ABSTRACT: Objective: Half the family spending on health care services in India is on superfluous drugs or diagnostic tests. Polypharmacology, promoting both medication misuse and abuse, is presently an entrenched feature of today’s healthcare system. This review focuses on the extent of misuse and explains the underlying factors leading to it. Methods: This review was conducted by analyzing relevant articles published after 2000, which included topics on drug use and misuse in India. Articles, case reports etc dealing with substance abuse were excluded. 50 articles were acceptable and were included. Results: The literature shows that India has widespread medication misuse. The factors influencing this misuse involve all levels of the health care system including regulation, enforcement and policy, patients, pharmacist, medical practitioners, and hospital management. Conclusion: This review explains the widespread nature of the problem and also gives a complete picture of factors leading to medication misuse in India. Medication usage, the knowledge, attitudes and behaviors of medical practitioners, pharmaceutical providers and consumers are studied. It appears that the health system in India is worsening, thereby warranting urgent action.

KEYWORDS: Medication abuse, India's misuse, Polypharmacology, Superfluous drugs.

INTRODUCTION:

The weakness of pharmaceutical regulatory environment in India has add an adverse impact on the health conditions of Indians. This has lead to easy accessibility to various medications and excess medicines throughout the country. Moreover minimal knowledge regarding medication safety has further worsened the situation. This in turn, leads to poor health condition, high antibiotic resistance and greater financial burden to the community.

The unregulated availability and increased consumption of medications in India has been a major concern to both government and non-government public health organizations. India’s essential medicine list covers only 348 drugs but around 60000–80000 drugs are available under different trade names. This encourages needless prescription and promotes compulsive consumption habits. There are multiple reasons contributing towards the extensive use of medications. Among these reasons, supply-side components (government policy, corporate interests and provider features) and aggregate demand factor influences are of pivotal importance. This review discuss in detail about the severity of medication misuse in India and its contributing factors.

METHODS:

- Literatures were being searched on PubMed.
- The search terms used were India, medication, Asia, overuse, misuse, prevalence, polypharmacy.

Inclusion Criteria:

- Original research articles published after 2000.
- Studies based in India.

Exclusion Criteria:

1. Articles, case reports etc. dealing with substance abuse were excluded.

RESULTS:

Research methods used in the articles included medical record and/or prescription review, interviews, focus group discussions, household survey, physical examination, testing of pharmaceuticals, review of drug labeling, investigation of staff reported adverse drug reactions (ADRs). The medications examined in the literature include anti-microbial, psychiatric drugs, antihyperglycaemics, corticosteroids, ophthalmology medicines and over-the-counter medications. Various investigations were conducted which focused towards the inspection of self-administered drugs while a few investigation concentrated on ADRs.

Factors aggravating misuse:

The reasons for improper medication and overuse of medicines depend on the personnel involved in the supply of pharmaceuticals, especially the hospital management, drug specialists, pharmacists and patients. Within the society, a number health related factors were found to promote misuse of medication and health care services/facilities.

Health system factors and regulatory failures:

The articles revealed an array of health system failures that influence the misuse of medications in India. Several factors were involved such as dependence on unqualified health professionals, uncontrolled distribution of drugs and suboptimal implementation of regulations. Moreover, political instability and weak regulations favours the oversupply and misuse. Recent reports also suggest that the use and availability of a large number of
medications is affected by the distribution network. 15.

Health care providers related factors:
A number of factors were found to influence prescribing practices of healthcare providers to misuse medications. The common errors discovered during prescription audits were not including the frequency and duration of dosage and usage of only brand names on prescriptions. Such neglect demonstrates poor prescribing practices of physicians.16-18. Also, many medical practitioners lack the skill to educate the patients regarding how to use the medications.19. This is particularly true when devices are involved. Doctors rarely instruct the pharmacists to demonstrate the use of inhalers.

Other factors involved are inefficient time management,20 diagnostic uncertainty21 and lack of access to modern medical facilities such as laboratories and equipments. Moreover, prescriptions are written in such a way that expensive medicines are prescribed more frequently, which would increase the revenue and profits of pharmaceutical industries. Sometimes, less appropriate medicines are prescribed because costly medicines bring more profits to the healthcare providers. Such unnecessary expenditure becomes unaffordable to most Indians.22.

The above scenario is reflected even in the case of antibiotics where most of the private practitioners make profits from prescribing expensive broad spectrum antibiotics.23 All these reflect the lack of proper education and training among practitioners which leads to poor prescribing practices. Persuasive influence of medical representatives24 also adversely affect physicians’ prescription pattern.

Pharmacist-related factors:
Dispensing medications to consumers without a prescription is another factor leading to medication misuse. Studies reveal that people often visit pharmacists requesting self-medication25. Even though pharmacists lack training in diagnosis and prescribing medications, they often respond to their consumers’ request by dispensing medications according to signs and symptoms.26-30. Pharmacists are unsuccessful in guiding patients about proper use of antibiotics21 and the reason behind it include poor time management and lack of knowledge.25.

Patient-related factors:
The patients also exhibit high levels of non-compliance.33 Factors leading to non-compliance include poor knowledge regarding medication24,36 superstitious beliefs about the diseases financial difficulties and unbalanced family life.37

Patients sometimes force the physicians to prescribe antibiotics inappropriately, hoping for fast recovery.38. Patients sometimes avoid expensive diagnostic tests and often request for more prescribed medicines. This shows the reluctance of patients to return back to hospital.39.

Prevalence of medication abuse:
Another concern is antibiotic misuse. In an investigation conducted by Chandy et al.,40, outpatients in Vellore were exposed to antibiotic overuse. Recent studies reveal that many pharmacists dispense antibiotic without proper prescription. In Salunkhe et al.’s study, 94.65% of pharmacies dispense antibiotics for minor ailments without prescription.41-45. A high degree of polypharmacy was observed in both outpatient and household studies.46-47.

DISCUSSION:
This review explores the multiple factors influencing the misuse of pharmaceuticals in India. Medication misuse is common everywhere in India. By inspecting the influences on healthcare providers, pharmacists and patients, this review discusses the determinants of medication misuse and provides insight into the absence of effective regulation, lack of training on proper medication use and the risks associated with improper use.48

Nowadays, the culture of blame-shifting is common. For example pharmacists blaming the poor manner of prescription of doctors and doctors blaming the pharmacists for improper dispensing.49-50

Limitations of this study:
Despite the fact that over 50 articles reviewed, most papers only evaluated medication utilization rather than accessing how proper it was.

CONCLUSION:
Addressing medication overuse in Indian health system has become urgent matter for improving healthcare standards. The government and the regulatory bodies need to encourage a purposeful dialogue between patients, pharmacist, medical practitioners, and hospital management to understand and resolve the issue of misuse. Patients, health providers, pharmacists and the public need to be informed about the misuse and oversupply of antibiotics. Further investigation should be carried out to explore constructive strategies in order to bring down medication overuse and misuse.

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