

Al-Quds University
Deanship of Graduate Studies
School of Public Health

Thesis Approval

Assessment of Injection Practices among Health Practitioners in MoH
Ramallah District Primary Health Care Units

Prepared By: Nisreen Salman

Registration No:- 20512161

Supervisor:- Motasem Hamdan, Ph,D

Master thesis submitted and accepted , Date:

The Names and Signatures of the examining committee members are as follows:

1. Head of committee: Motasem Hamdan, Ph.D.

Signature



2. Internal examiner: Lina Al-Khairy, Ph.D.

Signature



3. External examiner: Asad Ramlawi, M.D.

Signature



Ramallah- Palestine

2008

Abstract

Infection due to unsafe injection practices is a main reason of blood-borne diseases worldwide. Safe injection is one that is medically indicated and does not harm the recipient, the provider or the community at large. An unsafe injection practice includes injections administered with poor indication or when oral alternatives are available, with improper methods of injection administration, poor method of sterilizing equipment, re-use of syringes and incorrect medical waste disposal methods.

This study was conducted in 2007 to assess the patterns and magnitude of unsafe injection practices at MoH primary health care clinics in Ramallah district. In specific, the objectives were to assess the knowledge of health practitioners (physicians, nurses, lab technicians and dentists) concerning injection practices; assess if injections are administered according to recommended best practices and assess the safety of the medical waste disposal and availability of equipment and supplies needed in injection practices in MoH clinics.

Out of 49 MoH primary health facilities in Ramallah district, 36 clinics which were totally operated by the government were studied. Six of these facilities were in urban areas and 30 were in rural areas. Clinics studied consisted of 35 immunization, 18 curative, 5 laboratories and 2 dental units. Meanwhile, 112 health care practitioners (nurses, physicians, dentists, and laboratory technicians) were interviewed with regard to their knowledge about safe injections and medical waste disposal. Moreover, the injection practices and the availability of equipment and supplies needed for injection practices were simultaneously observed.

Standardized tools adopted from the WHO safe injection assessment guidelines were used to collect the data. Data were collected using a combination of interviews with practitioners regarding their knowledge about safe injection and observation of injection practices and availability of equipment and supplies needed for safe injection practices and waste disposal methods at the clinics.

Health practitioners expressed high level of general knowledge regarding safe injection in 98.2% of the studied sample . There was a lack of written injection safety policies or guidelines in 77.7% of the health facilities and a lack of a source of water in 47.7% of injection areas. Training regarding injection safety and waste disposal was received by 58.9% of the interviewed practitioners, most of whom were nurses working in immunization clinics. Recapping of needles was observed in 46.3% of practitioners and 26% of them were exposed to needle-stick injuries in the past 12 months. Safety boxes were found in all health facilities. However, in 43.3% of the clinics, sharps were observed in open containers. The majority of the interviewed health practitioners knew that hepatitis B is one of the main diseases transmitted by unsafe injection practices, but 18% of them did not receive vaccination against Hepatitis B virus. In 84% of the clinics, waste disposal was done by dumping the waste into an unsupervised area by untrained personnel.

The study concludes that the injection practices in health care facilities that were visited do not meet exactly the guidelines recommended by WHO. These practices need to be improved and strengthened by increasing the awareness of all MoH PHC personnel regarding safe injection practices, as well as infection control and medical waste management and by developing Palestinian MoH guidelines on safe injection practices. Moreover, there is an urgent need to insure the availability of adequate supply of clean water and soap inside injection areas in all health facilities.

ممارسة الحقن الآمن لدى العاملين الصحيين في مراكز الرعاية الصحية الأولية- وزارة الصحة بمحافظة رام الله والبيرة .

العدوى الناتجة عن الحقن الغير آمن هي إحدى الأسباب الرئيسية للإصابة بالأمراض المنقولة عن طريق الدم في جميع أنحاء العالم. ان الحقن الآمن موصى به طبياً بحيث يوفر الحماية ولا يشكل خطورة على المتلقي، أو مقدم الخدمة، أو المجتمع ككل.

ينتج الحقن غير الآمن عن طريق استخدام الوسائل غير الآمنة مثل استخدام الأدوات غير المعقمة، وإعادة استخدام الأدوات والإبر أكثر من مرة وعدم اتباع الطرق الصحيحة و الامنة للتخلص من المخلفات الطبية ، كما ويعتبر الحقن غير امن عند توفر علاج بديل يتناول عن طريق الفم .

أجريت هذه الدراسة في عام 2007 من أجل تقييم وقياس حجم وأنماط وممارسات الحقن غير الآمن في عيادات الرعاية الصحية الأولية في محافظة رام الله والبيرة، وبالتحديد تقييم معرفة موظفي العيادات مثل الأطباء والممرضين وفنيي المختبرات وأطباء الأسنان بالحقن الآمن، ومراقبة عملية الحقن، ومدى توفر الأجهزة والمواد اللازمة من أجل عملية الحقن، ومراقبة عملية التخلص من المخلفات الطبية.

تم جمع البيانات حسب الطريقة المعتمدة من منظمة الصحة العالمية لتقييم عملية الحقن الآمن. وقد تم إجراء الدراسة على 36 عيادة من أصل 49 عيادة في مراكز الرعاية الصحية الأولية في محافظة رام الله حيث تخضع كليا لإشراف وزارة الصحة الفلسطينية. حيث تتواجد 6 عيادات في المناطق الحضرية و30 عيادة في المناطق الريفية. شملت الدراسة 35 عيادة تطعيم، و18 عيادة طب عام، و5 مختبرات و2 عيادة أسنان. تم مقابلة 112 مقدم خدمة الحقن الآمن لتقييم مدى معرفتهم للحقن الآمن، ومراقبة ممارستهم لعملية الحقن، وتوفير الأجهزة والمواد اللازمة لعملية الحقن، وعملية التخلص من المخلفات الطبية.

أعرب 98.2% من مقدمي خدمة الحقن الآمن عن مستوى عال من المعرفة العامة فيما يتعلق بعملية الحقن الآمن. كان هناك نقص في السياسات المكتوبة تجاه الحقن الآمن في 77.7% من المرافق الصحية. ولوحظ عدم وجود مصادر للمياه في مكان تقديم الحقن في 47.7% من المرافق. أفاد 58.9% من مقدمي خدمة الحقن أنهم تلقوا تدريباً حول الحقن الآمن، وكان معظمهم من الممرضين والممرضات العاملات في عيادات التطعيم. لوحظت إعادة تغطية الإبر لدى 46.3% من مقدمي الخدمة، وأشار 26% منهم إلى أنهم تعرضوا لوخز الإبر خلال فترة 12 شهراً الماضية. بالرغم من توفر صناديق النفايات الخاصة (sharp boxes) في جميع العيادات، إلا أنه لوحظ وجود الإبر في صناديق نفايات غير آمنة في 43.3% من العيادات. وبالرغم من معرفة معظم مقدمي الخدمة بأن التهاب الكبد الفيروسي ب ينتقل عن طريق الحقن غير الآمن، إلا أن 18% منهم لم يتلقوا اللقاح الخاص به. وأشار 84% من مقدمي خدمة الحقن الآمن إلى أن التخلص من النفايات الطبية يتم عن طريق طرحها في منطقة غير مراقبة صحياً من قبل موظفين غير مدربين.

تلخص الدراسة بأن ممارسات الحقن في مرافق الرعاية الصحية الأولية التي تمت دراستها لا تفي بجميع لمبادئ الموصى بها من قبل منظمة الصحة العالمية. لذلك ينبغي إعطاء الموضوع مزيداً من الاهتمام من قبل وزارة الصحة، وذلك عن طريق زيادة الوعي الطبي بين جميع الموظفين بشأن ممارسات الحقن الآمن وإدارة النفايات الطبية ووضع مبادئ توجيهية بشأن ممارسات الحقن المأمون في جميع المرافق الصحية، بالإضافة إلى ضمان توفير المواد اللازمة لعملية الحقن الآمن، بما فيها توفير مصدر للمياه والصابون داخل مناطق الحقن في جميع المرافق الصحية.

Table of contents

	Page
Dedication	i
Declaration	ii
Acknowledgement	iii
Abstract in English	iv
Abstract in Arabic	vi
Table of contents	viii
List of tables	xi
List of Figure	xii
List of abbreviations	xiii
List of annexes	xiv

CHAPTER ONE: Introduction

1.1	Introduction	1
1.2	Problem statement	3
1.3	Importance of the study	3
1.4	Aim of the study	4
1.5	Objectives of the study	4
1.6	Research questions	5
1.7	Assumptions	5
1.8	Limitation	5

CHAPTER TWO: Literature review

2.1	Introduction	6
2.2	International studies	9
2.3	Regional studies	12
2.4	National studies	13

CHAPTER THREE: Conceptual framework

3.1	Definitions	14
3.2	Burden of diseases transmitted by unsafe injections	15
3.3	Factors contributing to unsafe injections	16
3.4	Best injection practices	18

CHAPTER FOUR: Methodology

4.1	Introduction	19
4.2	Study design	19
4.3	Study population	19
4.4	Instrument of the study	20
4.5	Pilot testing	20
4.6	Data collection and analysis	21
4.7	Ethical consideration	21

CHAPTER FIVE: Results

5.1	Introduction	22
5.2	Characteristics of the study	23
5.3	Knowledge of interviewed practitioners	24
5.4	Supplies and infrastructure	34
5.5	Injection practices	35
5.6	Disposal of waste	39
5.7	Methods of waste disposal	42

CHAPTER SIX: Discussion, Conclusion and Recommendations

6.1	Introduction	43
6.2	Conclusion	47
6.3	Recommendations	48
6.4	Summary	49

References	50
Annex 1. Study questionnaire	54
Annex 2. Approval form	59

CHAPTER ONE

Introduction

1.1 Introduction

Injections are a skin puncturing procedure performed with a syringe and needle to introduce a substance for prophylactic, curative, or diagnostic purposes. Injections can be given intravenously, intramuscularly, intradermally, or subcutaneously [WHO, 2006].

Injections are one of the most common health care procedures. Each year, 16 thousand million injections are administered in developing and transitional countries. The vast majority, around 95%, are given in curative care. Immunization accounts for around 3% of all injections, with the remainder for other indications, including injections of blood and blood products and contraceptives [Hauri et al., 2004; WHO, 2006].

The use of injections in low-income countries is common and often involving unnecessary and unsafe injection practices, such as the reuse of contaminated needles and syringes in many parts of the world [Simonsen et al. 1999, Lakshman and Nichter, 2000]. In developing and transitional countries, the estimated number of injections per person per year is 3.4 (range 1.7-11.3) and the proportion of unsafe injection is estimated to be 39% (range 1.2-75%) [Hutin et al., 2003].

Patients prefer injections because they believe them to be stronger and faster medications. They also believe that doctors regard injections to be the best treatment. In turn, doctors over-prescribe injections because they believe to have more satisfaction for their patients, even though patients are often open to alternatives. In addition, prescription of an injection sometimes allows the charging of a higher fee for service. Better communication between patients and providers can clarify these types of misunderstandings and help to reduce injection overuse [Youwang, 2001; Hutin et al., 2003].

Rationale

Unsafe injection practices are common worldwide. The combination of injection overuse and unsafe injection practices results in a substantial burden of preventable blood-borne viral disease (BBV). At risk of infection are injection recipients and health care workers through contaminated needles and syringes and the community at large through exposure to contaminated waste. Epidemiological studies have indicated that unsafe injections commonly transmitted 32% of Hepatitis B virus infection, 40% of Hepatitis C virus infection, and 5% of human immunodeficiency viruses (HIV) [WHO,2006]. Other complications of unsafe injections include abscesses, septicemia, malaria, and infection with viral hemorrhagic fever viruses.

Despite the fact that injection safety could be a public health problem in Palestine, there is a lack of evidence on the magnitude of the problem and level of personnel knowledge of safe injection practices. Besides a clear policy and management system of the Ministry of Health concerning safety injection practices is still missing. This study will identify local problems in injection practices, provide baseline data and suggest indicators for monitoring the process of injections. Consequently, it will contribute to the body of knowledge about the issue and can inform the formulation and implementation of adequate injection safety policy and strategies.

1.2 Problem statement:

The widespread incidences of blood-borne diseases, which are often the result of infection due to unsafe injection practices, have been an important public health problem worldwide. According to the data obtained from Ministry of Health, Hepatitis B is endemic in Palestine (prevalence rate was around 3.4% in 2000), whereas Hepatitis C is less endemic (prevalence rate is around 0.03%), and HIV cases are rare: the estimated number of HIV cases is 300 – 500 patients, in addition to 81 AIDS cases in the West Bank, Gaza and East Jerusalem [Ministry of Health, 2004].

These figures mean that in Palestine there is a serious public health risk for blood-borne infections. In addition, it is believed that unsafe injection practices are prevalent in the Palestinian health care facilities and might be one of the causes of blood-borne diseases, such as viral Hepatitis B, viral Hepatitis C and Human immunodeficiency virus HIV/AIDS in the country. The infection may occur through reusing contaminated needles or sharing needles between different recipient (drug addicts), or through needle stick injury, as well as through improper management of medical waste including contaminated needles.

1.3 Importance of the study:

Injection safety is a public health problem worldwide as it is a Palestinian public health problem. While injection safety is MoH priority, and especially in view of the fact that no previous study on injection safety practices in Palestine has addressed the need for a clear policy, rules or management system to be adopted by MoH in this regard, this thesis will respond to and correlate with MoH needs by:

- Identifying local problems in injection practices to design effective and efficient interventions.
- Providing data to be used as baseline information and suggesting indicators for monitoring the process of injections.

- Providing data to help the Ministry of Health in designing and implementing a safe injection policy.

In addition, the cooperation on management level will be strengthened between universities' academic staff and the MoH professional staff.

1.4 The overall aim of the study:

- The overall aim of this study is to assess the patterns and magnitude of unsafe injections practices at the Ministry of Health - Primary Health Care clinics in Ramallah district.

1.5 Study objectives:

1. To assess the knowledge of health practitioners concerning safety injection practices and medical waste disposal in the MoH – Ramallah District PHC clinics.
2. To assess whether injections are administered according to recommended best practices.
3. To assess the safety of medical waste disposal practices.
4. To assess the availability of equipment and supplies needed in injection practices in the clinics.

1.6 Research questions

1. What is the level of knowledge and attitudes of health practitioners in the MoH PHC clinics in Ramallah District regarding injection practices?
2. Are injections administered according to WHO recommended best practices in the MoH PHC clinics in Ramallah District?
3. Is medical waste properly disposed in Ramallah district PHC clinics?
4. Are supplies and equipment needed for injection practices available in MoH Ramallah District PHC clinics?

1.7 Assumptions

The study is based on the following assumptions:

- A sufficient number of health practitioners from Ramallah PHC clinics will cooperate with the researcher and participate in the study.
- The questionnaire used to collect the data is easy to understand and of high reliability.

1.8 Limitations:

- 1) The study was limited to specific types of health practitioners, who are involved in injection practices (nurses, dentists and lab technicians) in the MoH primary health care clinics in Ramallah district.
- 2) Only MoH clinics were studied, while 13 clinics in Ramallah district were excluded from the study since they were shared clinics with other providers.

6.2 Conclusions

The results of this study indicate that injection practices in health care facilities that were visited do not meet the guidelines recommended by WHO. Suboptimal injection practices markedly contribute to the spread of blood-borne diseases to health practitioners as well as patients. Health care facilities that were visited lacked adequate activities and control measures that promote and ensure safe injections. There is an urgent need to address this issue and to implement strategies to bring about improvement.

Lack of awareness among health practitioners regarding safe injection practices is most likely to be a main risk factor of injuries and diseases to injection providers themselves, patients, and other staff. Although the practices of trained staff met the guidelines recommended by WHO in certain clinics, practices of such staff in other clinics did not and seemed to be similar to the practices of those who did not receive training in the past. This suggests that the training courses given to MoH staff were not sufficient to increase the health care practitioners' awareness and to change their behavior and practices. This also suggests that the implementation of proper injection practices needs not only oriented training courses, but also stricter regulations, supervision and application of specific incentive and punishment schemes.

In general, some of these bad injections practices observed could be improved if there is a good management system followed by the health practitioners through out all the work.

6.3 Recommendations

Giving the findings of the study, some recommendations to sustain and improve injection safety practices in Palestinian health care facilities can be made.

- Increasing the awareness of the MoH PHC personnel regarding safe injection practices as well as infection control, and medical waste management.
- Increasing community awareness concerning unsafe injection as a main cause of blood-borne disease.
- Providing Hepatitis B vaccine to all health and non-health personnel who are exposed to the risk of catching the disease.
- Developing Palestinian MoH guidelines on safe injection practices.
- Ensuring that infection prevention control and medical waste management instructions are available in all health care facilities and communicated to all health care providers.
- Maintaining adequate level of supplies needed for safe injection practices in all health care facilities.
- Assuring availability of adequate supply of clean water and soap inside injection areas in all health facilities.
- Developing and disseminating written instructions and guidelines for safe injection practices, infection control, and medical waste disposal to all health care facilities.
- Ensuring routine supervision of all health care facilities on injection safety and medical waste disposal.
- Ensuring that only trained persons are responsible for the collection and management of medical waste at all health care facilities.
- Developing, adopting and implementing incentive and punishment schemes in order to strengthen injection safety practices and medical waste management at MoH services.