

# DETERMINANTS OF THERAPEUTIC INJECTION OVERUSE AMONG COMMUNITIES IN SINDH, PAKISTAN

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**Background:** Unsafe injections including reuse of disposable syringe is very common in developing countries including Pakistan. Healthcare providers unnecessarily prescribe injections to patients suggesting that patients ask for injections. We conducted this qualitative study to determine the reasons of overuse of therapeutic injections by the communities in Sindh province of Pakistan.

**Methods:** Using field-tested focus group guides of World Health Organization, eighteen focus group discussions (FGDs) were conducted with community members of rural Sindh, peri-urban and urban Karachi during January-February 2001. **Results:** Injections are overused in Sindh, Pakistan, because patients prefer them, believing that they provide quick relief, and perceive them as a therapeutic norm and standard practice. According to community members initiative of prescription of injections are taken by doctors. Overuse of injections is of particular concern as patients are not aware of the risks associated with reuse of injection equipment. Doctors and television are considered as the most credible source of providing healthcare information.

**Conclusion:** There is a need to educate communities regarding rationale use of therapeutic injections. Open discussion and frequent communication between doctors and patient should be encouraged. Mass media could play a vital role in educating communities about risks of unsafe injections.

**Key words:** Overuse, unsafe injections, focus groups, patient's awareness, hepatitis B, hepatitis C

## INTRODUCTION

Administration of therapeutic injections is among the most frequently performed medical procedure in the healthcare sector. It is estimated that annually 16 billion injections are administered in developing and transitional countries, of these 95% are used for curative purposes.<sup>1</sup> The World Health Organization (WHO) defines a safe injection as one that does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous for the community.<sup>2</sup> Unsafe injection practices are common in developing countries and can cause death and disability to patients. Serious infections are associated with unsafe injections including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).

People in Pakistan receive great number of injections. Attitudes of 198 patients towards injections were investigated in Pakistan and 3.5% had received 10 or more injections in the last year where as 64% felt that injection was more powerful. However, 91% reported that the doctor always recommends an injection.<sup>3</sup> Prescribing practices of 354 physicians practicing in city of Karachi in Pakistan were audited in 2001. Antimicrobials, vitamins/minerals and injections were over prescribed.<sup>4</sup> Unsafe injection practices in Pakistan have been associated with transmission of HBV and HCV infections.<sup>5,6,7</sup>

The objective of the present study was to determine the reasons of overuse of therapeutic injections by the communities in Sindh province of Pakistan so that appropriate interventions could be planned.

## **MATERIAL AND METHODS**

A qualitative approach (focus group discussion) was used to determine the reasons of unsafe injection practices. The study was carried out between January -February 2001. The Ethical Review Committee of Aga Khan University reviewed the study and fieldwork was initiated once approval was granted.

In September 2000, a group of health professionals were trained in the use of the focus group methodology and to field test the generic WHO focus group guides. Discussion guides were developed and pre tested at two different sites in urban Karachi.

Karachi is the largest city of the country with a multi ethnic population and it also has numerous urban slum settlements that constitute 40% of the city's population.<sup>8</sup> Two different localities in urban Karachi, peri urban Karachi and rural Sindh were identified. Urban localities were densely populated slum area, peri urban were just outside Karachi but close enough for the locals to commute regularly for livelihood and other business in the city. Rural localities were northern and southern agricultural areas of Sindh. Meetings were held between the investigators and other key community contacts before the start of the study. Key community contacts were persons from the identified areas and who could assist the research team in conducting focus group discussion sessions. The field team consisted of a moderator and a note taker.

Venues for focus groups were houses, community halls, teashops and factory units. The sites were selected according to the convenience of the participants and community contact person. Focus group discussions with females were held in one of the houses of the community.

With the help of key community contacts, homogenous groups for age, sex and occupation were selected. The moderator explained the study objectives before each group and participants were assured of their anonymity. Verbal consent was taken to tape record the sessions. Besides recording, the note taker simultaneously took written notes and observed and recorded expressions of the participants. The beginning section of discussion addressed common conditions and healthcare seeking behaviors. The second part addressed types of treatment prescribed and their costs. Finally, the interview probed injection practices, perceptions about injection safety and injection-associated infections, attitudes towards use of injections to administer medications, and proposed suggestions to improve injection practices. The moderator based the discussion on the WHO guides, but did not restrict it to these specific questions or probes. At the end of each session the moderator gave an informative talk about injection safety.

Missing information was added after listening to the tapes of the discussion sessions. Data were transcribed into a word processor. Content analysis organized raw data into readable narrative descriptions with major themes, categories, and illustrative examples. Finally, frequencies of responses were estimated after separating responses from all focus group discussion sessions.

## **RESULTS**

A total of 18 focus group discussion sessions were carried out in three different settings: eight in urban setting (six male and 2 female), six in peri urban (four males and two female) and five in rural (two males and three females) areas. The average number of participants in each session was eight. The age range was 18-80 years (females) and 20-55 (males).

Participants believed that the doctor is the better judge of a good quality treatment however; they related good quality treatment to receiving injections, or any treatment that can give them cure from ailment. They were also

concerned about the quality of drugs available in the market. A few groups suggested that injections are necessary in a good quality prescription. For example an old woman from urban Karachi said, “injection is a must and we get cured with it” another middle age woman from urban Karachi replied, “without injections there is no relief.” Participants in our study also suggested that oral medication for children and injections for adults was the best quality treatment.

Table 1: **Occupation, area, ethnicity and gender of participant groups in the study**

Occupation	Ethnicity	Area	Male	Female
Office workers	Balochi, Pushto & Punjabi	Urban	2	
Housewives	Balochi, Pushto & Urdu	Urban		1
Labor	Sindhi & Punjabi	Urban	4	
Housewives	Sindhi & Punjabi	Urban		1
Farmers & Labor	Sindhi	Peri urban	4	
Teachers & housewives	Sindhi	Peri urban		2
Factory workers	Sindhi	Rural	1	
Farmers	Sindhi	Rural	1	
Housewives	Sindhi	Rural		1
Housewives	Sindhi & Urdu	Rural		1
<b>Total = 18</b>				

Pills, injections, and syrups were the main mode of treatment in all areas. Peri urban areas mentioned that injections are necessary in a prescription and they prefer what the doctor prescribes. Participants in rural areas revealed that young doctor (referred to fresh graduates) prescribe fewer injections compared to older doctors. They also suggested that healthcare providers have a financial interest in prescribing injections. Fever, flu, abdominal pain and headache were the common conditions that lead to an injection. Most of the participants reported that doctors usually took the initiative to prescribe an injection but there were few study participants who mentioned that they asked for an injection.

Participants reported that visit to a clinic usually lead to the prescription of two to three injections. In most cases, the dispenser, healthcare aide hired by the doctor, dispense medications and administer the injections.

The average cost of prescriptions that included injections and medicines was in the range of Rs. 35-37.00 (US\$0.60) versus Rs. 31.00 (US\$ 0.51) for prescriptions that did not include injections. Average cost of intravenous infusions prescribed in cases of weakness or diarrhea was Rs.221.00 (US\$3.6).

Participants reported that injection equipment was supplied in healthcare provider’s clinic. Most participants reported not paying attention and not being able to observe the opening of a new packet when they received an injection. Some participants reported having witnessed reuse of disposable syringes in the absence of sterilization. From an urban area a male respondent said, “We do not know, they bring the syringe from behind the counter.” Participants mentioned that they generally do not ask for a new packet but those few who reported asking for a new syringe were not provided with one. In such instances, the participants reported that the dispenser assured them that the syringe was clean. Participants did not recognize sterilization of syringes as an important issue. When probed further they replied that sterilization is necessary and hot water kills germs.

Quick relief, referred to as early relief from the disease was reported as the main reason to prefer injections. Participants cited that the main reason to visit a clinic is to get relief from the illness and they believe that an injection serves this purpose well because after receiving an injection they get better quickly. Some of the daily wage earners informed that many doctors often tell them that they could get to work the next morning after receiving an injection. Although most of the participants described that they would prefer injection, however, some reported that they would like to use oral medicines if they could be convinced that oral medications work as fast as injectable medications.

Reaction (referring to allergic reactions) and abscesses were reported as the most common side effects of injections. AIDS was the predominant risk mentioned by communities because of poor injection practices. They also believe that AIDS is widespread in Pakistan.

Although jaundice was known among the participants but they did not associate it with poor injection practices. Moreover, few knew about specific causes of viral hepatitis, including hepatitis B and C and chronic liver disease.

Television and doctors were reported as the most credible source to receive health information. Television was reported to be the media of choice to convey safe and appropriate use of injection messages.

## DISCUSSION

Injections are overused in Sindh, Pakistan, as patients prefer them, believing that they provide quick relief, and perceive them as a therapeutic norm. However, according to the communities prescription of injections usually results from an initiative from the doctors. The communities consider injections in a prescription as a standard practice. Overuse of injections is of particular concern as patients are not aware of the risks associated with reuse of injection equipment. Doctors and television are considered as the most credible source of providing healthcare information. These findings were consistent in different geographic regions of the province and there was no significant difference noted.

The overuse of injection practices in Pakistan has become a therapeutic norm in the practice of general practitioner (GP). Majority of these injections is administered under unsafe conditions exposing the patient to infectious diseases, including abscesses, HIV/AIDS and viral hepatitis B & C. In a review of literature conducted by Simonsen and colleagues, the number of injections for 13 developing countries representing five regions including Pakistan was estimated. The average number ranged from 0.9 to 8.5 per person per year. The highest prevalence (8.5) was for Pakistan, Ecuador and Moldova.<sup>9</sup> The indications for injection treatment included several non specific symptoms such as mild diarrhea, fever with no other symptoms and fatigue. More than 50% of these injections were unsafe i.e., syringes and needles were used on consecutive patients without sterilization.<sup>9</sup> Extent and characteristics of therapeutic injection use and injection providers in Egypt was researched in household survey and formal and informal medical providers. Of 4197 persons interviewed 26.2% reported receiving an injection in the past three months and 8.4% reported that the provided did not use a syringe taken from a sealed packet. Seventy seven percent injections were for therapeutic purpose. Overall respondents reported receiving 4.2 injections per year.<sup>10</sup>

In Pakistani culture patients strongly trust doctors therefore concerted efforts are needed to involve these practitioners so that they improve their prescribing practices and engage in safe and appropriate use of injections. At the same time, communities have to be educated so that they know that oral medicines offer relief in the same manner however, may not be as fast as injectable medications. It has been documented that patients do believe that it is possible to get better without an injection.<sup>3</sup>

“Quickness” in relief is an important concept and has two perspectives. First, the healthcare providers want to prove their ability to provide cure for treatment urgently and confirm the seriousness of patients complaints and responds quickly and directly with a tangible intervention so that they can build good relationship with the patient. Second, there is an economic perspective in the mind of the patient that they want to be relieved quickly to be fit for work. This situation is creating a mutual expectancy between the patient and the healthcare provider that results in the administration of an injection. Another dimension of quickly is that the medication gets quickly inside the body. In Indonesia, this situation was addressed successfully with group discussion involving health care providers and communities to reduce the overuse of injections.<sup>11</sup> However, keeping in mind that Pakistan is a large country and several interactional group discussions would be required other alternative means which could provide health education should be explored.

Our study indicates that communities seldom notice what kind of syringe is used when an injection is administered. To improve poor injection practices, communities should take the initiative and ask the practitioner to open a new disposable syringe in front of them. Such a consumer demand for safe injection equipment could only occur if patients are aware of the risks associated with unsafe injections.

Our focus groups were limited to selected urban, peri urban, and rural areas, and mostly captured low and middle income persons. However, we were able to select different ethnic and gender groups from these three areas. Urban slum areas of Karachi comprise of populations of different ethnic groups which come from all over Pakistan. Urban slum areas also comprise of almost 40% of metropolis of Karachi and if peri urban areas are included it becomes 50% of the whole metropolis.

## **CONCLUSION**

Patients in Pakistan receive unsafe injections and are at risk of acquiring blood-borne infections. Prudent measures to increase awareness are required to reduce their risk factors associated with unsafe injections.

## **RECOMMENDATIONS**

To achieve safe and appropriate use of injections in Sindh, Pakistan, the general population should understand that while injections do work faster than oral medications unsafe injections can be dangerous unless administered using new disposable injection equipment.

1. Doctors should be associated to these communication activities because a.) Patients trust them. b.) They often take the initiative of prescribing injections.
2. Electronic media can be used effectively to educate masses on risk of unsafe injections.

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