ISSN: 2320 - 4230

Journal of Drug Discovery and Therapeutics 1 (5) 2013, 48-53

RESEARCH ARTICLE

STUDY TO EVALUATE PRESCRIPTION PATTERNS AND KNOWLEDGE ABOUT COMMON ALLOPATHIC DRUGS AMONG UNQUALIFIED RURAL MEDICAL PRACTITIONERS

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ABSTRACT

AIMS AND OBJECTIVES: To evaluate the prescription patterns and knowledge about common allopathic drugs among the unqualified rural medical practitioners in Pinjore block of Panchkula district, Haryana

MATERIAL AND METHODS: A 19 items Questionnaire was prepared in Hindi and validated by conducting a small pilot study. Rural medical practitioners were interviewed to fill the same

RESULTS: 23.3% practitioners had some medical related training. 43.7% respondents attended 15-30 patients, 23.3% attended to 30-50 and 4% to 50-75 patients every day. Only 10.7% issued prescription slips to the patients. All but two rural health practitioners dispensed medicines. 96% were dispensing allopathic drugs. Most common drugs used were analgesics (80%) and antibiotics (15.5%). Paracetamol was the most commonly used analgesic (49.5%). Only 55% answered correctly the precautions for analgesic use. Nearly half had heard the term antibiotic resistance, only 7% could tell steps to prevent antibiotic resistance correctly. 25% respondents agreed giving steroids to >25% patients. Only 20% could answer correctly the important adverse effects of steroids.

CONCLUSION: Illegal use of prescription only drugs without adequate knowledge is very common among unqualified rural medical practitioners, which could be an important contributor to antibiotic resistance and other drug related adverse events in the general population

KEY WORDS: Unqualified, Rural, Medical practitioners, Analgesics, Antibiotics, Steroids

INTRODUCTION:

Nearly 2 billion people (a third of the world's population) lack access to essential medicines.[1] India is a large country of over 1 billion people. More than two third of whom live in rural areas. Government health policies and funding in rural areas mostly is directed towards the preventive health with curative health getting ignored. There is a huge gap in curative health at the level of rural and urban slum areas. Evidence of this is that drugs and medicines form a substantial portion of the out-of-pocket spending on health by households in India. Total out of pocket expenditure on health, expense on drugs is estimated to be nearly 83% in rural India, and 77% in urban India.[2]

This curative health gap is filled by the unqualified medical practitioners who have mushroomed in rural, semi urban and urban slum areas. These private practitioners call themselves 'RMPs' or Registered Medical Practitioners, a title which is reserved for doctors who are registered with state or union councils. Many of them have certificates from unrecognized institutes or streams of treatment like electropathy etc. They are also famously mentioned as rural health practitioners, unqualified medical practioners or simply quacks. They are known to use intravenous fluids, antibiotics, steroids, give dental treatment, treat infants, set fractures, and also treat arthritis, tuberculosis, sexually transmitted diseases and sexual problems, for none of which they have any competence or qualification. These private health care givers are handling majority of cases seeking health care in rural areas. [3]

According to Indian law, every medical practitioner is required to be registered in a State Register. These Registers are provided under the respective State Enactment. For any individual to practice modern medicine in any part of India two preconditions are necessary: (i) S/he must possess a qualification mentioned in one of the three Schedules listed in the Central Act; (ii) S/he must get himself registered under any of the State Acts.[4]

In case titled Poonam Verma vs Ashwin Patel (AIR 1996 SC 2111) The Hon'ble Supreme Court of India has given a definition of a quack as "A person who does not have knowledge of a particular system of medicine but practices in that system is a Quack and a mere pretender to medical knowledge or to put it differently a chariatan."

Public health experts in India now advocate a new three years course for rural health for rural health practitioners. This has met with stiff resistance from various organizations. So they now advocate training for already existing unqualified health practioners.[5]

Every time an antibiotic is used whether appropriately or not, in human beings or in animals the

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probability of the development and spread of antibiotic-resistant bacteria is increased.[6] There is now better awareness regarding the emerging resistance problems due to antibiotic misuse, but glucocorticoid misuse also causes multiple serious side-effects such as cataracts, diabetes, hypertension, fractures and also life threatening hypoadrenal crisis. Most misuse is due to the easy availability of the drug over the counter and a lack of awareness of the side-effects by both the patient and the prescriber.[7]

Also there is an issue of quality of drugs. Since most of rural health practioners charge only for the drugs, there are chances that they dispense only those drugs which get them the biggest cut. They may be inclined to using low quality and fake drugs. Pharmaceutical companies woo these practitioners with free samples of their products, since they constitute a large source for prescription and use of their products.[3] According to National family health survey third report there are at least two rural health practitioners in every village in Ambala district of Haryana state.[8] Similar situation is expected to be present in other districts also.

The present study was undertaken to establish the profile of rural health practitioners in Panchkula district of Haryana. This study was intended to find out the types of drugs used by them with focus on the use of antibiotics, injectables, steroids etc. This study also asked leading questions to test the knowledge about adverse effects and precaution to use these drugs. This was done to establish the risk being posed by these unqualified persons to the health of innocent public. Big concern is there in the minds of administrators about the blatant misuse of steroids by the rural untrained doctors. This notion was also put to test by asking these health practitioners about the use of steroids.

MATERIALS AND METHODS:

A questionnaire was prepared in Hindi and was validated by conducting a small pilot study in same population. The questionnaire was then filled by personal interview. MBBS and BDS doctors were not included in the study. Help was taken from a retired health supervisor of Haryana health department who had served in that area for considerable period. Training was given to him on how to fill the form.

STATISTICAL ANALYSIS:

The results were expressed as number (%). Categorical variables were analyzed using Chi Square test. P value of <0.05 was considered statistically significant. Statistical analysis was done using SPSS version 17.

RESULTS:

104 rural health practioners were contacted out of which one refused to answer the questionnaire. Hence, 103 responses were taken for final assessment.

Profile of the unqualified medical practitioner - Table 1 describes the profile of rural doctors. Sixty five percent of rural doctors were not even graduates. 23.3% had some medical related degree or diploma. These included diploma in laboratory technology, diploma of health worker, degree in Indian systems of medicine, pharmacy degree or diploma, degree in basic sciences. 10.7 % were graduates in non medical subjects. One of the doctors was not even matriculate.

Practices - None of the doctors had any inpatient facility. **Figure 1** describes the practices of rural medical practitioner regarding drug use. Almost ninety percent of respondents did not issue prescription slips to the patients. 98% dispensed drugs.

Prescribing patterns - 84.5% practitioners were dispensing allopathic and ayurvedic (traditional Indian system) types of drugs. Only 4% were using only ayurvedic drugs. Nearly 80% said most commons drugs they used were analgesics. 15.5% used antibiotics as most common drugs and five percent had antacids as most common drug used. More than 60 percent rural doctors gave three or more drugs to their patients. (**Table3)**

Analgesic practices - Unqualified rural health practitioners dispensed paracetamol as most common analgesic (49.5%). They were asked what precautions should be taken before taking the analgesics. Not to be taken empty stomach was taken as right answer. Nearly half of them either didn't answer or gave a wrong one. 55% answered correctly.

Antibiotic practices – Antibiotics were the second most common drugs dispensed. On asking about antibiotic resistance, about half of the practitioners told that they have heard the term antibiotic resistance. It does not necessarily mean that they understood the term. To check the actual knowledge they were asked to enumerate few steps to prevent antibiotic resistance. Using antibiotic sparingly and completing the full course whenever prescribed was taken as the right answer. This was answered correctly by only seven percent of the respondents. (**Table 4)**

Use of injectables and vitamins – Eighty percent of respondents told that they use injectables in less than one fourth of patients. This was in contrast to a popular perception that doctors giving more injection are famous in rural areas of India.

80 percent of rural health practitioners said they give vitamin supplements to less than 50% of their patients, only 3(2.9%) gave vitamins to more than 80% of

their patients and 14 (13.6%) were dispensing to 50 to 79% of patients.

Practices for Steroid use - 25% of respondents agreed giving steroids to more than 25% of their patients which is much more than the general practice of qualified doctors. Many of these doctors gave anabolic steroid injections to the older population under the perception to increase power. Respondents were asked whether they have knowledge about the adverse effects of steroids given over longer periods of time. 62% claimed they know the adverse effects of steroids but when asked to enumerate one or two adverse effects only 20 percent could answer correctly. Most common responses were weakening of bones, inability to fight infections.

We compared the presence of knowledge of prevention of antibiotic resistance and precaution of analgesic use across different levels of education. For prevention of antibiotic resistance, difference between non graduates and graduates was found to be statistically significant ($p<0.001$) while no significant difference was observed in analgesic prescribing knowledge according to the level of education.

Cross tabulation of number of years in practice was done to the knowledge of antibiotic resistance prevention. The difference between rural doctors with less than 5 years of experience and more than 5 years of experience was found to be not significant. Ironically all rural doctors with more than 15 years of experience also answered the question wrongly. Cross tabulation of no of years in practice to knowledge of precaution in analgesic use the difference between less than five years and higher number of years was found to be not significant.

Cross tabulation of level of education to knowledge of steroid adverse effects was done. No significant difference was observed in the knowledge in accordance with the level of education. No significant difference was also there between those with any medical graduation to non medical graduates. There was also no significant difference between various years of experience to the knowledge of common adverse effects of steroids.

Table 1: Profile of the rural health practitioner

Education	**Matriculation /Secondary**	**Some medical related training**	**Nonmedical Graduation**	**<Matriculation**
	67(65%)	24(23.3%)	11(10.7%)	1(1%)
No. of practice years	**<5 yrs.**	**6-10 yrs**	**11-15 yrs**	**>15 yrs**
	24(23.3%)	45(43.7%)	24(23.3%)	10(9.7%)
Daily OPD Patients/day	**<15**	**16-30**	**31-50**	**51-75**
	29(28.2%)	46(44.7%)	24(23.3%)	4(3.9%)

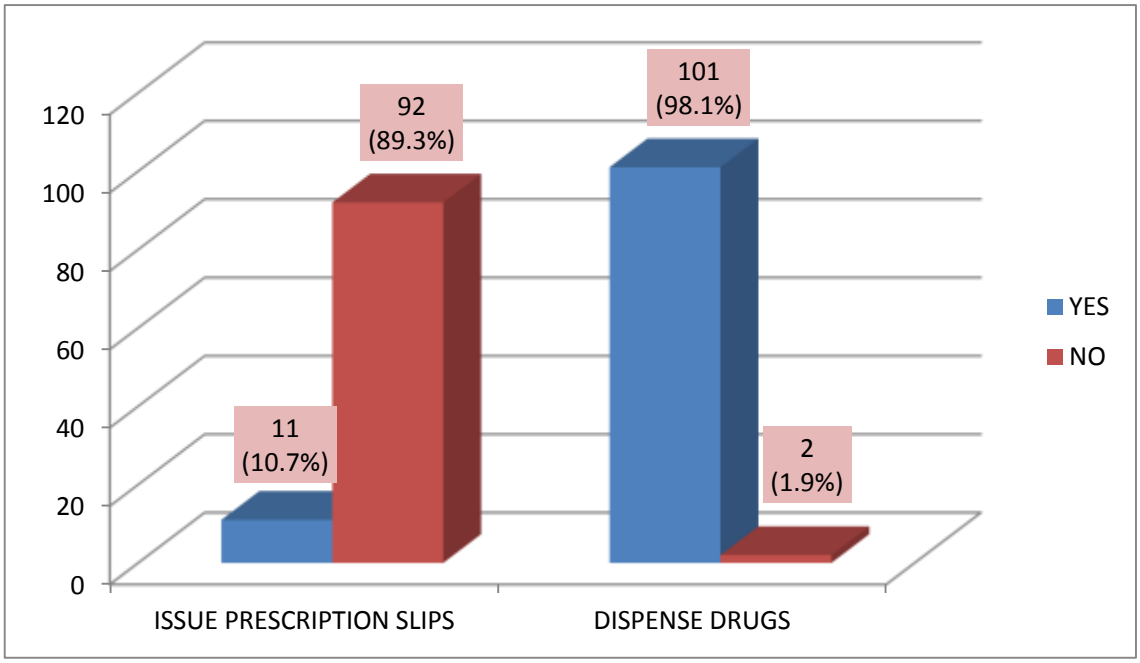

Figure 1: Practices of the rural health practitioner

Table 2: Prescribing patterns of rural doctors

Medicine type	**Only Allopathic**	**Only Indian**	**Both**
	12(11.7)	4(3.9)	87(84.5)
Most common drug prescribed	**Analgesic**	**Antacid**	**Antibiotic**
	82(79.6)	5(4.9)	16(15.5)
Number of Drugs/ Patient	**One**	**Two**	**Three**
	3(2.9)	37(35.9)	63(61.2)

Table 3: Antibiotic practice and knowledge

Heard about antibiotic resistance	**Yes**	**No**
	51(49.5%)	52(50.5)
Knowledge of Measures to prevent antibiotic resistance	**Correct**	**In correct**
	7(6.8%)	96(93.2)

DISCUSSION:

Panchkula is a relatively smaller and more urbanized district of Haryana and India with an easy access to both public and quality private health facilities. Still the numbers of patients visiting the unqualified doctors is similar to other parts of country. Even there is very little difference in the practices of the RMPs compared to other parts of country.[9]

In a study in Andhra Pradesh about 22 percent of RMPs were with degree or above qualifications and 40 percent were with 12 years of education. Only 4 percent of them had less than secondary school education. The high level of education among the RMPs is mainly due to part-time working of a good number of poor students in the hospitals and clinics while in the junior and degree colleges. About 40 percent of RMPs in the towns and Mandal HQs were graduates. In contrast only about 14 percent of RMPs were graduates in the villages.[9]

In a study in the Ballabhgarh area of Haryana the average number of patients seen per day by private rural health practitioners was much higher than the two PHCs in the area (1520 vs 120) demonstrating that private rural health practitioners cater for most of the patients in rural area.[10] In present study if we take even the lower end of the range, patients seen by the 103 unqualified practitioners is 2119 daily.

Only 10.7% doctors practicing in rural areas issued prescription slips. Hence, it is difficult to check which drug was given to the patients as the drugs are usually dispensed without slips. Prescription slips include much more information than merely the names of medicine. Rural doctors clearly don't know the importance of the same or they are doing it on purpose to escape the prosecution. All but two doctors dispensed their own medicines.

Since these doctors do not have any consultation charges and very few of them have laboratories, dispensing the medicines is the only chargeable activity they perform but charges usually are not fixed. Different patients are charged differently depending upon various factors mainly socioeconomic status of the patient. Thus not issuing prescription slip serves dual purpose one of income and also maintains secrecy.

Two third of the respondents were dispensing more drugs per patients than the WHO prescribing standards of two per prescription.[11] It amounts to irrational prescribing.

Most common drugs used by the rural health practitioners were analgesics. Of the analgesics paracetamol was the most commonly used which is an over the counter drug and was used by 49.5 % doctors. Rest used either Diclofenac or a combination of paracetamol and ibuprofen. More than half of the respondents agreed to dispense schedule H analgesics to the patients. The United States Food and Drug Administration now require that all OTC analgesics carry explicit warnings about the risk of bleeding (NSAIDs) or liver injury (acetaminophen). It is not a requirement yet in India. This also shows the level of patients that come to these doctors. People visit them for the routine illnesses mostly. Various studies in India and other developing countries have shown that the public first visit the nearest small doctor when not relieved than they travel to nearest town or city.[12]

When *E. coli* was taken as model to study antibiotic resistance in Tamilnadu over half of the stool *E. coli* samples of primary school students were resistant to ≥1 antibiotics and one third were MDR, study also found high levels of antimicrobial resistance to nalidixic acid, ampicillin, cotrimoxazole, and tetracycline.[13]

Both polypharmacy and overuse of injections are part of irrational use of drugs and they are inseparable. In a recent survey in Haryana large number of HCV infected cases were diagnosed and were linked with faulty injection

practices of rural health practioners which is just a tip of iceberg. In a large study in rural china village doctors with full-time medicine education were less likely to prescribe injection for their patients.[14]

In a correspondence to Indian pediatric journal V Raveenthiran gives account of seeing atleast one case every week with cushingoid appearance with recurrent infections and severely atrophied adrenals due to injudicious chronic use of steroids provided by quacks in the rural areas of Tamilnadu.[15]

This study reiterates the fact that there is huge need of curative health services at the primary health care level. The people who are filling the gap are not really the one who should be there. Some public health personnel do take help of RMPs in the public health programs because public does like to consult them for health related decision making. Various studies have dwelled in to the reason of public visiting these medical practitioners. Availability, affordability, accessibility and reliability of health care facilities decide the first visit in cases of illness. Easy availability, convenience, low expense and frequent visits to household members are the main reasons behind the high dependency on quacks. Distance to health facilities coupled with poor transportation resulted in low use of health care facilities.[16] There was statistically no significant difference in the knowledge of these practitioners on the basis of their educational qualification and number of years in practice.

CONCLUSION:

Practices of unqualified health practitioners and the rural population in more affluent district are similar to other parts of the country. Stringent laws and more importantly stricter implementation are required so that unsuspecting public can be saved from these practitioners. But it is not possible to remove them from the scene and clearly they are filling up the gap as qualified doctors are not willing to practice in rural areas. In that case training should be imparted to them and they should be encouraged to refer the patients promptly when desirable.

Funding: No funding sources

Conflicts of interest: None declared

Ethical considerations: Respondents were given written assurance that secrecy of data will be maintained and the material will be used only for study purpose and not for prosecution.

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