PROBLEMS REGARDING POLYPHARMACY IN ELDERLY IN INDIAN POPULATION

ABSTRACT:

Among the general population various international studies have shown that poly pharmacy is common in the older adults but the maximum number of drugs were taken by those adults who were residing in nursing homes. It has also be shown that nearly half of the older adult population take one or more medications that are not medically necessary as per their conditions. According to various research it has been clearly established that there is a strong association between multiple drug use and negative clinical consequences. In addition to that, conducting well-designed inter-professional intervention studies, which often include clinical pharmacists, that focus on enrolling high-risk older patients taking multiple medications with mixed results on distal health outcomes can improve the effectiveness of enhancing the overall quality of prescribing medications.

It is critical to do research on poly pharmacy in a nation like India or other low to medium income countries. Poly pharmacy is induced by a multitude of variables at the levels of health-seeking, prescription, distribution, and usage. Society-based issues such as a lack of education and access to adequate healthcare in both rural and urban regions, as well as a general lack of health knowledge and passion, further aggravate the situation.

Poly pharmacy is a key challenge in senior care. The senior population frequently has several medical diseases and may possibly suffer from cancer, which necessitates the use of multiple drugs for therapy. Multiple drugs used by an aged person can increase the likelihood of drug-drug interactions, noncompliance with the prescription, adverse drug responses, and reduced patient compliance.

Keywords: poly pharmacy, multiple medications, medical diseases

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INTRODUCTION:

As the age of an individual increases the dependency on drugs also increases. There is widespread presence of chronic diseases in elderly population for which there are indications to use more than one drug. The administration of five or more drugs, including prescription, over-the-counter, and complementary drugs by an individual is usually referred to as polypharmacy(1).

Polypharmacy is a major concern in the care of the elderly. The elderly population usually over the age of 65 often has several medical conditions and may also suffer from cancer, due to which there is prescription of multiple medications for treatment. Multiple medications consumed by the elderly individual can increase the chances of having drug-drug interactions, non-compliance to the multiple drug prescription, adverse drug reactions and also reduces compliance from the side of the patient(2).

According to a recent research by Barnett et al., 64.9 percent of people aged 65 and up had a mean of 2.6 multi-morbidities, while 81.5 percent of those aged 85 and up had a mean of 3.62

long term diseases. Although multimorbidity increases with age, the Barnett research found that 30.4 percent of persons aged 45 to 64 years had two or more chronic diseases (mean of 1.18 morbidities), all of which may require medication therapy. As a result, polypharmacy is undoubtedly the new prescription paradigm, driven by multimorbidity and the abundance of evidence-based guidelines for the management of long-term diseases(3)

India is a country where majority of population belong to low-class or middle-class categories where the people are less concerned about their own health and more concerned about their daily earnings and livelihood to feed their families. Besides that, in India the patterns of prescriptions are not adequately monitored and the policies that govern prescription practices are either very few or not given much importance, documentation, and follow-up are also not complied in large quantities. Therefore, it is important in a country like India or other low to middle income countries to do research on polypharmacy in the overall community. Polypharmacy is caused by a variety of conditions at the health-seeking, prescription, distributing, and using levels. Society based problems such as lack of education and a lack of access to decent healthcare in rural as well as urban areas, and low health awareness among the general population along with less enthusiasm to do so further complicate the situation(4).

According to Sangeetha Balaji et al research, thirteen percent (n = 273) of those who said they only had one prescriber for a particular ailment were administered more than four drugs. The 5 illnesses with the most polypharmacy account for 14% of the study population (n = 303). In their investigation, they discovered various connections with polypharmacy that could explain its increase in levels. Polypharmacy was found to be substantially linked to people with a higher socioeconomic standing. This could be due to reasons such as financial capabilities, increased demand for medical services, or even a shift in prescriber perceptions in expectations of patients.

People above the age of 61 were more likely to be prescribed four or more medicines than those between the ages of twenty and sixty. The distribution of different regions of polypharmacy in Indian states ranged from 1% to 35% in the selected respondents. Illnesses with unclear symptoms, such as generalized weakness or lethargy or fatiguability, pain (not elsewhere specified), stomach distress (not elsewhere described), and generalised discomfort, were more likely to be treated with more than four medications.

Since the surety of the evidence was towards the lower side, therefore ,it was undetermined whether the interventions ameliorated the usefulness of drugs (based on scores assigned by expert professional judgement), decreased the number of potentially unwanted drugs (drugs in which the harmful effects of the drugs outweigh the beneficial effects of drugs), because the confidence of the evidence is very low, the proportion of patients with one or more possibly undesirable medicines was reduced, or the proportion of patients with one or more potential prescribing omissions (cases where a helpful prescription was not supplied) was reduced. The treatments may have little or no effect on hospital admissions or quality of life; however, they may have a little impact on the number of possible prescription omissions(5).

Chronic illnesses associated with advanced age, such as abnormal elevated levels or lipids or fats or cholesterol in the body, hypertension, diabetes mellitus, and depression or other psychological disorders, sometimes necessitate the administration of numerous medications. This refers to taking various drugs and/or taking more medications than is clinically necessary. Inappropriate prescriptions, along with medication misuse, poor quality of doctors' prescription choices, excessive administration of drugs, additional medications prescribed for

treating harmful effects, and below average doctor-patient relationships, may aggravate the risk of drug-drug interactions and adverse drug reactions(6).

Polypharmacy in the elderly has been linked to PIP and poor health outcomes including as a higher risk of hospitalizations, adverse medication events, and death(5).

Polypill therapy and frailty may be associated either ways, as frailty is linked to chronic diseases and multi morbidity, compelling general physician to prescribe multiple medications. There are several elements that may be considered clinical components or characteristics of frailty which are directly linked with the number of drugs taken, including weight loss, imbalance, generalized weakness, or functional deterioration.
Polypill treatment and frailty may be related in either direction, since frailty is linked to chronic illnesses and multimorbidity, requiring general practitioners to prescribe numerous medicines. There are numerous clinical components or features of frailty that are directly related to the amount of medications used, such as weight loss, imbalance, widespread weakness, or functional impairment. Patients with ischemic heart disease and respiratory disorders were more likely to be on polypills, which may be justified because their care necessitates the use of numerous drugs. However, the older and frailer the patient, the more likely they are to require multiple hospitalizations owing to a variety of morbidities. Medications used to manage blood pressure, muscular tiredness, cramps, and acid peptic illness, such as numerous antihypertensive medications, statins, and proton pump inhibitors, may be more dangerous for this group of older people(7).

BALANCING APPROPRIATE AND INAPPROPRIATE POLYPHARMACY

A Cochrane evaluation of therapies focusing on polypharmacy found no evidence to support how to attain proper polypharmacy. Furthermore, most studies lacked specifics about how treatments were created and what influenced their substance. More emphasis is being placed on how interventions are designed, particularly those seeking to change the conduct of health care providers. One such conduct is medicine prescribing, and understanding what can function as a barrier to, or promote, good polypharmacy prescribing may help inform the creation of effective intervention. A methodical approach should be taken, taking into account what changes should be done, what may act as an obstruction or catalyst to such change, how it may be accomplished through the use of appropriate steps, and assessing any difference that happens by reviewing possible results. This method was accomplished by using a tool called as the Theoretical Domains Framework (TDF). The TDF includes a variety of areas related to modifying the attitude of general practitioners such as 'Knowledge' and 'Skills. The TDF has two versions: the initial version had 12 domains and the most recent version has 14 domains. Knowing how these factors may affect attitudes allows us to evaluate how to effectively modify such attitude. Cadogan et al. used the 12-domain TDF to construct an intervention to promote the prescribing of suitable polypharmacy over a long period of time. Refer to the following table(8).

TABLE 1. BCT content and practical operationalisation of a GP-targeted intervention

BCT	Example of how the behaviour change technique will be operationalised as part of the intervention
Action planning	GPs will plan to perform medication reviews on the specified date when patients meeting inclusion criteria present at the practice for a scheduled appointment
Prompts and cues	GPs will be prompted by the receptionist/practice manager to perform medication reviews with older patients meeting inclusion criteria when patients present for a scheduled appointment
Modelling or demonstrating the behaviour	GPs will be provided with a video demonstration (using actors and a clinically authentic script) of how to perform a medication review with an older patient who is receiving polypharmacy
Salience of consequences	As part of the video demonstration of how to perform a medication review, feedback will be included from the GP and 'patient' to emphasise the potentially positive consequences of performing the review

DOMAINS INFLUENCING POLYPHARMACY

According to a study of Cadogan et al., except for thoughts and feelings, all of the categories were thought to be significant to the administering and dispensing of proper multi drug regime to elderly patients. Using the procedure mentioned previously, eight key areas were chosen to be aimed as part of a skilled project involving General Practitioners and/or community pharmacists: abilities, assumptions about functionalities, assumptions about repercussions, environmental factors and assets, cognition, awareness, and administrative mechanisms, role in society and individuality, social influence, and psychosocial factors. Thoughts and feelings were the least often addressed area, and it was not seen to have a significant impact on either group's clinical behaviour.

The research outcomes emphasize the types of theoretical areas thought to impact health care professional when administering and distributing proper multi drug regime to older adults in primary healthcare, as well as the complexity of the focused actions. There was significant agreement in terms of the important regions that were judged to influence the behaviours of both health care professionals groups, and a number of common behaviour change techniques were chosen for inclusion in a future intervention including general practitioners and / or community pharmacists. Selected behaviour change techniques serve as a framework for building a theory-based intervention to increase proper multi drug regime in primary care for older individuals. Future work will include constructing an intervention based on chosen behaviour change techniques for additional feasibility testing before launching a larger-scale trial evaluation(9-15).

SAFE PRESCRIPTION FOR ELDERLY

Multi drug regimes, along with the assessment of potentially inappropriate drugs, monitoring for drug-related issues, and underutilization of authorised prescriptions, should be regarded as part of safe prescribing practise. General practitioners who give drugs to elderly persons may find the following tips helpful(10):

- At each appointment, the elderly patient's meds should be reviewed. Motivate the elderly in bringing all the prescriptions to the visit (not just a list). In this method, inadvertent duplication caused by various suppliers, or generic vs brand names, is most easily found out.
- Examine the older adult's drug adherence.
- Instead of "noncompliance," consider financial restrictions, a lack of knowledge, and other explaining theories.
- Consider each new development of illness or complaint to be most probably a concern related to administration of drug and explore it accordingly.
- Examine the medications taken by the patient in the current situation, and make sure that every prescription is still prescribed.
- When contemplating a new medicine, utilize the Beers Criteria as a first guideline. If an alternative to a possibly unsuitable drug is available, utilise it.
- Examine existing drugs in light of the Beers Criteria. Take into consideration substituting a safer drug for one that is potentially improper.
- History should be taken carefully about over the counter drugs, ayurvedic supplements, and house treatments. These chemicals can have a substantial impact on how a prescription medication works.
- When it comes to doses, remember to start low and work your way up.
- Whenever feasible, get culture and sensitivity data before prescribing anti-infectives. In most circumstances, disregard the general guideline of starting with a lesser dose. Instead, take the standard adult dosage. Anti-malarial, such as quinolones, must be dose-adjusted to account for lower glomerular filtration rate. If feasible, look into therapy with a cure test.
- Consult with another healthcare expert on a frequent basis, ideally a pharmacist.
- The history of medication intake of your follow up patients should be reviewed carefully and make sure every medication has a corresponding diagnosis.

When working with elderly people, it is not always possible to follow all of the guidelines. Clinical discretion must be used at all times, and the comparison between the harmful effects and benefits of a medicine must be done in view of the specific elderly's circumstances.

Working with elderly patients is both gratifying and difficult. The changes in pharmacokinetics and pharmacodynamics caused by ageing place an increasing burden on the general practitioner who prescribes for this group. A general practitioner's understanding of the physiological demands of older patients, as well as the resources accessible to him or her, can assist enhance the quality of treatment for elderly patients.

CONCLUSION:

Locally designed and delivered educational programs need to be implemented that can improve the awareness of general care practitioners and beneficiaries such as elderly. Currently, polypharmacy, a common and important problem associated with drug use, occurs as a result of this multimorbidity in the elderly in all populations. Professionals can control the possible hazards of medication interactions and unfavourable drug interactions through prescribing, evaluating, and health education across the continuous spectrum of care for the elderly, i.e. through best practise. Educational programs designed and delivered locally that can raise awareness of general care professionals and beneficiaries such as the elderly should be implemented.

Undertaking well-designed inter-professional intervention studies, which frequently include clinical pharmacists, that focus on enrolling high-risk older patients taking multiple medications with mixed outcomes on distal health outcomes can improve the effectiveness of increasing the quality of medication prescribing.

One of the biggest drug safety issues today is ensuring medication safety in polypharmacy. There is a paucity of evidence-based treatments due to the conventional focus of medical research and health care delivery paradigms on therapies for a particular condition. Polypharmacy has traditionally been thought of as drug abuse, however it may be more instructive to look at it from a practicality standpoint, since there are numerous situations when the concurrent use of many medications might be deemed essential and beneficial. Polypharmacy will become increasingly common globally as the population ages and more individuals suffer from various long-term illnesses. As a result, governments should prioritise educating the public about the challenges associated with improper polypharmacy and the need of addressing these concerns.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors

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