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A Review on Assessment of the Prescription Pattern, Drug Interaction, and Quality of Life Associated with Polypharmacy among Geriatric Patients in Rural Household



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ABSTRACT

The escalating use of the prescribed drug has increasingly raised concern about Polypharmacy. Inappropriate Medication use (IMU) by elderly patients is a public health problem associated with adverse effects on health. Older patients often have numerous co-morbidities for which they are prescribed multiple medications, thereby increasing the risk of a Drug interaction. This risk is compounded by age-related changes in physiology and body composition, which influence drug handling and response several characteristics of aging, such as decreased renal function and altered fat and water distribution, as well as mental impairment. The quality of life in the elderly population can be affected by many environmental factors. This is a Prospective Observational Study conducted at the community (in Parassala location). In this study, we analyze the drug interaction and quality of life while taking polypharmacy in elderly people. Suitably designed Proforma is used to assess drug interaction. Polypharmacy was assessed using proforma and also through interviewing patients. Quality of life was assessed using the WHOBREF Questionnaire method. A total of 150 geriatric patients with polypharmacy fulfilling the study criteria are selected. From the prescription Pattern analysis, Antihypertensive and Proton Pump inhibitors are widely used in the prescription of geriatric patients with polypharmacy. Polypharmacy was assessed by using proforma. Drug interactions were also assessed using appropriate software such as Drugs.com. adequate prescription monitoring was done through the appropriate patient's interview. the quality-of-life was assessed by using WHOQOL- Brief Questionnaire method. In our study, we suggest that 52.6 % of patients, which is a higher percentage, were taking antihypertensive as per prescription pattern analysis. in the case of drug interaction, only 44.6% of geriatric patients were reported .in 17.91% of geriatric patients reported minor drug interaction. In quality of life, the domain score is categorized into very good, moderately good, and very poor. In QOL,25.3% were included in very poor, 22.7% in very good, 25.3% are in moderate poor and 26.7% are included in the moderate good category.



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INTRODUCTION:

Geriatric is the branch of general medicine concerned with the clinical, preventive, remedial, and social aspects of illness in the elderly. The term 'elderly' generally refers to patients aged 65 years or over. However, the physiological changes that occur with aging are progressive, occurring gradually over a lifetime rather than abruptly at any given chronological age, so the choice of 65 years is a relatively arbitrary one, & the definition is sometimes.

Elderly patients have multiple-choice conditions and take numerous medications. They need to be educated on their disease states and be aware of potential adverse effects & drug interaction. Consulting with their physicians and pharmacist & behavioral modifications are good places to start. Geriatric patients are at increased risk for drug interaction. The incidence of drug interaction in patients over age 65 is two or three times greater compared to younger patients. Factors that are responsible for the higher prevalence of ADRs in the geriatric population include polypharmacy, poor relationship with healthcare providers. Multiple disease states, increasing severity of illness, reduced drug elimination, and increased sensitivity to drug effects.

As a result of increased prevalence, older people tend to use more medications compared to younger people. Studies throughout the developed world have found a direct correlation between advancing age and the number of medications prescribed. E.g.: in Australia, people over the age of 65 comprise 12 percent of the population, yet 40 percent of all prescriptions dispensed are for this age group. Similar data have been reported from the United States and the United Kingdom.

The term Polypharmacy has been used to describe the prescription or use of multiple medications. Increasing the number of medications prescribed has been shown to independently increase the risk of adverse drug reactions (ADRs), and for this reason, unnecessary polypharmacy must be avoided. Another reason to avoid unnecessary polypharmacy is to minimize cost and enhance (the more medications a patient has to take, the poorer their compliance). However, this needs to be balanced against the fact that the use of multiple medications in elderly patients is sometimes unavoidable, and may be appropriate in cases where an older patient suffers from several coexisting medical conditions for which drug therapy has been proven to reduce morbidity and/or mortality.

Drug interactions are an increasingly important cause of adverse drug interactions and it is vital that pharmacists have a sound understanding of the issue. Today, with the increasing availability of complex therapeutic agents and widespread polypharmacy, the potential for drug interaction is enormous. Despite rigorous attempts to ensure that the safety profile of new medicines is as fully defined as possible at the time they are marketed, the potential for adverse interaction is not always evident.

An interaction is said to occur when the effects of one drug are changed by the presence of another drug, food, drink, or an environmental chemical agent. The net effect of the combination may be:

- Synergism or additive effect of one or more drugs
- Antagonism of the effect of one or more drugs
- Alteration of the effect of one or more drugs or the production of idiosyncratic effects.

In the present-day competitive environment, there is a concern that health care quality is being compromised in the rush to lower costs. This has resulted in the concept to focus the evaluation of health care on the assessment of results or outcomes associated with the health care.

There are different types of outcomes for drug interventions in health care. Rate of disease recurrence, rate of hospitalization, reduction in mortality are examples of parameters considered as evidence of drug efficacy. Doctors often depend on the manner in which the drugs influence various physiological functions to assess the efficacy of the drugs. Sometimes the physiological status may change without the patient feeling better. Drugs may ameliorate certain symptoms without a measurable change in physiological function. Sometimes prolonging life may be achieved at the expense of pain and suffering. There can be variations in the evaluation of different outcomes.

STUDY SITE:

The study was conducted at the Community pharmacy (Parassala location).

STUDY DESIGN:

Prospective Observational Study was conducted in elderly patients of age above 60 years from the Community Pharmacy, whose Prescription patterns were analyzed for polypharmacy and for the possible drug interaction after obtaining permission from the Institutional Ethical Committee.

STUDY DURATION:

The study was carried out for a period of 6 months after getting clearance from the Institution Ethical Committee of Sree Krishna College of Pharmacy and Research Centre.

SAMPLING STRATEGY

- **INCLUSION CRITERIA**

- Patients above 60 years.
- Patients willing to participate
- Patients who give informed consent.

- **EXCLUSION CRITERIA**

- Patients not ready to respond to the query
- Unconscious patients.



SAMPLE SIZE

150 Patients

STUDY PROCEDURE

This prospective observational study was intended to be carried out in elderly patients and the prescription pattern was analyzed for polypharmacy and possible drug interaction and quality of life. The target sample size was 150. This study was conducted after getting clearance from the Institutional Human Ethical Committee.

This study was conducted in elderly patients having age above 60 years and who are on polypharmacy and assessed for any drug interaction and quality of life after satisfying predefined inclusion and exclusion criteria. Prescription patterns were analyzed by using

suitably designed proforma. Drug interactions were assessed by using a Drug. Com software. Quality of life was assessed by WHOQOL-BREF Questionnaire method. Polypharmacy was assessed by using suitably designed proforma and by interviewing the patients.

DATA COLLECTION TOOLS

- Questionnaire to collect information about geriatric population
- Questionnaire to assess the quality of life

CONCLUSION

Geriatric Patients account for an ever-increasing proportion of health care expenditure. They are prone to toxicity and injury from multiple concomitant disease States and polypharmacy. Aging results in physiological changes which affect or alter the Pharmacokinetics of drugs. The chance for drug-drug interactions will get further increased by the use of multiple drugs. Adverse effects increased with the number of drugs used by the patients.

Our study demonstrated that out of 150 patients 52.6% were prescribed Antihypertensive, 41.3% of patients were prescribed with proton pump inhibitors 40.6% of patients were prescribed Antidiabetics 32.6% were given Antiplatelet and others was observed. In 7.6% have the major type of drug interaction and 12.9% observed as a minor type of drug interaction.

In Quality of life, from the study we concluded that 25.3% were included in the very poor category of the domain, 22.7% are in very good, 25.3 % in moderate poor, and 26.7 % are in the moderate good category.

The study includes evaluating the appropriateness of prescription and assessing the quality of life, assessing patient's physical conditions and drug interactions in polypharmacy. The major limitations of this study were that due to lack of cooperation of some patients made it difficult to gather information required for completing the study. Another one was the inadequate time period for completing the study, which affected the accuracy of the result to some extent. Another limitation of the study was that the patients were not able to categorize equally based on gender.

We found that polypharmacy was associated with a higher symptom burden and worse quality of life in adults with a life-limiting illness. Areas for future research include

developing deprescribing strategies to reduce the use of inappropriate medications in patients with limited life expectancies. Implementing and prospectively evaluating such strategies may help to determine the direction of associations between polypharmacy, symptoms burden, and quality of life and improve patient-centered outcomes in this vulnerable population.

REFERENCES

1. Walker, Roger, Cate, and Whittlesea. Clinical pharmacy and therapeutics. Edinburgh: Churchill Livingstone, 2007:149-158.
2. Dipro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey L M. Pharmacotherapy: a pathophysiologic approach. 8th ed. Columbus (OH): McGraw-Hill; 2012:79-85.
3. R. R. Miller, "History of clinical pharmacy and clinical pharmacology," *The Journal of Clinical Pharmacology*, vol. 21, no. 4, pp. 195–197, 1981.
4. K. N. Barker and J. G. Valentino, "On a political and legal foundation for clinical pharmacy practice," *Journal of the American Pharmaceutical Association (1961)*, vol. 12, no. 5, pp. 202–237, 1972.
5. N. Barber, "Towards a philosophy of clinical pharmacy," *Pharmaceutical Journal*, vol. 257, pp. 289–291, 1999.
6. Harrison's principles of the internal medicine 19th edition. New York: The McGraw-Hill Companies, Inc.; 2015:188-190.
7. Cahir C, Fahey T, Teeling M, et al. A national population study. *British Journal of Clinical Pharmacology*. 2010;69(5):543-552.
8. G Parthasarathy A Text Book Of Clinical Pharmacy Practice 2nd edition 123-129.

