leave, and residency programs in rural areas, and whether these were different for physicians in urban areas.

With respect to opportunities for promotion, 81.1% (n=249) of physicians thought that the availability of these opportunities impacted on their decision to practice in rural areas ($p < 0.001$). An important finding was that about 30% (n=92) of physicians thought that rural physicians had the same opportunity as urban physicians for attending educational and training sessions and among these 19% (n=18) intended to leave. 55.8% (n=120) of the remaining 70% who did not agree with this suggestion expressed an intention to leave their locations within the next year ($p < 0.001$).

With regard to getting study leave, 85.3% (n=262) of physicians found it difficult to secure study leave necessary for professional development, of whom 28.6% (n=75) had intention to leave; however this difference was not statistically significant. Almost 70% (n=215) of physicians thought that initiation of residency programs within rural areas improved the retention rate.

6.6.2.11: Financial incentives

Interestingly, 92.2% (n=283) of participants thought that good salary and benefits had a positive impact on decision of physicians to practice in rural areas and 77.2% (n=237) believed that turnover could be reduced by financial incentives; however, with respect to intention to leave, these associations did not reach statistical significance.

6.6.2.12: Method of appointment to present work post

Physicians who were allocated to their workplaces by the MoH had a significantly higher rate of intention to leave rural practice than those who had the opportunity to choose their workplaces by themselves, with a turnover intention rate of 33.8% (n=80) and 14.3% (n=10) respectively (p= 0.002).

6.6.2.13: Geographic location

Intention to leave rural practice varied between governorates and ranged from 15.7% in Mafraq governorate to 50.0% in Aqaba governorate (p= 0.001). Intention to leave as per governorate of work is shown in table (10) below.

Table 10. Intention to leave according to governorates of Jordanian rural physicians (n=307)

Work governorate	Number of Participants	Intention to leave	
		n	%
Irbid (North)	53	26	(49.1)
Mafraq (North)	83	13	(15.7)
Karak (South)	66	18	(27.3)
Tafilah (South)	43	12	(27.9)
Ma'an (South)	52	16	(30.8)
Aqaba (South)	10	5	(50.0)
Total	307	90	(29.3)

As shown above, Aqaba in the far south and Irbid in the extreme north had the highest percentages of intention to leave among rural physicians, 50% and 49.1% respectively. On the other hand, Mafraq, which is closer to urban centres, tended to retain rural physicians.

6.6.2.14: Job satisfaction

The most significant result in the job satisfaction domain was that related to satisfaction about general administrative policies of the Ministry of Health regarding physicians' current practice locations as shown in table (11).

Table 11. Responses of participants regarding job satisfaction items of Jordanian rural physicians (n=307)

Statement	Agree	Neutral	Disagree
I find real enjoyment in my job	36%	31%	33%
I am often bored with my job	41%	42%	17%
I am fairly well satisfied with my job	25%	47%	28%
I definitely dislike my job	20%	38%	42%
Each day in my job seems like it will never end	25%	47%	28%
Most days I feel enthusiastic about my job	17%	58%	25%
I feel that the major satisfaction in my life comes from my job	16%	57%	27%
I'm satisfied with general administrative policies of the Ministry of Health regarding my current practice	9%	25%	66%

As shown in the above table, about two thirds (66%, n=202) of physicians were dissatisfied with these policies, only 9% (n= 28) were satisfied, and 25% (n=77) were neutral in their responses. Significant proportions of participants in this study reported neutral responses with respect to feeling of enthusiasm about their jobs and whether they felt that major satisfaction in their life came from their jobs (58% and 57% respectively).

6.6.3: Intention to leave and local/community factors

Many local and community-related factors were reported to impact on intention to leave rural practice among physicians. These factors included transportation, amenities, interactions with community members, and job opportunities for spouse. The next sub-sections go into more detail about these factors.

6.6.3.1: Transportation

Transportation characteristics can affect turnover intentions. Both factors in this section were found to be significantly associated with intention to leave, as shown in Table 12.

Table 12. Intention to leave according to transportation characteristics of Jordanian rural physicians (n=307)

Variable	Intention to leave				Total	p value
	Have no intent		Have intent			
	N	(%)	n	(%)		
Daily travelling time						
< 1 hour	115	(79.9)	29	(20.1)	144	0.001
1-2 hours	82	(75.2)	27	(24.8)	109	
> 2 hours	20	(37.0)	34	(63.0)	54	
Distance from work/km						
≤30	117	(79.6)	30	(20.4)	147	0.001
>30	100	(62.5)	60	(37.5)	160	

6.6.3.1.1: Daily commuting time

When daily travelling time to and from work was more than two hours, almost two thirds (63.0%, n=34) of physicians expressed an intention to leave compared to 20.1% (n=29) and 24.8% (n=27) among those who needed less than an hour and those who needed 1-2 hours, respectively (p< 0.001).

6.6.3.1.2 Distance from work

The same trend of significance applied to the distance between home and work. Among physicians living more than 30 km from work, the proportion with intention to leave was almost double than those living less than 30 km (37.5%, n=60 versus 20.4%, n=30 respectively, p= 0.001).

6.6.3.2: Amenities

There was a strong indication in the survey responses that workers wanted access to better services and amenities in rural Jordan. In the amenities section, all factors were important to participants and were significantly associated with intention to leave

except for availability of internet access at their current work places as discussed in the following sub-sections.

6.6.3.2.1 Housing, shopping, and recreational facilities

With regards to availability of general services, a third (33%) of the physicians in areas with limited recreational facilities intended to leave compared to none among physicians who were able to access recreational facilities ($p < 0.001$). Physicians in this study were least satisfied with their access to good quality food suitable housing, and availability of shopping centers. All these factors were found to be significantly associated with intention to leave rural locations.

6.6.3.2.2: Availability of schools

Highlighting the importance of education for their children, 33% of participants who thought that availability of good quality schools was difficult in their areas intended to leave their work places in the coming year ($p = 0.016$).

6.6.3.2.3: Child care services

Availability of child care services was also important to rural physicians with 34% of participants who found it difficult to obtain child care intending to leave within a year, compared to only 12% of those who did not have any difficulty obtaining child care ($p < 0.001$).

6.6.3.3: Job opportunities for spouse

One of the most significant results was regarding the availability of employment for the spouse in rural areas. About 36% of participants whose spouses found it difficult to find employment intended to leave during the next year compared to none among those whose spouses did not experience difficulty in finding employment ($p < 0.001$).

6.6.3.4: Interactions with community members

In this part of the questionnaire, all three items relating to satisfaction with the local community were significantly associated with intention to leave as discussed in the following sub-sections.

6.6.3.4.1: Satisfaction with community interactions

About 54% (n=165) of the total participants were dissatisfied with their interactions with the local community in their work places, and of these, about 40% (n=66) had an intention to leave. However; only about 18% (n=25) of those who were satisfied with their interactions with the community expressed the same intention ($p < 0.001$).

6.6.3.4.2: Patient cooperation and compliance with treatment

The other item in this domain tested the satisfaction level about patients' cooperation and commitment to treatment. In regard to this item, 81% (n=249) of participants were dissatisfied of whom 35% (n=87) expressed an intention to leave their job locations in the next year, compared to only 3% (n=2) of those satisfied with patients' cooperation and commitment to treatment who had the same intentions ($p < 0.001$).

6.6.3.4.3: Educational level of patients

Results revealed that 86% (n=64) of physicians were dissatisfied with the level of education of their patients, and among these, 34% (n=90) expressed an intention to leave, compared to none (0.0%) of those physicians who were satisfied with the level of education of their patients ($p < 0.001$).

6.6.3.4.4: Community attitudes and perceptions towards physicians

This section of the questionnaire evaluated the physicians' perception of community views about rural physicians and physicians in large hospitals. Responses to this question showed that 57% (n=175) of physicians thought that people respected physicians in large hospitals more than rural physicians, 17% (n=52) were neutral and 26% (n=80) thought that this suggestion was incorrect. Among those who thought that people respected physicians in large hospitals more than rural physicians, 35.4% (n=62) expressed an intention to leave ($p < 0.001$).

6.7: Multivariate Analysis

In this study, the multivariate analysis using multiple binary logistic regression analysis was performed to determine the factors associated with intention to leave. The variables that were found statistically significant in the univariate analysis were examined in the multivariate analysis in separate models according to the type of

independent variables. Specifically, these factors included socio-demographic characteristics (age, gender, place of growing up, and number of children), work-related characteristics (method of appointment to worksite, work load, experience at current work site, work pressure, training place, and availability of treatment facilities and options), and local/community factors which included transportation factors, amenities, job opportunities for spouse, and factors related to interactions with community members at work locations.

The final best fitting model included the significant variables only. Adjusted odds ratios and their 95% CI were reported to show the association between the studied independent variables and intention to leave (dependent variable). A p value of less than 0.05 was considered statistically significant.

6.7.1: Intention to leave and socio-demographic and work related factors

In the multivariate analysis, participants' age was significantly associated with intention to leave ($p < 0.001$). Compared to participants whose age was greater than 40 years, the odds ratio of intention to leave for those aged ≤ 30 years and those whose age ranged from 31-40 years were 7.6 (95% CI: 2.56, 22.72) and 13.0 (95% CI: 4.30, 39.39) respectively. This means that physicians whose age ranged between 30 to 41 years had 13 times more likelihood of intention to leave rural practice compared to those physicians older than 40 years, as shown in table 13.

Some socio-demographic characteristics were found to have significant relationship with intention to leave in the univariate analysis, such as number of children. However, in the multivariate analysis, the association between number of children and intention to leave was not found to be statistically significant, after controlling for the confounders.

Table 13. The binary logistic regression analysis of intention to leave as per age, job appointment process, work hours, and daily travelling time of Jordanian rural physicians (n=307)

Variable	OR	95% Conf. Interval		p value
		Lower	Upper	
Age				
≤30 years	7.6	2.56	22.72	0.001
31-40 years	13.0	4.30	39.39	0.001
>40 years	1*			
Appointment process				
MOH	6.6	1.85	23.68	0.004
Self-choice	1*			
Daily travelling time				
<1 hour	1*			
1-2 hours	0.8	0.23	2.59	0.683
>2 hours	5.6	1.63	19.28	0.006
Number of weekly working hours				
≤ 40 hours	1*			
> 40 hours	11.3	3.99	32.12	0.001

* Reference for other categories within each variable.

With respect to the appointment of physicians to rural areas, physicians who were allocated by the MOH had an OR of 6.6 (95% CI: 1.85, 23.68) compared to those who had chosen their locations by themselves (p= 0.004). Physicians who needed more than two hours per day as a travelling time to and from their homes to work locations had an OR of 5.6 (95% CI: 1.63, 19.28) compared to those who need less than one hour daily for the same purpose (p= 0.006). Moreover, an OR of 11.3 (95% CI: 3.99, 32.12) was found for those who worked more than 40 hours per week compared to those who worked ≤ 40 hours per week (p< 0.001).

6.7.2: Intention to leave and satisfaction at current work place

Regarding satisfaction at current work place, the multivariate analysis revealed that work load was the most significant factor related to intention to leave rural practice as shown in Table (14) below.

Table 14. The binary logistic regression analysis of intention to leave as per satisfaction at/near current work place of Jordanian rural physicians (n=307)

Variable	OR	95% Conf. Interval		p value
		Lower	Upper	
Work load	2.2	1.51	3.27	0.001
Referral policy	0.34	0.22	0.52	0.001
Manager encouragement of professional development	1.8	1.38	2.43	0.001
Educational and training opportunities	2.1	1.35	3.36	0.001
Availability of satisfactory facilities	1.7	1.21	2.46	0.002
Good quality food	1.6	1.17	2.19	0.003
Suitable housing	1.7	1.19	2.28	0.002
Shopping centres	1.4	1.01	2.07	0.046
Often feel isolated from relatives/colleagues/friends	0.28	0.19	0.42	0.001
Having difficulty in taking study leave	1.6	1.14	2.20	0.005

The increased level of satisfaction with work load was associated with increased odds of intention to leave rural practice. Each unit of dissatisfaction about work load on the rating scale was associated with increased odds of a factor of 2.2. For example, the difference in OR between those participants who were dissatisfied about the daily work load and those who were very dissatisfied was 2.2. The same applied to other variables in this section.

When physicians were asked about their satisfaction about amenities in the current work place, the availability of good quality food, suitable housing, and availability of shopping canters were all associated with intention to leave rural locations. As can be noted in table 14 above, the OR value reflected the alteration of satisfaction level by one unit on the satisfaction scale. Thus, the OR of 1.7 for those who found it very

easy to obtain suitable housing near work was 1.7 in contrast to those who found it easy.

When physicians' feelings about work pressure were tested, the multivariate analysis revealed that only two items in this section were significantly associated with intention to leave rural areas, as shown in table 14. These two items were feelings of social isolation and taking study leave.

6.7.3: Intention to leave and satisfaction with patient education and compliance

In response to satisfaction level about the community in the current work place, satisfaction of physicians about level of patients' education was found to be significantly associated with intention to leave rural practice ($p < 0.001$). An OR of 3.2 was revealed for each unit of increase in the satisfaction scale about level of patient education (C.I: 2.3, 4.5). This meant that physicians who were very dissatisfied about level of patients' education had a 3.2 times probability of leaving rural areas compared to those who were dissatisfied and a 6.4 times probability of leaving compared to those who gave neutral responses.

6.7.4: Factors associated with intention to leave before adjustment for confounding variables

Before adjustment for confounding variables, factors associated with intention to leave rural practice included many demographic, work related, and organizational factors. These factors are shown below in Table 15. With respect to appointment process for work locations, physicians who were appointed by the MoH to a work location were more than 12 times more likely to have intention to leave compared to those who were able to choose their work locations by themselves.

Table 15. The binary logistic regression analysis of factors associated with intention to leave of Jordanian rural physicians (n=307)

Variable	OR	95% Conf. Interval		p value
		Lower	Upper	
Age ^a				
≤ 30 years	14.3	2.50	81.72	0.003
31-40 years	29.8	5.13	172.43	0.001
Appointment to worksite by MoH ^b	12.2	2.24	66.71	0.004
Daily travel time ^c				
1-2 hours	2.4	0.65	8.49	0.188
> 2 hours	4.2	0.82	21.83	0.083
Working > 40hours/week	3.7	1.06	12.59	0.039
Satisfaction about referral policy	0.5	0.24	0.98	0.046
Satisfaction about work load	1.5	0.74	2.92	0.269
The likelihood of taking a study leave	1.1	0.50	2.48	0.790
Availability of shopping centres near current work place	0.8	0.42	1.67	0.626
Availability of suitable housing near current work place	1.2	0.60	2.52	0.554
Availability of good quality food near current work place	1.2	0.63	2.14	0.612
Satisfaction about availability of facilities	2.2	1.09	4.34	0.026
Satisfaction about manager encouragement of professional development	2.6	1.30	5.00	0.006
Satisfaction about educational and training opportunities	1.9	0.80	4.37	0.143
Feeling of being isolated from relatives/colleagues/friends	0.2	0.11	0.43	0.001
Satisfaction about level of patients' education	1.8	0.95	3.52	0.069

a) > 40 years was considered a reference for other categories.

b) Self choice appointment is a reference.

c) < 1 hour is a reference.

The most significant finding in this section was that participants whose age ranged from 31 to 40 years were about 30 times more likely to have intention to leave compared to the reference category (those whose age was more than 40 years).

Whereas, those aged ≤ 30 years were about 14 times more likely to have the same intention compared with the reference category.

6.7.5: The final model of factors associated with intention to leave

After adjusting for confounding variables, factors associated with intention to leave rural practice in the Jordanian rural context included physicians' age, appointment by MoH, daily travel time, working > 40 hours in the week, satisfaction about referral policy, satisfaction about manager encouragement of professional development, satisfaction about educational and training opportunities, feeling of social isolation, and satisfaction about level of education of patients. Table (16) shows the final model of the multivariate analysis for factors associated with intention of physicians to leave rural practice in Jordan.

As can be noted in the table, physicians who were appointed to their locations by the MoH were more likely to have intention to leave with an odds ratio of 6.1 compared to other physicians who were appointed by their own choice ($p= 0.004$).

Table 16. The final binary logistic regression analysis of factors associated with intention to leave of Jordanian rural physicians (n=307)

Variable	OR	95% Conf. Interval		p value
		Lower	Upper	
Age ^a				
≤ 30 years	6.1	1.49	25.28	0.012
31-40 years	25.5	5.09	127.91	0.001
Appointment to worksite by MoH ^b	6.1	1.77	21.36	0.004
Daily travel time ^c				
1-2 hours	3.9	1.31	11.65	0.014
> 2 hours	10.1	3.13	32.59	0.001
Weekly working hours > 40	5.3	1.88	14.88	0.002
Satisfaction about referral policy	0.5	0.32	0.86	0.011
Satisfaction about manager encouragement of professional development	1.8	1.09	2.85	0.021
Satisfaction about educational and training opportunities	2.1	0.98	4.63	0.053
Feeling of being isolated from relatives/colleagues/friends	0.2	0.11	0.37	0.001
Satisfaction about level of patients' education	1.9	1.12	3.31	0.017

a) > 40 years was considered a reference for other categories.

b) Self choice appointment was a reference.

c) < 1 hour was a reference for other categories.

One of the most significant results was that related to physicians' age. Physicians whose age ranged from 31 to 40 years were 25.5 times more likely to have intention to leave compared to those whose age was more than 40 years (95% CI: 5.09, 127.91). With respect to daily travel time needed by physicians, physicians who required more than two hours for daily travel time to their work places were 10 times more likely to have intention to leave compared to those physicians who required less than an hour daily for the same purpose (95% CI: 3.13, 32.59).

6.8: Summary of the Chapter

This chapter has presented findings from analysis of data collected from the survey of 307 Jordanian rural physicians. The results of the quantitative analysis found a number of associations with intention to leave rural practice; many of these associations were statistically significant. After adjustment for confounding variables, the multivariate analysis of factors associated with intention to leave rural practice revealed several factors including: age, appointment process (by MoH), daily travel time, referral policy, weekly working hours, satisfaction about manager encouragement of professional development, satisfaction about educational and training opportunities, social isolation, and satisfaction about level of patients' education. The overall rate of intention to leave rural practice among Jordanian physicians was 29.3% (n=90) in the study sample. The next and final chapter of the thesis provides a discussion of the study findings, presents the significance of the study and the limitations. Finally, recommendations are proposed in the chapter.

Chapter Seven: Discussion, Significance, Recommendations and Conclusion

7.1: Introduction

This final chapter discusses the research findings in the light of the published literature and the Jordanian context. The limitations of the study are also discussed. The main findings of the study are then summarised and conclusions drawn in response to the research objectives. Based on the results of the study and supported by the literature reviewed, a number of recommendations are proposed. Suggestions for further research are also provided.

Due to the nature of the issue under study and the limited data about the research problem in the socio-cultural context of Jordan, it was decided to follow an exploratory research method design in an attempt to achieve the objectives of this study. The order of presentation of the various sections in this chapter corresponds to the study objectives. However, before discussing the findings in relation to the study objectives, it is helpful to briefly review the socio-demographic characteristics of the sample.

7.2: Socio demographic characteristics of the sample

The great majority (81.1%, n=249) of the participants were males. This result is not surprising given the dominant role of males over females in the Jordanian community where males are expected to be the principal bread-earner in the family.

Also, the difficulty of transportation to and from rural areas discourages women from working in these areas. In the researcher's experience, it is not culturally acceptable in most Jordanian families for female members to travel alone or to sleep outside their home for any reason even for work purposes. Such under-representation of females in the rural health sector has also been reported from other countries. In a Japanese study, male rural physicians accounted for 92% of the total 3072 respondents (Matsumoto et al., 2004), a trend also observed in Australia where female medical graduates are under-represented in the rural medical workforce (Tolhurst et al., 2000).

With respect to age, the largest proportion of study participants was ≤ 30 years (37.8%, n=116). This result was also reflected when marital status of participants was considered and revealed that 39.4% (n=121) of participants were singles. In the researcher's experience, most of the Jordanians are getting married only after the age of 30 due to poor economic situation in the country and high marriage costs, especially for those who continue their education such as the case of physicians. The next section discusses the major findings of the study in response to study objectives.

7.3: Discussion of major findings

This section of the thesis discusses the study findings in terms of the study objectives. This study has responded to its objectives through out its qualitative and quantitative components. The following sub-sections will now address each of the objectives.

7.3.1: Magnitude of turnover intentions of Jordanian rural physicians

The results from the questionnaire survey highlighted the magnitude of the turnover problem among rural physicians in Jordan (29.3%, n=90). This result is consistent with results revealed by another study from Jordan which found that 25.1% of rural physicians expressed a desire to change their current positions (Al-Qudah, 2011). Interestingly, 70% of rural physicians in Pakistan were unwilling to work in these areas (Farooq et al., 2004). The large difference between the aforementioned proportions between Jordan and Pakistan could be related to the extremely poor work conditions in rural Pakistan compared to those in Jordan.

In the Navajo area in south-western US, 47% of physicians and midlevel health providers expressed an intention to leave their locations (Kim, 2000). This study tested intention to leave within a 3-year period which explains the relatively high rate of intention to leave (47%) in contrast to the current study which tested the same intention over one year.

Overall, while there have been many studies conducted in developing countries to evaluate factors associated with physicians' intentions to leave rural practice; most of these studies did not measure the magnitude of the problem in terms of the proportion of physicians who were intending to leave.

7.3.2: Perceived factors facilitating the retention of physicians in rural Jordan

Many factors were perceived to be associated with better retention of rural physicians, as evidenced in the findings from both the qualitative and the quantitative components of the study. For example, the qualitative component identified availability of general services in rural areas as an important factor in enhancing retention rates. Participants in the focus groups also highlighted the importance of incentives for rural physicians such as the purchase of tax and customs-exempt cars. Other factors included: initiation of residency programs within rural practice, opportunities of continuing education, number of working hours/week, interest in rural practice prior to medical school, good salary scales, supportive and skilled colleagues and staff, easy transportation, and geographic proximity to home/family.

On the other hand, when participants in the survey were asked about what factors would affect their decisions where to practice, their responses complemented results from the focus groups discussions, namely the availability of good quality schools, training in similar communities, wide range and variety of medical cases, proximity to home, professional opportunities, and supportive skilled staff (Section 6.5). Other factors mirrored those believed to enhance turnover intentions such as heavy work load, lack of facilities, inadequate resources, poor general administrative policies, and lack of supervisor respect and support.

Similar factors facilitating retention of physicians in rural areas have been reported from studies in other developing countries such as Nepal (Butterworth et al., 2008; Shankar, 2010), Pakistan (Farooq et al., 2004), South Africa (Kotzee & Couper, 2006), Senegal (Zurn et al., 2010), and Ecuador (Cavender & Alban, 1998).

In contrast to factors facilitating retention in rural areas, the following sections will now discuss factors associated with intention to leave rural practice.

7.3.3: Demographic characteristics and intention to leave

A number of demographic characteristics of participating physicians such as gender, age, marital status, number of children, and rural background of physicians were found to be associated with intention to leave.

Not surprisingly, female physicians had more than double the likelihood of leaving rural practice compared to males, a finding that can be related to socio-cultural restrictions on females working in remote rural areas that require them to stay outside their homes for extended periods. This view is supported by findings from a Malaysian study reporting that family responsibilities had more influence on female workers than on male workers especially in conservative Muslim communities (Smith & Thomas, 2004).

On the other hand, as mentioned before in this dissertation, there are strong social pressures on males in Jordan to be the principal bread-earner of the family. This makes it harder for male physicians to contemplate leaving a rural position compared to female physicians unless they have a better job opportunity elsewhere. In this regard, it can be easier and more acceptable for females to decide to leave a rural posting.

With regards to participants' age and intention to leave, interestingly rural physicians were less likely to intend to leave as they crossed 40 years of age. After acquiring work related experience, physicians typically tend to start thinking about financially more remunerative job opportunities in the Jordanian private sector or overseas (Ammon news, 2102; Tamimi&Tamimi, 2010). Furthermore, at this stage, professional development becomes a concern and can be accomplished by passing the residency programs and obtaining specialist qualifications. This trend may explain why 38.4% among those aged 31-40 years had intentions to leave rural practice. For those who fail in achieving professional promotion through passing the residency programs, and for those who have worked overseas and achieved some financial targets it is then too late to start thinking again about residencies. This group of physicians have no options, but to practice in rural areas. This group of physicians is represented in this study by those physicians whose age was more than 40 years.

These results reflect those revealed by Matsumoto et al (2004) who found that Japanese physicians aged > 50 years were more satisfied with most aspects related to their rural work and lifestyle than younger physicians. It is obvious that most physicians build their career pathway by the time they had turned 40, after which they attain stability in terms of monetary and professional accomplishments.

Number of children was found also to be inversely associated with intention to leave with the physicians having more children less likely to intend leaving their rural posting. However, in the multivariate analysis, the association between number of children and intention to leave was found to be statistically insignificant after controlling for confounders. Physicians with rural backgrounds were significantly less likely to have an intention to leave their rural postings, compared to those with urban backgrounds. This is consistent with findings from studies conducted in developing countries such as Uganda, Mali, Nigeria, India, China, and Thailand which found a significant association between rural background and rural employment of physicians (See section 3.11.3.3). It is clear from these results that rural background plays an important role in retention of physicians to rural areas and prepares them for rural roles (De Vries & Reid, 2008; Pathman, Steiner, Jones, & Konrad, 1999; Rourke, 2010). With regards to marital status of participants in this study, it did not appear to have any association with intention to leave.

7.3.4: Intention to leave and work-related characteristics

Many work-related characteristics were tested for their associations with intention to leave such as work load, experience at current worksites and interpersonal satisfaction and cooperation, salaries and other financial allowances, governorate of work, method of appointment to workplace, country of graduation, job satisfaction and general policies of MoH in rural practice, and work pressure and satisfaction. The following sub-sections go into more detailed discussion of these associations.

7.3.4.1: Work load (number of working hours and patients per week)

The intention to leave was significantly correlated with the work load of the physicians, with a workload higher than 40 hours per week more likely to result in intention to leave. In the Jordanian public sector the average weekly work hours is 40. As a result, physicians who work in excess of 40 hours without additional remuneration are likely to feel overworked and underpaid, which can lead to dissatisfaction with their current posting.

Primary health care centers in rural areas in Jordan are open six days a week compared to five working days at hospitals in larger urban areas. The extra day of work in rural areas impacts in several ways on rural physicians, such as extra travel costs, less time to read and enhance knowledge, and increasing social isolation due to

the reduced time for socializing and spending time with family or friends(Harding, Whitehead, Aslani, & Chen, 2006). Workload as a key factor in deciding whether to stay in or leave rural settings has been documented in the literature (Alexander, 1998; Mainous et al., 1994). In the USA, the feeling of not being overworked was associated with a higher overall satisfaction of rural physicians (Stenger, Cashman, & Savageau, 2008). In another study, Hays et al (1997) reported that while many physicians in rural Australia were enthusiastic and satisfied with their rural work, after a while workload became an issue of concern.

Moreover, other factors such as administrative paper work and supervising other health team members in the health center were viewed as causing additional workload to physicians. In most primary health care centers in Jordan the physician is the head of the health center, and as such has to deal with administrative work such as sick leave and regular leave applications of subordinate staff, and the supply and provisioning of materials and resources required for the functioning of the health center. The number of patients treated daily by physicians did not appear to have any significant association with intention to leave.

7.3.4.2: Experience at current work place and interpersonal satisfaction and cooperation

The results of this study revealed a considerably higher rate of intention to leave among rural physicians who had ≤ 1 year of experience at the current work site. This could imply that with increased length of stay in rural areas, more friendships are made, routines are developed, knowledge of the job, workplace, organization, community, and the strengths and limitations of each of these aspects are understood, hence an individual's comfort level increases.

This finding agrees with results from a study in USA among rural physicians, where those with longer years of experience in rural settings were more likely to want to stay in these areas than those with less years of experience (Cullen, Hart, Whitcomb, & Rosenblatt, 1997).

A longer period of service in one posting can also enhance the cooperation between health team members, and hence, contribute to staff retention. Participants in our study reported that cooperation of other health team members played an important

role when making a decision about whether to stay or leave. This result was similar to that reported by physicians practicing in rural Australia where support from colleagues and supervisors was seen as contributing significantly to increased professional satisfaction in a rural setting (Han & Humphreys, 2005). Similar results have been reported from the USA (Ramsbottom-Lucier, Caudill, Johnson, & Rich, 2008).

7.3.4.3: Salaries and other financial allowances

Both survey and FGD participants emphasized the importance of satisfactory salary scales and financial incentives in retention of staff in rural postings. In our study, focus group discussions highlighted the importance of salaries and financial allowances (Section 5.3.2). Moreover, participants in the survey perceived that turnover of rural physicians could be reduced by retention incentives (Section 6.6.2.11). This is similar to findings from other developing countries in Asia such as Viet Nam (Martineau, 2003), Indonesia (Chomitz, 1998), Nepal (Butterworth et al., 2008) and Thailand (Wibulpolprasert & Pengpaibon, 2003). Moreover, literature from African countries have reported similar results, such as in South Africa (Kotzee&Couper, 2006), Ghana (Agyepong et al., 2004), Tanzania (Leshabari, Muhondwa, Mwangi, & Mbembati, 2008), and Uganda (Gonzaga et al., 2010).

7.3.4.4: Governorate of work, method of appointment to workplace and country of graduation

Aqaba governorate in the far south and Irbid governorate in the extreme north had the highest percentages of intention to leave among rural physicians compared to other governorates. These two governorates are the most developed governorates after the capital city. As a result, one would think that turnover rates from these governorates would be less compared to the other less developed governorates; however, findings revealed the opposite.

This finding can be explained by the proximity of higher education opportunities for physicians in these urban governorates, which in turn can encourage turnover behaviour. In contrast, for physicians who practice in the four other governorates (Ma'an, Tafilah, Karak, and Mafraq), such opportunities for readily accessible higher

education are limited due to their remoteness from cities and poor telecommunications. This in turn may discourage turnover behavior.

Another factor contributing to the higher retention rate in these four governorates may be related to the population they serve in these areas, which are of primarily Bedouin backgrounds. Bedouin people are famed for their hospitality and respect towards strangers, which would be welcoming for physicians. This view is found to be consistent with similar views in the literature reporting that the issue of being respected by the community plays a valuable role in decisions related to turnover (Hegney et al., 2002; Ozolins et al., 2004). Ozolins et al (2004) reported that, physicians who were valued and respected in their rural practice locations were more likely to serve in these areas for longer periods compared to those who had no sense of being welcomed by the community.

Another factor was the method of appointment of the physicians to work sites. Physicians who were allocated to their work places by the MoH had a considerably higher rate of intention to leave rural practice than those who had chosen their workplaces by themselves. Physicians in the latter group would be expected to have prior rural background or exposure to the characteristics of the workplace they were going to work at, and as such it would have been easier for them to adapt to their work sites.

In this context, in the USA, rural physicians who chose their work places by themselves had a significantly higher tendency to stay in rural areas compared to physicians who were allocated to such sites by health authorities (Rabinowitz, Diamond, Markham, & Rabinowitz, 2005). Similar results in other studies reported that health workers who voluntarily accepted rural placements were more likely to serve longer, and therefore mandatory placements may not be helpful in retaining rural health workforce (Playford, Larson, & Wheatland, 2006). The country of graduation of participants in this study did not have any association with intention to leave.

7.3.4.5: Job satisfaction and general policies of MoH in rural practice

Efficient management is vital for effective workplaces; however such efficiencies cannot be accomplished in poorly managed work places (Buykx et al., 2010). In our

study, general administrative policies of the Ministry of Health impacting on professional development were of significant concern to participants. Policies in regards to professional development for physicians and opportunities for education and training were found to significantly impact on turnover intentions. The literature suggests that professional isolation and lack of opportunities for professional development are considerable barriers in both recruiting and retaining rural health workforce (Hays et al., 2003; Katrak, 2008; Stenger et al., 2008). These suggestions support the findings in the last section of the questionnaire which reported that retention of rural physicians could be enhanced by starting residency programs in these areas.

Overall, in this study, rural physicians reported that they were dissatisfied with general policies with respect to rural work. These results are consistent with those revealed by Japanese rural physicians where despite overall job satisfaction with their lifestyle and work environments, they had low intention to stay in rural practice due to dissatisfaction with administrative policies within the organization (Matsumoto et al., 2004). Similarly, rural physicians in South Africa felt frustrated by bureaucracy and protocols directed by poor management style; for example, physicians felt that non-clinical managers should not interfere with clinical work (Kotzee & Couper, 2006).

Promoting opportunities for professional development can be a powerful way to keep physicians and other health workers in rural or remote areas. In New Zealand, a study carried out to examine factors which kept rural physicians in their locations found that continuing medical education was one of the most important factors needed by rural physicians (Kearns et al., 2006). Similar result was reported by rural physicians in Pakistan when professional development was a key player in the perception of rural physicians for willingness to work in rural area (Farooq et al., 2004). Nurses also value such opportunities, with availability of opportunities for education and training acting as a key player in their decisions to remain rural practice (Hegney et al., 2002).

Furthermore, rural physicians experience difficulties to develop and maintain knowledge and skills required to work effectively in rural areas due to lack of access to specialists (Rourke, 2010). In Jordan, specialists are only available at hospitals in

large urban cities. There is rather little scope for physicians to hone their clinical skills in rural areas, as most cases are repetitive in nature and there are limited resources in these areas. This can naturally lead to job dissatisfaction.

7.3.4.6: Work pressure and satisfaction

The work environments of the study participants were reported to be ill-equipped and poorly provisioned with necessities. A large proportion (66%) of participants in this study expressed disappointment at the lack of diagnostic and treatment options in rural health care centres which necessitated referrals of many patients to larger hospital for better care. For example, in most primary health care centers in Jordanian public sector there are no x-ray machines. In this scenario, any orthopedic case requiring x-rays has to be referred to a larger or urban health care institution to have the x-rays done.

Working under such constraints of essential resources can hamper the work and skill development of rural physicians. Moreover, it can diminish the image of the rural physician in the eyes of their patients. Such conditions naturally encourage rural physicians to consider leaving their work postings. This is supported by findings from other countries such as Ghana (Agyepong et al., 2004) and South Africa (Kotzee & Couper, 2006) where physicians who are not able to perform enough procedural or clinical work actively consider leaving their current postings.

The nature of rural practice work causes pressure in other ways as well. First, as physicians in rural areas are the ultimate decision maker they are required to complete administrative work related to budgeting and staffing issues. They often have to take such work home to complete, impacting on time with families and friends. Second, in many rural areas characterized by a culture of hospitality and respect for physicians among the populace, physicians are often invited to social functions such as wedding parties, funerals, and even elections. This further impacts on physicians' free time after work.

Third, because of the heavy workload and the lack of replacement staff who can cover for them, it is difficult for physicians to obtain study leave for professional development or even annual leave. This may increase stress levels among physicians leading to turnover (Alexander, 1998; Matsumoto et al., 2004). In contrast, it is

easier for physicians in large hospitals to take such study leave, as there are many physicians who can provide cover during their absence.

7.3.5: Local and community factors that impact retention decisions

Many local and community factors were perceived to be impacting on decision of physicians whether to stay or leave rural practice. These factors involved transportation issues, availability of amenities, spousal job opportunities, and interactions with rural communities. Assessing the role of local and community factors in the turnover of physicians was an important objective of the study. The following sub-sections discuss in more details of these factors.

7.3.5.1: Transportation

Jordan has a poor public transportation system due to its limited resources. This is particularly so in rural areas where it can impact on the delivery of health services in these areas. Of the various transportation issues, two in particular are worth noting: (a) the long commuting distance and (b) time required by participants to travel to and from their work – with more than (52.1%) of participants needing to travel more than 30 km daily or an hour to arrive to their work locations.

Commuting time seemed to have a direct influence on physicians' intentions to leave. Commuting times of 2 to 3 hours per day in some rural areas can equate to 10 to 15 hours per week, which is valuable time that they could have used for professional development or family commitments if they had been working in an urban area or close to home. This view is supported by a study in Ghana which found that difficulties with transport to work were associated with a higher turnover of health workers (Agyepong et al., 2004). Similar results have been reported by Farooq et al. (2004) among rural physicians in Pakistan and by Cavender and Alban from Ecuador (Cavender & Alban, 1998).

It has been suggested that if a physician moves to a rural area with their family they can overcome the feeling of being socially isolated. Nevertheless, bringing along one's family to a rural posting can entail several difficulties related to spouse employment, schooling for children, and integration with the wider community in the locale (Veitch & Crossland, 2005), further highlighting the complexity of factors associated with turnover.

7.3.5.2: Amenities

Rural communities often lack the services and amenities sought by health professionals – these can be significant to rural workforce recruitment and retention (Langwell, Drabek, Nelson, & Lenk, 1987). There can be considerable differences between urban and rural areas in the availability of general services and amenities, which can lead to dissatisfaction among those who have moved from urban to rural areas. This notion was clearly reflected in a study from Pakistan reporting that physicians perceived rural practice as full of disadvantages affecting their social, professional and family life, if they join in rural areas (Farooq et al., 2004).

With regards to amenities near current work place, participants in this study considered the availability of suitable housing and recreational facilities as important factors impacting on their decision about where to practice. The literature also reports on the impact of suitable housing on turnover intention. In Ghana, health workers considered availability of satisfactory housing units as one of the main reasons for retaining them and decreasing turnover rates (Agyepong et al., 2004). The quality of housing in rural areas can be an issue too, as reported by rural physicians in South Africa who left as soon as they finished their year of compulsory community service because of the poorly designed and accommodated houses. However, others who had good houses mentioned that this was one of the most important reasons for them to stay in rural sites (Kotzee & Couper, 2006).

Participants in this study have highlighted the importance of the availability of good quality education for children on their decision to stay in a rural posting. In Jordan, which has a predominantly service-based economy, educational qualifications are considered to be crucial for securing employment in a job competitive workplace. In our study, a third of the participants who found it difficult to get good quality education for their children in rural areas expressed an intention to leave their locations within a year. Similar findings have been reported by other studies that highlighted the importance physicians attached to the availability of good quality educational facilities for their children (Alexander, 1998; Butterworth et al, 2008; Cutchin, 1997; Farooq et al., 2004; Han & Humphreys, 2005; Harding et al, 2006; Hoyal, 2008).

The availability of recreational and refreshment facilities can also be important considerations in turnover decisions. A Canadian study found that limited recreational facilities negatively influenced satisfaction of physicians and their families in rural locations (Mayo & Mathews, 2006). The importance of the availability of amenities in rural areas has also been supported by other studies (Hays et al., 2003; Pathman et al., 1996).

Surprisingly, the availability of workplace internet connection was not viewed as of significant concern for participants in our study. This could be explained by the presence of three competitive mobile phone companies in Jordan which compete to provide excellent customer services including access to internet.

7.3.5.3: Job opportunities for spouse and child care services

The study found that opportunities for spousal employment and availability of accessible child care influenced turnover decisions (See sections 6.6.3.3 and 6.6.3.2.3). A large proportion (36%) of Jordanian rural physicians who found it difficult to get job opportunities for their spouses close to their work sites considered leaving their current workplace during the next year. The relatively high costs of living in Jordan often require both husband and wife to be working. On the whole, these findings demonstrate the importance of spousal job opportunities on turnover intentions of the partner. This importance was also reflected in studies from other countries (Felix, Shepherd & Stewart, 2003; Han & Humphreys, 2005; Kearns et al., 2006; Ozolins et al., 2004). The ability for both partners to work is only possible with accessible child care services. Thus, 34% of participants who found it difficult to obtain child care expressed an intention to leave their current locations.

7.3.5.4: Interactions with community members

In this study, physicians' dissatisfaction about communication with populations in rural areas and with the level of education of rural people was significantly associated with intention to leave. Higher rates of physicians' dissatisfaction in this domain were associated with higher rates of intention to leave.

Another community factor found to be associated with intention to leave was dissatisfaction with patients' level of cooperation and commitment to treatment, with the higher dissatisfaction level associated with greater intention to leave. Often rural

people can be non-compliant with treatment plans because they either follow traditional ways of treatment or they underestimate the value of the commitment to treatment plans. This can increase stress levels among rural physicians which encourages thoughts of leaving rural practice. Physicians' dissatisfaction about rural communities has also been reported elsewhere in the literature (Buykx et al., 2010; Pathman et al., 1996).

The public image of rural physicians also plays an important part in turnover decisions. In this study, rural physicians perceived public image of rural physicians as lower than that for physicians working in larger hospitals in urban areas. The researcher's own experience in this regard as a member of the rural community in Jordan tends to support this view, as he has often encountered public perceptions that physicians in large hospitals have better skills and knowledge than rural physicians.

Overall, a large number of factors associated with intentions of Jordanian physicians to leave rural work places were identified in this study. Analysis of the focus group discussions highlighted the importance of certain factors and their impact on decisions of physicians where to practice as perceived by different stakeholders (Section 5.3). Similarly, factors revealed from the quantitative part of this thesis and believed to be associated with turnover (Sections 6.6) helped identify the underlying reasons for the turnover of Jordanian physicians in rural areas.

Factors revealed by focus groups included poor rural infrastructure, unsatisfactory remuneration and wages, lack of resources, work load, poor administrative policies, and socio-cultural limitations such as religious influences, public image of rural physicians, and level of education of rural communities.

The same themes were reported by responses to the questionnaire survey and included: transportation and work related characteristics, organizational factors, socio-cultural characteristics of rural communities, and availability of general services near current work place; in addition to certain demographic characteristics of physicians such as age, gender, and number of children. In all, just under a third (29.3%, n=90) of physicians practicing in rural Jordan expressed an intention to leave their locations within the coming year due to the impact of one or more of the above mentioned factors.

7.3.6: A framework of the interactions between factors associated with intention to leave

The results revealed by this study indicate that many of the factors associated with turnover are inter-related. A wide range of factors were reported as impacting on turnover intentions. These factors were diverse with complex and interrelated associations. For example, poor transportation can lead to low number of female physicians which increases workload on male physicians and impedes the quality of services. Poor quality services can cause patient dissatisfaction which can provoke conflicts with physicians. On the other hand, the long commuting time due to poor transportation takes away valuable time which could have been devoted to professional development and training.

With regards to poor infrastructure, difficulties with transportation were associated with social restrictions on the mobility of female physicians in rural areas. Additionally, due to religious and cultural reasons, females could not spend overnight for work outside their homes without being accompanied by one of their close family members or relatives. Professional growth was also affected by the routine and repetitive range of clinical conditions observed in rural areas.

In another example, participants reported that the lack of time and opportunities for professional development including reading and studying affected the quality of health services offered to rural people which in turn sometimes led to conflicts between physicians and patients. These conflicts caused stress and job dissatisfaction and led to turnover.

In conclusion, factors believed to be associated with turnover of rural physicians are diverse and multifaceted. This trend of complexity of factors associated with turnover was also reported by several studies (Butterworth et al., 2008; Cheney et al., 2004; Chikanda, 2006; Hays et al., 1997; Lehmann et al., 2008). The complex nature of factors associated with turnover necessitated the last objective of the study to illustrate this interaction by developing an explanatory framework of these associations. The range of factors affecting turnover and their inter-relationships are illustrated in the flow diagram below.

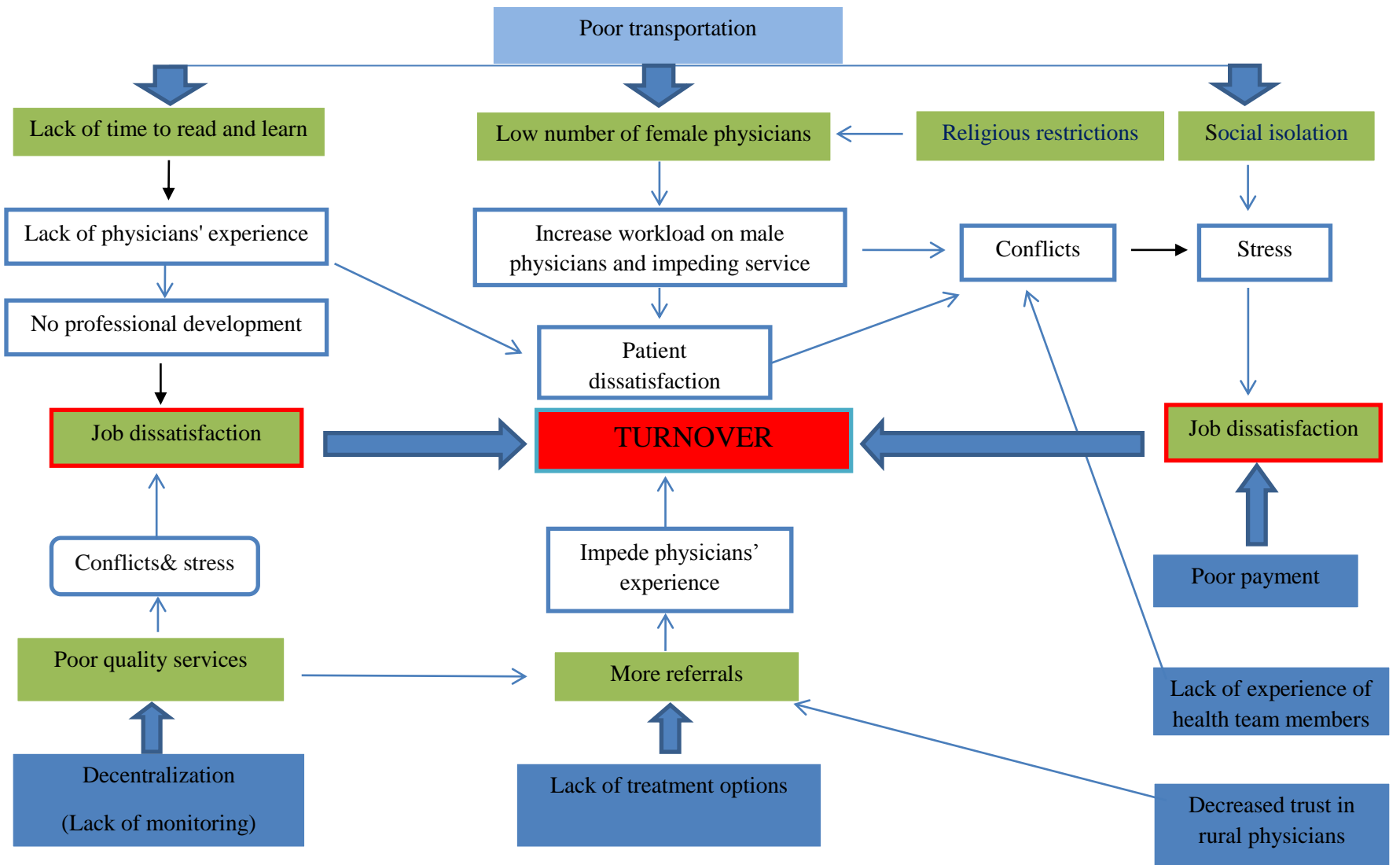


Figure 3. Associations between factors pertaining to turnover

7.4: Recommendations of the Study and the literature

As physicians' turnover and retention dilemma continue to be a focus for organizations worldwide, turnover of physicians in rural areas becomes an issue of greater concern because of the harmful consequences of this issue, especially in developing countries. Analysis of data collected and the literature reviewed in this thesis suggest a range of strategies that could be implemented to reduce turnover rate of rural physicians and improve their retention rate. These recommendations are presented below.

7.4.1: Salary scales, financial incentives and promotions

As voiced by study participants (section 6.6.2.11), financial incentives are vital for retention in rural areas. Moreover, extra benefits which can help employees to balance work and life demands should be provided and communicated to the employees such as extra rural allowance, transportation services or allowances, and tax-free car (section 5.3.2.2). The importance of an effective and fair promotions scheme for rural physicians was also highlighted in the study (sections 3.11.1.1, 5.3.5.2 and 6.6.2.10). This could include moving the employee from one level to another as promotion has been linked to job satisfaction. However; if there are no vacant positions available in the organizational structure to promote valuable employees, giving an employee a new title that reflects the level of work he or she has achieved would be helpful.

7.4.2: Increase selection of physicians with rural background or rural exposure in rural areas

Given that rural background of physicians is significantly associated with retention in rural areas, increased selection of students from a rural background should provide a higher proportion of graduates who will remain comfortable with rural community life for considerable periods of time (sections 5.3.5.3 and 6.6.1.5). In this respect, the MoH can coordinate with universities and medical schools in the country to organize rural practice and exposure in their medical education and curriculums. This would enable physicians to better adapt when they are recruited to rural and remote areas.

7.4.3: Maintain training and professional development of rural physicians

Employees should be given training to improve their skills as most respondents indicated that they lack opportunities to enhance their knowledge and skills necessary for their professional development (sections 5.3.5.2 and 6.6.2.10). Readily accessible education and training opportunities can motivate health professionals to remain in their sites for longer periods (Chikanda, 2006). Therefore, the MoH could offer professional development to rural physicians through regular workshops and seminars that keep their skills and knowledge updated. Such training and educational sessions can create an enabling climate in primary health care centres for employees to maximize their potential.

7.4.4: Residency programs in rural areas

Most of our study participants (section 6.6.2.10) opined that retention could be enhanced by launching residency programs in their areas, a recommendation that the MoH can seriously consider.

7.4.5: Consultation in decision and policy making

Two thirds of the study participants expressed dissatisfaction with the current policies at their work locations (section 6.6.2.14). A greater degree of consultation by managers with rural physicians in work-related decision making could improve this situation and make physicians more committed to their work (Buykx et al., 2010). Regarding turnover of Jordanian physicians in rural areas, due to the adverse consequences, it is imperative for the MoH in Jordan to draw effective policies capable of understanding how to best attract physicians to rural areas and retain them for longer periods of time and keep their role valuable within these areas.

7.4.6: Improving work conditions of rural physicians

This study found that lack of resources at rural physicians' current work locations was associated with higher turnover intentions (sections 3.11.2.1 and 5.3.4). Therefore, providing work equipment and facilities so that employees can do their work efficiently is vital.

7.4.7: Orientation and socialisation of the newly appointed physicians

Orientation and socialization of newly appointed physicians to their rural workplace and community are vital for staff retention. This study found that more than a third of physicians with less than a year's rural experience had an intention to leave within the next year (section 6.6.2.3). The MoH's human resources department can make it a point that new comers are oriented to the work conditions in rural areas, and that socialization is encouraged with other employees. Moreover, rural place orientation programs should be initiated in the medical education to produce physicians ready to practice in rural areas (Section 3.11.4.2). The early stages of employment are most critical because these are the stages where most employees feel that they are isolated and it is the stage at which the employee builds his/her overall perceptions about both the organization and the local community.

7.4.8: Regular satisfaction surveys

Regular surveys should be conducted by the MoH to establish employee –needs as well as to measure their perceptions regarding their jobs. Based on the outcomes and feedback of these surveys, appropriate actions can be taken to ensure staff are satisfied and feel listened to. This notion was reflected in a study from Tanzania reporting that health workers were dissatisfied with their jobs due to inadequate performance evaluation and feedbacks (Leshabari et al., 2008). One of the most valuable type of surveys is the exit survey completed by an employee as they leaves their job or work location during which they can freely express their feelings and suggestions about the work without fear of being penalised. Managers should take suggestions from these surveys in consideration.

7.4.9: Recognition and appreciation by managers

Study findings (section 3.11.1.3) suggest that employees need to be recognised for the contribution they make to the organisation. In this regard, the management can set up appropriate means to acknowledge and reward the achievements and contributions of employees. This can be done through personal or public commendations and acknowledgement through publications in in-house notice boards, newsletters and journals.

7.5: Significance of the Study

It was crucial to conduct this study as a response to the reports of high turnover of Jordanian physicians in rural areas given that literature from Jordan on this issue is lacking. This study is the first of its type to provide systematic and detailed information on the extent of the problem in Jordan and the underlying workplace, socio-cultural and personal factors.

The study examined and documented a wide range of factors associated with turnover intentions of Jordanian rural physicians, which would help inform health policy makers and management to formulate more effective ways to enhance retention of the medical workforce in rural areas.

Importantly, the study identified a number of turnover intentions among rural physicians due to organizational factors, which would be helpful for the MoH in Jordan in drawing up and implementing effective strategies, especially those related to human resources management, to address the problem of physician turnover in rural areas.

It is expected that the study findings and recommendations will help contribute to improved health services in rural Jordan through improving physicians' work and living conditions in rural areas, thus leading to better retention rates. Finally, it is hoped that this research will help inform and guide researchers and health administrators from developing countries which have similar socio-economic and health system characteristics.

7.6: Suggestions for Future Research

For future research, factors pertaining to physicians' satisfaction and turnover in rural settings need to be studied. In this study, some factors were found to be associated with turnover of Jordanian physicians in rural areas; however, the process by which these factors affect turnover is not well recognized. For example, the method of appointment to workplace, the country of graduation of physicians, and community factors were

found to be associated with turnover intentions; however, the extent to which these factors affect turnover is not fully understood.

There are a number of suggestions for future research:

- a) Further qualitative and quantitative research to assess the role of contextual factors in driving turnover behaviour among physicians in rural Jordan. Literature concerning medical workforce issues in Jordan is scanty, especially for rural medical workforce. Therefore, further qualitative and quantitative studies can lead to better understanding of turnover-associated issues.
- b) Organizational research to accurately define the role of various work related factors in turnover decision. It may be simplistic to assume that turnover is mainly driven by financial considerations as other work-related characteristics are also important. Therefore, a new approach of thinking should be adopted and directed toward understanding turnover behaviour in organizations. This new approach of thinking motivates organizations to review staff opportunities, work conditions, and policies with the aim of reducing turnover, improving retention, and building a stable workforce.
- c) Longitudinal studies on actual turnover can better measure an accurate turnover rate than predicting this behaviour on the basis of intention to leave rural practice. The snapshot picture gained from cross-sectional research may not provide the full picture. That is, some participants who expressed their willingness to leave may stay and some of those who expressed intention to stay may leave.
- d) Applied educational research should be conducted in order to produce physicians who are well prepared to work and live in rural areas. Therefore, the MoH, in collaboration with medical schools and controlling authorities of higher education, could initiate rural medical schools and enhance rural exposure for medical students.

7.7: Limitations of the Study

A single study cannot possibly cover the breadth of issues inherent in the study topic and a number of limitations were inherent in the methodological approach followed. These limitations are detailed below.

Sampling issues

Sampling issues include the small sample for the qualitative research (<10% of those surveyed), although the survey sample was appreciably large for a study of this type in a developing country (n=307). Most notably, the sample contained more males which may affect the generalizability of the results. Moreover, despite including other stakeholders in the focus group discussions such as health directors, general rural population, and previous rural physicians, it would have been advantageous to including more than one group of current rural physicians.

Scope

A large part of the study was focused specifically on predicting turnover behaviour among rural physicians by measuring certain factors. This approach came from the confidence based on literature review and focus group discussions that these factors may be important in the turnover process; however it is also likely that the review and FGD may have overlooked additional factors of importance in turnover behavior. Moreover, the cross-sectional design of the study may not be able to fully capture dynamic elements in turnover behavior, such as organizational commitment and job satisfaction, which can really be properly assessed over an extended period of observation. Porter et al (1973) measured organizational commitment over four time periods and found that the significant statistical associations were found in the last two periods, thus suggesting that these associations between turnover and certain factors are stronger at points closer to leaving time.

Therefore, there is a need for longitudinal studies to complement this research and provide a comprehensive analysis of turnover phenomenon in rural areas.

Exclusion of non-English papers for literature review

A limitation of the approach to reviewing the background literature was its restriction to papers in English only. Although most of the relevant literature was in English, some publications of relevance may have also been available in the local languages of countries which make it harder to retrieve these publications.

7.8: Strengths of the Study

The limitations of the study mentioned above were compensated by its strengths. These strengths enhanced the validity of the results (Boxall; 2003Boylan et al., 1993). The strengths of this study include firstly, the representative nature of the sample, as it included a diverse group of workers, particularly in terms of age, education, work experience and background.

Another strength was the use of an instrument that was culturally adapted to the Jordanian context and contained a wide range of items enquiring about several aspects related to rural employment such as transportation issues, satisfaction at current work place, interactions with rural communities and factors thought to be associated with retention and turnover from rural areas. Adopting a mixed method design where both qualitative and quantitative approaches complemented each other to provide a more holistic explanation of the turnover process is also a research strength.

This research study thus documented important issues in the personal, professional and community domains of a government worker's life in rural Jordan. These findings expand upon earlier findings of the existence of links between personal characteristics, professional qualities, community, job satisfaction, stress, social support, organizational commitment and retention.

7.9: Conclusion

Jordan is currently experiencing a skills shortage within its medical workforce, especially in the rural and remote government sector where there is a shortage of physicians and where predominantly newly graduated medical practitioners work. This doctoral research study aimed to explain and predict the turnover phenomenon by measuring qualitatively and quantitatively the effects of various factors on turnover intentions. The factors documented in the findings provide an overview to better understand health worker turnover in rural Jordan with potential applicability to rural medical and health human resources in other developing countries.

The Ministry of Health, universities, medical colleges and communities need to work collaboratively to encourage, and support rural medical and health training and possibly initiate outreach programmes that are attractive to medical and allied health students. Consideration also needs to be given to attracting students with rural backgrounds and collaborating with medical schools to enhance rural exposure and rural training of medical students. Models of retention that are culturally sensitive and supportive need to be designed so that the future medical health workforce needs of the country can be met.

This study clearly demonstrated that the problem of physician retention in rural areas is widespread in Jordan and which is reflective of a global phenomenon and that system wide changes in healthcare financing and delivery are required to support retention efforts. There is a need to focus efforts on rural professional development programs combined with economic incentives and opportunities for promotion and growth. It is hoped that the recommendations resulting from this study will be of value to Jordanian policy makers in adopting and implementing effective retention strategies through improving work and organizational conditions for rural physicians and thus enhance efficiency and effectiveness in rural health services delivery.

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Note

Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.

Appendix A: Ethical approval from Curtin University to conduct the study



Memorandum

To	Dr Janice Lewis, Public Health
From	A/Professor Stephan Millett, Chair, Human Research Ethics Committee
Subject	Protocol Approval HR 106/2010
Date	07 October 2010
Copy	Mr Moawiah Mohammad Khatatbeh Public Health Graduate Studies Officer, Faculty of Health Sciences

Office of Research and Development

Human Research Ethics Committee

TELEPHONE 9266 2784
FACSIMILE 9266 3793
EMAIL hrec@curtin.edu.au

Thank you for your application submitted to the Human Research Ethics Committee (HREC) for the project titled "Factors associated with high turnover of Jordanian Physicians in Rural Areas: A sequential exploratory mixed methods study". Your application has been reviewed by the HREC and is approved.

- You have ethics clearance to undertake the research as stated in your proposal.
- The approval number for your project is **HR 106/2010**. Please quote this number in any future correspondence.
- Approval of this project is for a period of twelve months **05-10-2010** to **04-10-2011**. To renew this approval a completed Form B (attached) must be submitted before the expiry date **04-10-2011**.
- If you are a Higher Degree by Research student, data collection must not begin before your Application for Candidacy is approved by your Faculty Graduate Studies Committee.
- The following standard statement **must be** included in the information sheet to participants:
This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR 106/2010). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au.

Applicants should note the following:

It is the policy of the HREC to conduct random audits on a percentage of approved projects. These audits may be conducted at any time after the project starts. In cases where the HREC considers that there may be a risk of adverse events, or where participants may be especially vulnerable, the HREC may request the chief investigator to provide an outcomes report, including information on follow-up of participants.

The attached **FORM B** should be completed and returned to the Secretary, HREC, C/- Office of Research & Development:

When the project has finished, or

- If at any time during the twelve months changes/amendments occur, or
- If a serious or unexpected adverse event occurs, or
- 14 days prior to the expiry date if renewal is required.
- An application for renewal may be made with a Form B three years running, after which a new application form (Form A), providing comprehensive details, must be submitted.

Regards,

A/Professor Stephan Millett
Chair Human Research Ethics Committee

Appendix B: Ethical approval from the Ministry of Health in Jordan to conduct the study



الرقم تطوير / ١٢٠٠ / ١٢٠٠
التاريخ
الموافق ٢٠١٢ / ١ / ٨

----- مدير صحة محافظة
----- مدير مستشفى

تحية طيبة وبعد ،،،

أرفق طياً صورة عن كتاب رئيس لجنة أخلاقيات البحوث العلمي رقم م ب
أ / لجنة أخلاقيات / ٣٤٥ تاريخ ٢٠١٢/١/٨ بخصوص السماح لطالب الدكتوراه معاوية محمد
خطاطبة تخصص إدارة الخدمات الصحية من جامعة كيرتن / أستراليا إجراء بحث بعنوان :-
(العوامل المرتبطة بهجرة الأطباء الأردنيين من المناطق النائية : دراسة استكشافية متعددة مناهج البحث)
وذلك عن طريق توزيع الاستبيان المرفق صورة عنه على الأطباء الأردنيين العاملين في
وزارة الصحة في المناطق النائية والبعيدة عن مراكز المدن في المملكة .

أرجو التكرم بالإيعاز لمن يلزم تسهيل مهمة الباحث أعلاه .

واقبلوا الإحترام ،،،

مدير تطوير الموارد البشرية

الدكتور أيوب السباينة

مدير تطوير الموارد البشرية

نسخة / الملف

س م

عدد الباحثين (١)

Appendix C: Information sheet and consent for participation in the focus groups

Participant Consent Form

Factors Associated With High Turnover of Jordanian Physicians in Rural Areas: A Sequential Exploratory Mixed Method Study

I (Print Full Name)

have read the information on the attached information sheet regarding this study titled: Factors Associated With High Turnover of Jordanian Physicians in Rural Areas: A Sequential Mixed Method Study '. The nature, purpose and intent of this study have been explained to me as well as the requirements of participation.

I have also been informed where to direct any future questions. I also understand that I can withdraw at any time without explanation or consequences. I understand that my anonymity, privacy and confidentiality are guaranteed. I agree that discussion will be recorded and I voluntarily agree to participate in this study.

I am aware that information gathered from me for this study may be published and all names or any other identifying information will not be used.

Signature Telephone.....

Signature Researcher

Date

Appendix D: The Questionnaire cover letter

العوامل المرتبطة بهجرة الأطباء الأردنيين من المناطق النائية: دراسة استكشافية متعددة منهج البحث

معلومات عامة عن الدراسة

أنا الباحث معاوية خطاطبه. أقوم باجراء هذا البحث كجزء من دراستي لمرحلة الدكتوراة في تخصص الصحة العامة/ ادارة الخدمات الصحية في جامعة كيرتن- غرب أستراليا.

تهدف هذه الدراسة الى استكشاف العوامل التي تؤثر على ظروف عمل الأطباء الأردنيين في المناطق النائية أو البعيدة في الأردن من حيث بقائهم في الخدمة أو نيتهم لترك العمل في هذه المناطق. كما أن نتائج هذه الدراسة قد يكون لها دور كبير في تحسين ظروف عمل الأطباء في المناطق النائية أو استمرارهم في العمل في هذه المناطق أطول فترة ممكنة وبالتالي تحسن الخدمات الطبية المقدمة للمواطنين في تلك المناطق.

يرجى من الأطباء الكرام المشاركة في هذه الدراسة من خلال تعبئة هذه الاستبانة لتمكيننا من جمع المعلومات التي بالتأكد ستكون هامة ومفيدة للوصول للهدف من هذا البحث والمتمثل بتحسين نوعية الخدمات الطبية في المناطق النائية وتحسين ظروف عمل الأطباء في تلك المناطق.

كما يرجى العلم بأن الوقت اللازم لتعبئة الاستبانة يقدر بحوالي 15-20 دقيقة كحد أقصى.

الموافقة على المشاركة:

ان المشاركة في هذه الدراسة هي اختيارية وبامكانكم الانسحاب في أي وقت من دون أدنى أثر عليكم كما يمكنكم الامتناع عن الادلاء بأي معلومة لا ترونها مناسبة.

سرية المعلومات في الدراسة:

ان الاستبانة لا تتضمن أي اسم لأي شخص من المشاركين, كما أنها لا تحتوي على أي معلومة قد تقضي للدلالة عن هوية المشاركين فيها بأي شكل من الأشكال. سوف يتم حفظ جميع البيانات بشكل امن لمدة خمس سنوات قبل ان يتم اتلافها تماشياً مع سياسة جامعة كيرتن. كما يرجى العلم أنه تمت

مراجعة هذه الدراسة وتم الموافقة عليها من قبل لجنة أخلاقيات البحث العلمي في الجامعة المذكورة تحت رقم (2010/106).

إذا رغبت في المزيد من المعلومات عن هذه الدراسة يمكنك الاتصال مباشرة مع الباحث على العناوين الآتية:

Mobile: +962 777388056

Email: moawiah.katatbeh@postgrad.curtin.edu.au

أو يكمن الاتصال مع المشرف المسؤول من جامعة كيرتن الدكتورة جان لويس بواسطة الايميل على العنوان:

J.A.Lewis@curtin.edu.au

كما يمكنك الحصول على المعلومات عن البحث من خلال الاتصال بسكرتيرة لجنة اخلاقيات البحث العلمي في جامعة كيرتن على هاتف رقم: + 618 92662784

مقدما وقبل البدء بملء الاستبانة أشكركم جزيل الشكر والعرفان على المساعدة والمشاركة في هذا البحث.

أخوكم: معاويه خطاطبة

Appendix E: Letter to the Minister of Health asking for approval to conduct the study

Dear Minister of Health,

My name is Moawiah Khatatbeh. I am currently conducting research for my PhD degree at Curtin University of Technology /Western Australia. The purpose of this study is to explore factors associated with turnover intentions of Jordanian physicians working in rural areas. The findings of this study will contribute to better retention of Jordanian physician in rural areas and consequently, better work circumstances and better services.

I seek your permission to undertake this study in the health centers. It will involve filling a questionnaire by Jordanian physicians working in remote areas. All information gained will remain confidential and the anonymity of the persons will be preserved.

Would it be possible to announce the study by displaying the attached flyer on the notice board? Could you also facilitate this study by providing me with a signed letter that confirms your approval?

Your cooperation in this research is highly appreciated, and I look forward to working with you and the staff to promote and improve health services in Jordan.

Yours sincerely

MoawiahKhatatbeh

moawiah.katatbeh@postgrad.curtin.edu.au

Tel: 0779933250

Appendix F: The information sheet accompanied the questionnaire

Participant Information Sheet

Factors Associated With High Turnover of Jordanian Physicians in Rural Areas: A Sequential Exploratory Mixed Method Study

My name is Moawiah Khatatbeh. I am currently conducting a research as a part of my PhD study at Curtin University/Western Australia. The purpose of this research is to explore factors associated with turnover behaviour of Jordanian physicians in rural areas. The knowledge gained from this research will contribute to improve work conditions in rural areas; and therefore, maintains better retention of Jordanian physicians in these areas and enhances health services in rural Jordanian. If you agree and when you have the time, please fill the attached questionnaire and secure it in the attached envelope.

Please be informed that the estimated time to fill this questionnaire is approximately 15-20 minutes at maximum.

Consent to participate

Your involvement in this research is entirely voluntary. You have the right to withdraw at any stage without it affecting you in any way. By signing the consent form, I assume that you have agreed to participate and allowed me to use the information you provide unless you decide to withdraw, or to withhold any information.

Confidentiality

The information you provide by filling the instrument will be anonymous. Identifying information such as your personal details will not be used. Your consent form and information transcribed from the instrument will be kept in a locked cabinet for five years, until which it will be shredded. This process of confidentiality is in accordance with Curtin University policy.

This research has been reviewed and given the approval by Curtin University Human Research Ethics Committee (Approval number HR106/2010). If you would like further information about the research, please do not hesitate to contact me on the following addresses:

Mobile: +962 777388056

Email: moawiah.katatbeh@postgrad.curtin.edu.au

Alternatively, you can contact my supervisor Dr. Janice Lewis by email: J.A.Lewis@curtin.edu.au

Also, if you have any further enquiries about the study being conducted you may contact the secretary of Curtin Human Research Ethics Committee on this number: +618 9266 2784.

In anticipation, thank you for your willingness to participate in this research. Your participation is highly appreciated.

Date: _____

Yours Sincerely

Moawiah Khatatbeh

Appendix G: The questionnaire

SECTION “A” (Questions 1-14): Personal Information

1. How old are you? Years
2. What is your gender: 1. Male 2. Female
3. What is your marital status: 1. Single (Go to Q6) 2. Married 3. Divorced 4.
Widow
4. What is your wife’s job?
5. How many children do you have?
6. What is your country of graduation? Please specify (.....)
7. Which of the following best describes the area in which you grew up?
 1. Rural 2. Urban
8. Where did you spend the major part of your training?
 1. Rural location 2. Urban location
9. In which governorate are you working now?
10. How did you come to work in this area?
 1. Allocated by Ministry of Health 2. My own choice
11. How many years of experience do you have since graduation?
 yearsmonths
12. How long have you been working in your current place of employment?
 years months
13. In average, how many cases do you treat per day?
14. In average, how many hours do you work per week?

SECTION “B” (Questions 15-19): Transportation

15. What is the distance between your home and your current work place?km

16. What is your average daily travelling time to and from your current work place?

1. <30 minutes 2.30 min-1 hour 3.1-2 hours 4.2-3 hours 5.> 3 hours

17. Describe your level of satisfaction about transportation time you spend daily:

1. Very satisfied 2.Satisfied 3. Neutral 4. Dissatisfied 5. Very dissatisfied

18. Describe your level of satisfaction about daily transportation cost:

1. Very satisfied 2.Satisfied 3.Neutral 4.Dissatisfied 5. Very dissatisfied

19. In your view, transportation in Jordanian rural areas affects females’ decision to accept rural employment:

1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree

SECTION “C” (Questions 20-30): About your job

Describe your level of satisfaction about each of the followings at your current work place: Please rate your answer by ticking the numbers from 1-5 where abic

Statement	1 Very satisfied	2 Satisfied	3 Neutral	4 Dissatisfied	5 Very dissatisfied
20. Daily work load					
21. Daily administrative work					
22. Cooperation of other health team members					
23. Experience level of other health team members					
24. Referral policy					
25. Availability of enough diagnostic options					
26. Availability of enough treatment options					
27. Availability of enough health team members					
28. Supervisor/manager encouragement of your professional development					
29. Educational and training opportunities					
30. Availability of satisfactory facilities, e.g.: Kitchen, WCs					

SECTION “D” (Questions 31-38): Job satisfaction

Please indicate the extent to which you agree or disagree with each of the following statements about your current job? Please rate your answer by ticking the numbers from 1-5 where 1= Strongly Agree, 2= Agree, 3= Neutral, 4= Disagree, 5=Strongly Disagree.

Statement	1 Strongly agree	2 Agree	3 Neutral	4 Disagree	5 Strongly disagree
31. I find real enjoyment in my job					
32. I am often bored with my job					
33. I am fairly well satisfied with my job					
34. I definitely dislike my job					
35. Each day on my job seems like it will never end					
36. Most days I feel enthusiastic about my job					
37. I feel that the major satisfaction in my life comes from my job					
38. I'm satisfied with general administrative policies of the Ministry of Health regarding my current practice					

SECTION “E” (Questions 39-47): Amenities

In your opinion, how easily accessible are the following near your current place of employment? Please rate your answer by ticking the numbers from 1-5 where 1= very easy, 2= easy, 3= not sure, 4= difficult and 5= very difficult:

Statement	1 Very easy	2 Easy	3 Not sure	4 Difficult	5 Very difficult
39. Clean water supply					
40. Good quality food					
41. Suitable housing					
42. Job opportunities for wife/husband					
43. Child care					
44. Good quality education for children					
45. Internet access					
46. Shopping centers					
47. Recreational facilities					

SECTION “F” (Questions 48-52): Your feelings about work pressures. Please tick one box for each of the following statements which is closest to how you feel: Please rate your answer by ticking the numbers from 1-5 where 1= Strongly Agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree.

Statement	1 Strongly agree	2 Agree	3 Neutral	4 Disagree	5 Strongly disagree
48. I often feel isolated from relatives/colleagues/friends					
49. It is difficult for me to take study leave					
50. It is difficult for me to take holidays					
51. It is difficult for me to get away from my work					
52. My role extends beyond my actual professional job					

SECTION “G” (Questions 53-55): Please indicate your feeling about the community in the area at which you currently work. Please rate your answer by ticking the numbers from 1-5 where 1= Very satisfied, 2= Satisfied, 3= Neutral, 4= Dissatisfied, 5= Very dissatisfied.

Statement	1 Very satisfied	2 Satisfied	3 Neutral	4 Dissatisfied	5 Very dissatisfied
53. Communication with community in your area					
54. Level of patients’ education					
55. Patients’ cooperation and commitment to treatment					

SECTION “H” (Questions 56-61): In regard to your current practice location, indicate the extent to which you agree or disagree with the following statements:

Please rate your answer by ticking the numbers from 1-5 where 1= Strongly Agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree.

Statement	1 Strongly agree	2 Agree	3 Neutral	4 Disagree	5 Strongly disagree
56. People respect physicians in large hospitals more than rural physicians					
57. Simple and similar cases make me feel bored in my current practice					
58. I feel disappointed due to lack of diagnostic and treatment options					
59. Compared to patients in urban areas, rural patients have similar options and access for treatment					
60. Compared to physicians in hospitals, rural physicians have an equal chance of attending educational and training sessions					
61. I feel myself as part of the community I work for					

SECTION “I” (Questions 62-91): How do the followings influence physicians in their decisions to practice in rural areas? Please rate your answer by ticking the numbers from 1-5 where 1= Major positive, 2= Moderate positive, 3= No influence, 4= Moderate negative, 5=Major negative.

Statement	1 Major positive	2 Moderate positive	3 No influence	4 Moderate negative	5 Major negative
62. Closeness to home/family					
63. Easy transportation					
64. Flexibility and scope of practice					
65. Absence of on-call responsibilities					
66. Supportive, skilled colleagues and staff					
67. Good salary and benefits					
68. Well organized work environment					
69. Have an interest in rural practice prior to medical school					
70. Number of working hours/week					
71. Professional opportunities					
72. Training in similarly sized community					
73. Rural life style					
74. Spousal influences					
75. Relationships and socialization with patients					
76. Realistic expectations by patients					
77. Clinical autonomy					
78. Variety of medical cases					

Statement	1 Major positive	2 Moderate positive	3 No influence	4 Moderate negative	5 Major negative
79. Contact with specialists for patient referrals					
80. Access to medical technology					
81. Opportunities of continuing education					
82. Administrative responsibilities					
83. Opportunities for promotion					
84. Rural/small town lifestyle					
85. Adequate personal time away from work					
86. Good quality school systems					
87. Access to recreational activities					
88. Climate					
89. Reasonable cost of living					
90. Opportunities for professional relationships					
91. Opportunities for social/personal relationships with rural community					

SECTION “J” (Questions 92, 93): Intent to leave

92. Which of the following statements mostly reflect your feeling about your future in your current place of employment?

- 1. Definitely will not leave
- 2. Probably will not leave
- 3. Probably will leave
- 4. Definitely will leave

93. Taking everything into consideration, what is the likelihood that you will make a sincere effort to find a new job within the next year?

- 1. None
- 2. Slight
- 3. Moderate
- 4. Likely
- 5. Definitely

SECTION “K”(Questions 94-98): General information

Please indicate the extent to which you agree or disagree with the following statements: Please rate your answer by ticking the numbers from 1-5 where 1= Strongly Agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree.

Statement	1 Strongly agree	2 Agree	3 Neutral	4 Disagree	5 Strongly disagree
94. Culture in Jordan impedes presence of female physicians in Jordanian rural areas					
95. Turnover of rural physicians can be reduced by retention incentives					
96. Physicians with rural backgrounds may serve for longer periods in rural practice					
97. Retention of rural physicians can be enhanced by starting residency programs in these areas					

98. Do you have any further comments?

.....

.....

.....

THANK YOU VERY MUCH FOR YOUR KIND COOPERATION