

## Factors Influencing Preference for Injections Among Patients Attending Health Centres in Field Practice Areas of A Medical College in Karnataka, India

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### Abstract

**Background:** Injections are preferred over oral medications by most of the patients, which is a common sight we come across in most hospitals of India. Majority of patients try self-medication at home or take over the counter medications in oral route for relief. If self-medication with oral therapy brings no relief, or when a fast cure is desired, patients tend to solicit providers for an injection.

**Aims:** To study the factors influencing preference for injections among patients attending rural field practice area of a medical college in Karnataka, India.

**Settings and Design:** This cross-sectional study was conducted in the rural field practice area of a Medical College in Karnataka, India.

**Materials and Methods:** All the patients walking into the Primary Health Centre (PHC) were involved in the study. After explaining the purpose of the study and obtaining written informed consent, an interviewer administered semi structured questionnaire was applied to collect the information.

**Statistical analysis used:** Data was entered and analyzed using Epi info version 4.0.

**Results:** Around 63% of study population preferred for injections. Majority (92.2%) believed that injections are mainly meant for therapeutic purposes. More than half of the study population (58.1%) had tried medications at home before coming to the hospital.

**Conclusion:** The preference for injections is high in rural areas; dramatic cures from injections are expected as major reasons for this preference.

**Keywords:** Injections, Oral medications, Preference, Rural area

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### I. Introduction

Preference of injections over oral medications and widespread misuse of injections in many developing countries has long been of great concern to health professionals and the World Health Organization (WHO).<sup>[1]</sup> Injections are among the most commonly used medical procedures with an estimated 16 billion administrations each year worldwide. An overwhelming majority (90%-95%) of these injections are administered for curative purposes.<sup>[2]</sup> Moreover, a majority of the curative injections have been judged to be unnecessary.<sup>[3]</sup> In many countries, including India, therapeutic injections are provided in the formal sector by trained, allopathic healthcare practitioners such as doctors, nurses and others, and in the informal sector where (allopathic) injections are given by non-allopathic practitioners including traditional healers.<sup>[4]</sup> In India the popularity of curative injections remains high due to various factors influencing the behaviour of the prescriber/injection givers as well as the clients.<sup>[5]</sup> Injections are preferred over oral medications by most of the patients, which is a common sight we come across in most hospitals of India. Majority of patients try self-medication at home or take over the counter medications for relief. If self-medication with oral therapy brings no relief, or when a fast cure is desired, patients tend to solicit providers for an injection.<sup>[1]</sup>

Hence the present study intends to determine the extent to which rural Indian patients received injections, and assess the level of knowledge and locally relevant determinants of prevailing injection practices.

## II. Materials And Methods

This cross sectional study was done in Lokikere, Primary Health Centre (PHC) the rural field practice area of SS Institute of Medical Science and Research Centre (SSIMS & RC), Davangere Karnataka. Ethical clearance was obtained from the Institutional Ethics and Review Board (IERB). All the patients and guardians (in case of children less than 18 years) walking into the Lokikere PHC were involved in the study. A total of 884 patients had visited the PHC including old and new Out-patients (OP's) in one month from January-February 2015. Among them only the new OP's were selected for the study (486) and an exit interview was done. Patients who were referred from other hospitals for the first time were also included in the current study. After explaining the purpose of the study and obtaining written informed consent, an interviewer administered semi-structured questionnaire was used to collect the information from the study participants. In case of children and elderly who were not able to comprehend to the study questionnaire, information was obtained, after taking informed consent from the guardian or accompanying attender. Patients not willing to participate in the study and who came back for follow-up in the same month were excluded.

## III. Statistical Analysis

Data was entered and analyzed using Epi info version 4.0. Descriptive statistics such as mean, median, standard deviation were applied to summarize the quantitative data such as age, monthly income etc., Proportions and 95% Confidence Interval were computed for qualitative parameters such as type of disability, dependency etc. Chi-square test was employed to compare the proportions between different groups. A statistical significance of 0.05 was considered.

## IV. Results

**Table 1: Socio-demographic details of study population**

Parameter	Frequency	Percentage (%)
<b>Age groups (in years)</b>		
≤ 20	88	22.2
21-35	100	25.3
36-50	85	21.5
51-65	72	18.2
≥66	51	12.9
<b>Gender</b>		
Female	183	46.2
Male	213	53.8
<b>Education</b>		
Not literate	88	22.2
Primary school	171	43.2
High school	104	26.3
Pre-university/ 12 <sup>th</sup>	26	6.6
Degree	7	1.8
<b>Total</b>	<b>396</b>	<b>100.0</b>

A total of 396 individuals participated in the study. Table 1 shows the socio-demographic details of study population. Majority (46.8%) were in the age group of 1 and 2. The gender-wise distribution was almost equal in the study population (female=46.2%, male=53.8%). In terms of educational status 22.2% were not-literate and majority (43.2%) had completed primary schooling. More than half of the study population (58.1%) had tried medications available at home or over-the-counter drugs before coming to the hospital, among which analgesics and antipyretic drugs were the commonly used. This shows a highly prevalent self-medication practice in the study area, people try medications at home, and if, not cured turn up for consultation from a doctor or health worker.

**Table 2: Perception of study population about need for injection**

Reasons for injection	Frequency	Percentage (%)
Therapeutic	364	91.9
Immunization	25	6.3
Follow-up IV infusion	4	1.0
Contraceptives	3	0.8
Total	396	100.0

As shown in Table 2, majority of study population (91.9%) believed that injections are meant for therapeutic purposes only; while a few also ascribed for immunizations (6.3%) followed by intravenous fluid (1.0%) and contraceptives administration (0.8%). On visit to the PHC, oral medications were given for 15.6% of individuals followed by both oral and parenteral medications for 23.1%; majority were given medications through parenteral route (61.3%) (Table 3)

**Table 3: Medication given at PHC for the current illness**

Medication given	Frequency	Percentage (%)
Oral	62	15.6
Parenteral	243	61.3
Both	91	23.1
Total	396	100.0

On asking whether oral medications were sufficient for the treatment, majority (70.0%) had given a negative response; only 25% said yes and remaining were not able given any opinion.

**Table 4: Did you prefer for injections**

Preferring injections	Frequency	Percentage (%)
Yes	199	59.6
No	103	30.8
Not sure	32	9.6
Total	334	100.0

**Table 5: Reasons for preference of injection**

Reasons for preference of injection	Frequency	Percentage (%)
Faster cure	110	47.7
Cost-effective	91	39.4
Often forget to take oral medications	23	9.9
Habit/ customary	2	0.9
Others	5	2.1
Total	231	100.0

Among those who were either given a parenteral medication or both (n=334), around 59.6% preferred injections over oral medications (Table 4). The reason for preference was enquired among those who either preferred injection or were not sure (n=231); majority opined it for faster cure by injections (47.7%), and around 39.4% felt injections are cost-effective compared to oral medication in curing the diseases (Table 5).

## V. Discussion

A safe injection is the one which does no harm to the recipient, does not expose the healthcare worker to any risk, and does not result in waste that puts the community at risk.<sup>[6,7]</sup> Healthcare workers when dealing with patients coming for consultation should as far as possible try to avoid unnecessary use of injections. However health workers believe that patients want injection, and if injections are not provided during consultation, they may seek service elsewhere.<sup>[6-12]</sup>

In many countries, including India, therapeutic injections are provided in the formal sector by trained, allopathic healthcare practitioners such as doctors, nurses and others, and in the informal sector where (allopathic) injections are given by non-allopathic practitioners including traditional healers.<sup>[13-22]</sup> Usually in rural areas of India practitioners from the informal sector are usually the first choices when people are ill, as they are more accessible and affordable compared to those from the formal sector.<sup>[23]</sup> From the healthcare workers/ doctors perspective injections often involve an extra fee which is regarded as an incentive along with regular consultation fee.<sup>[24]</sup>

### **Medications at home:**

In our study more than half of the study population (58.1%) had tried medications at home before coming to the hospital. Because of the availability of over-the-counter medications people tend to try these self-medications at home for few days and then, when symptoms are not relieved they come for consultation to PHC. In our study the median (IQR) duration of this delay in seeking health care was found to be 3 (IQR: 2 - 5) days. Hence a person coming after this initial delay will invariably have a progressed diseased state which necessitates administering parenteral medications for treatment.

### **Preference for injections:**

The Safe Injection Global Network (SIGN) initial meeting report, October 4-5, 1999, WHO headquarters, Geneva, Switzerland, gives an injection preference rate of 73.8% (95%CI: 72.5-75.1) and reasons for preference cited are quick relief, more effective method of illness treatment.<sup>[5]</sup> Compared to this, though a smaller preference rate (63.1%) for injections was noted in our study population the major reason cited for preference remain the same i.e., faster cure in treating the diseases.

The study conducted by AzebZewdie et al in Ethiopia<sup>[25]</sup>, 42% of the patients preferred injection for their illness. Twenty three (31%) patients believed that injections were quicker acting than oral medications. Seventy five (37.5%) of the patients thought that injection was more effective than other dosage forms, while 83 (42.5%) said

injection and other dosage forms were equally effective. Similarly in the study conducted Kotwal A et al <sup>[26]</sup> the preference of the patients for injection was 30.8%. Most of them prefer oral medications over injection.

## **VI. Limitations Of The Study**

The present study was conducted in the rural field practice area of a medical college. A comparative multi-centric study to understand the rural-urban differences may also have to be done to assess the difference in the preference of injections over oral medication. Also informal healthcare providers or practioners of other systems of medicines who remain the major healthcare providers in the rural and remote areas were not approached in the present study.

## **VII. Conclusion**

The preference for injections is high in rural areas; expectations of dramatic cures from injections were the major reason for this practice.

## **VIII. Recommendations**

Information from multi-centric studies focussing on the need assessment can be helpful for health education, future programme and policy formulation. When equally effective oral formulations are available or the medication is not required at all healthcare providers have to constantly persuade patients not to prefer parenteral medications over oral therapy. Health education to the community should be given to increase the awareness about hazards related to injection/ parenteral therapy.

## **References**

- [1]. Zewdie A, Wabe NT. The prevalence of therapeutic injections in Ethiopia: from the patients and health care providers: *Gaziantep Med J* 2012;18(1):21-26
- [2]. Staa ALV, Hardon A. Injection practices in the developing world: results and recommendations from field studies in Uganda and Indonesia. WHO.
- [3]. Injection practices in India. *WHO South-East Asia Journal of Public Health* 2012;1(2):189-200
- [4]. KotwalA,PriyaR,Thakur R Gupta V, Kotwal J, Seth T. Injection practices in a metropolis of north India: perceptions, determinants and issues of safety. *Indian J Med Sci*; 2004;58(8): 334-344
- [5]. WHO Fact Sheet No.231[Internet]. Safety of injections. 2002. [cited 2014 September]. Available from: <http://www.who.int/infs/en/fact231.html>
- [6]. World Health Organization. Safe Injection Global Network (SIGN) initial meeting report, October 4-5, 1999, WHO headquarters, Geneva, Switzerland. Geneva: WHO, 2000.
- [7]. Kermod M. Unsafe injections in low income countries health setting: need for injection safety promotion to prevent the spread of blood-borne viruses. *Health PromotInt* 2004;19(1):95-103.
- [8]. Birungi H. Injections and self-help: risk and trust in Ugandan health care. *SocSci Med* 1998;47(10):1455-62.
- [9]. Reeler AV. Anthropological perspectives on injections: a review. *Bull World Health Organ* 2000;78(1):135-43.
- [10]. Hogenboom van Buggenum I, Kistemaker A. and Ronner E. Injections in Indonesia. In: Wolffers, I. and Bloem, M. (eds) *The Impact of Injections on Daily Medical Practice*. VU University Press, Amsterdam, 1993.p.49.
- [11]. Wyatt HV. Injections and AIDS. *Trop Doct* 1986;16(3):97-8.
- [12]. Vong S, Perz JF, Sok S, Som S, Goldstein S, Hutin Y, et al. Rapid assessment of injection practices in Cambodia, 2002. *BMC Public Health* 2005;5:56.
- [13]. Vong S. et al. Rapid assessment of Injection Practices in Cambodia, 2002,” *BioMed Central Public Health* Vol. 5 (2005); 1471-1476.
- [14]. Reeler AV. Anthropological perspectives on injections: a review. *Bull World Health Organ* 2000; 78:135-43.
- [15]. Khare RS. Dava, daktar, and dua: Anthropology of practiced medicine in India. *SocSci Med* 1996;4:837-48.
- [16]. Lambert H. Popular therapeutics and medical preferences in rural north India. *Lancet* 1996; 348 : 1706-9.
- [17]. deZoysa I, Bhandari N, Akhtari N, Bhan MJ. Careseeking for illness in young infants in an urban slum in India. *SocSci Med* 1998; 47 : 2101-11.
- [18]. Misra R, Chatterjee R, Rao S. *India Health Report*. 2003. Oxford University Press, New Delhi. Alexander, C. & M.K. Shivaswamy, 1971 *Traditional Healers in a Region in Mysore State, India*. *Social Science and Medicine* Vol. 5: 595-601.
- [19]. Bhatia, J.C., DharamVir et al. 1975 *Traditional Healers and Modern Medicine*. *Social Science and Medicine* Vol. 9: 15-21.
- [20]. Nichter, M.. 1980 *The Layperson's Perception of Medicine as Perspective into the Utilization of Multiple Therapy Systems in the Indian Context*. *Social Science and Medicine* Vol. 14B: 225-233.
- [21]. Burghart, R. 1988 *Penicillin: An Ancient Ayurvedic Medicine*. In: S. Van der Geest& S.R. Whyte (eds.): *The Context of Medicines in Developing Countries*. *Studies in PharmaceuticalAnthropology*. Dordrecht: Kluwer Academic Publishers, pp. 289-297.
- [22]. Greenhalgh, T. 1987 *Drug Prescription and Self-Medication in India: An Exploratory Survey*. *SocialScience and Medicine* Vol. 25 (3): 307-318.
- [23]. Hutin Y. Acting upon evidence: Progress towards the elimination of unsafe injection practices in India. *Indian Pediatr* 2005; 42 : 111-5.
- [24]. Janua, Naveed et al. “Injection Use in Two Districts of Pakistan: Implications for Disease Prevention,” *International Journal for Quality in Health Care* Vol. 17 No. 5 (2005); 401-408.