



AMERICAN JOURNAL OF ADVANCES IN NURSING RESEARCH



Journal homepage: www.mcmed.us/journal/ajanr

POLYPHARMACY IN CLINICAL PRACTICE: NURSE'S OPINION, A CROSS-SECTIONAL QUESTIONNAIRE STUDY IN A TERTIARY CARE CENTRE

Manu G^{1*}, Madhav K Savkar², Deepika G³, Suparna Podder⁴

¹Assistant Professor, ²Professor, ³Postgraduate, ⁴Lecturer, Department of Pharmacology, Adichunchanagiri Institute of Medical Sciences & Research Institute, B G Nagar, Nagamangala Taluk, Mandya - 571448, Karnataka, India.

Article Info

Received 25/06/2015

Revised 15/07/2015

Accepted 17/08/2015

Key words:

Polypharmacy, Nurses,
Prescription,
Medication.

ABSTRACT

Polypharmacy is defined as “prescription, administration or use of more medications that are clinically indicated or when a medical regimen includes at least one unnecessary medication.” Although polypharmacy can be appropriate, it is more often inappropriate. Concerns about polypharmacy include increased adverse drug reactions, drug interactions, prescribing cascade and higher costs. Polypharmacy is often associated with a decreased quality of life, decreased mobility and cognition. Objectives to determine the opinion about polypharmacy among nurses in a rural tertiary care centre, AIMS, B G Nagar. A cross-sectional questionnaire-based study was conducted among nurses of AIMS, B G Nagar, Mandya, Karnataka. The study questions included the opinion of nurses about polypharmacy in different group of patients. A total of 94 questionnaires were distributed. 76 questionnaires were complete and taken for the study. The responders rate was 80.85%, among them 71.05% (54) were females and 28.95% (22) were males. 76.31% agreed that polypharmacy increases therapeutic effect of drugs, 53.93% responded that it shortens the duration of treatment, 48.68% and 46.04% agreed that polypharmacy improves quality of life and prolongs the life survival respectively. 90.78% opined that polypharmacy increases drug interactions where as 81.57% opined that it increases adverse effects. 59.2% stated that polypharmacy increases non-compliance of patients towards prescribed drugs. 56.57% supported that polypharmacy is beneficial in geriatric age group, 51.31% and 65.78% strongly agreed that polypharmacy is not beneficial among both paediatric and middle age group patients respectively. Our study showed that majority of nurses has good knowledge towards polypharmacy. They opined about both the positive and negative aspects of polypharmacy. To provide improved and better patient care, the nurses can be educated about polypharmacy with educational interventions like training programmes and conducting CME (Continued Medical Education) periodically.

Corresponding Author

Manu G

Email:-drmanugigu@gmail.com

INTRODUCTION

Growing trend of health related campaign about disease, treatment, prevention and prophylaxis has increased use of medicines in the general population. The practice of polypharmacy is becoming a ubiquitous problem to health care professionals. There is no universally accepted definition of polypharmacy. It



is defined in the literature as the use of a number of medications taken at same time, the number of medications varies from 2-5 or more depending on the study [1].

In general population, polypharmacy has been increased in geriatric group, more than 40% of individuals aged 65yrs or older take 5 or more medications per week and 12% take 10 different agents [2].

When multiple drugs are prescribed, if risks outweigh the benefits, it will become irrational polypharmacy. This will lead to negative consequences of drug (63%) like adverse effects/drug reactions (10%), drug interactions (34.8%) and medication error (15.3%) [3] which affect the quality of life and health care costs.

Risk factors for polypharmacy can be classified into 3 groups: demographic (increased age, white race and education), health status (poor health, depression, hypertension, anaemia, asthma, angina, diverticulosis, osteoarthritis, gout and diabetes mellitus) and access to health care characteristics (number of health care visits, supplemental insurance and multiple providers) [4].

A negative connotation has been linked to the term polypharmacy, undoubtedly due to the observation of frequent hospitalization and negative health outcomes caused by drug related problems, such as adverse drug reactions (ADRs) or poor patient adherence in patients taking many drugs [5].

Polypharmacy is considered rational when multiple drugs are prescribed to reduce symptoms or synergistic effect. Polypharmacy is not just number of medications, it is more complex. It contributes to serious problems in health care system, escalates health care costs and factor to increase the financial burden in the community.

Knowledge of the clinical pharmacology of drugs, drug interactions, adverse effect and rational use of medications is most important. Nurses who play functional role in patient care in regard to medication administration can contribute to a greater extent in controlling irrational polypharmacy. Due to their proximity with patients in the hospital setting they can review the prescriptions and identify patients receiving multiple medications [3]. With their knowledge and sincere effort, nurses play key role in reducing practices of polypharmacy by regular reminders about multiple medications to physicians and assisting patients to understand the risk associated with polypharmacy.

Hence, this study is to highlight the knowledge and opinion of nurses concerning practice of polypharmacy.

MATERIALS AND METHODS

Study design: A cross sectional questionnaire based study conducted among nurses of Adichunchanagiri

Institute of Medical Sciences, B G Nagar, Nagamangala Taluk, Mandya district, Karnataka – 571448.

Study setting

The study was conducted in Adichunchanagiri Institute of Medical Sciences, B G Nagar, Mandya district, Karnataka during the period of April – May 2015 after obtaining permission from the Institutional ethics committee, AIMS, B G Nagar.

Inclusion and Exclusion criteria:

1. All nursing staffs working at AIMS, B G Nagar during the study willing to participate are included.
2. Nursing staffs not willing to participate and nurses who were on leave were excluded.

Data collection

With prior permission of Institutional Ethical Committee, nursing staffs were approached in each ward and outpatient department. Informed consent was taken before distributing the questionnaire. The filled questionnaire was collected from them on the same day.

Statistical analysis

The returned questionnaires were checked for completeness of data. Descriptive data were expressed as percentages.

RESULTS

A total of 94 questionnaires were distributed. 76 questionnaires were complete and taken for the study. The responders rate was 80.85%, among them 71.05% (54) were females and 28.95% (22) were males. The study questions included the opinion of participants about polypharmacy in different group of patients.

DISCUSSION

Polypharmacy can be defined as “prescription, administration or use of more medications that are clinically indicated or when a medical regimen includes at least one unnecessary medication.” However, polypharmacy may be unavoidable, since multiple drug therapy has become the standard of care in most chronic conditions [6] and also new drug treatments, new indications for older drug treatments and an ageing population acquiring multiple pathologies all contributes to the development of polypharmacy [7].

Apart from elderly age groups, middle-aged individuals are also subjected to polypharmacy. Polypharmacy is also a well-known risk factor due to ADRs, drug-drug interactions and low adherence to drug therapy. In addition, it is also assumed that polypharmacy causes unnecessary health expenditure, directly due to redundant drug sales and indirectly due to the increased



level of hospitalization caused by drug-related problems [8-10].

In spite of these adverse consequences associated with the use of multiple medications, there is insufficient awareness of the problem among the health care professionals and also attempts to combat this issue [9-12].

The nurses are in a unique position to provide safe and effective medication practices. Till now the opinion of nurses on the various effects of polypharmacy has not been studied in detail, so this research highlights the nurse's opinion on various effects of polypharmacy.

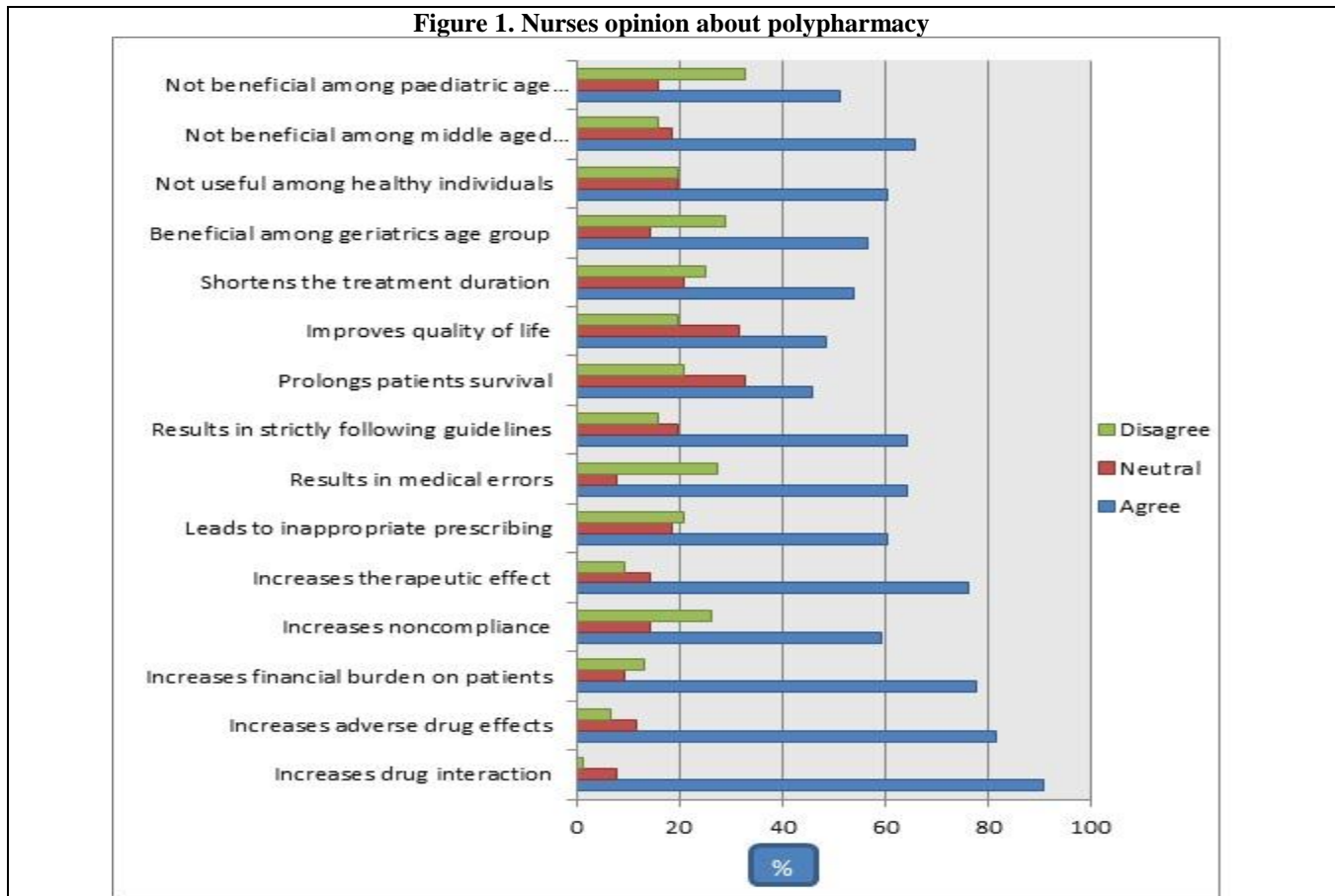
Majority of our study participants opined that polypharmacy increases drug-drug interactions (90.78%), adverse drug effects (81.57%), financial burden (77.63%) and non-compliance (59.2%) of the patients. Similar observation was reported among general practitioners. This finding was in line with the opinion of general practitioners study where in medication adherence was identified as the greatest challenge among patients on multiple medications [13].

About 76.31% and 64.46% participants felt that polypharmacy increases therapeutic effect and results in

medical errors respectively. Nearly 40% of the medication errors originated with the prescribing physician or provider and that prescription order transcription errors accounted for about 12% of medication errors encountered according to previously published reports [14]. About 64.47% felt that polypharmacy results from strictly following treatment guidelines. This finding was dissimilar from the study where in following treatment guidelines was considered as a major contributor to prescription of multiple drugs [13]. Several other studies have also documented similar observations [15, 16].

Limitations of our study included the general limitations of studies based on questionnaires. The responses were subjective and cannot be tested objectively by questionnaires, so the true knowledge and experiences could not be assessed correctly. This study was conducted at one centre which cannot be generalized to all the nurses across the world. This limitation can be overcome by educating nurses and conducting CME (Continued Medical Education) regarding polypharmacy at multicentres.

Figure 1. Nurses opinion about polypharmacy



CONCLUSION

Nurses opined that polypharmacy have both positive and negative implications. Continuing nursing education programmes and workshops addressing about various effects of multiple medications should be taught in detail to nurses. With the knowledge of polypharmacy, nurses can work as a group with the Practitioners and

Pharmacists to educate the patients on multiple medications about consequences of polypharmacy can provide better and improved patient care. Future research can be done on effectiveness of various interventions to reduce the practice of polypharmacy in the health care settings.

REFERENCES

1. Hammond T, Wilson A. (2013). Polypharmacy and fall in the Elderly: A Literature Review. *Nurs Midwifery Stud*, 2(2), 171-175.
2. Kaufman D W, Kelly J P, Rosenberg L et al. (2002). Recent patterns of medication use in the ambulatory adult population of the United States. *JAMA*, 287, 337-44.
3. John L J, Cheriathu J, Jayadevan S et al. (2012). Nurses Opinion on the Attributes of Polypharmacy in Patient Safety. *Acta Medica Iranica*, 50(7), 516-521.
4. Hajjar E R, Cafiero A C, Hanlon J T. (2007). Polypharmacy in Elderly Patients. *Ann J Geriatr Pharmacother*, 5(4), 345-351.
5. Vilttil K K, Blix H S, Moger T A, Reikvam A. (2007) Polypharmacy as commonly defined is an indicator of limited value in the assessment of drug-related problems. *BJCP*, 63(2), 187-195.
6. Roger P. (2006). Polypharmacy as a risk factor in the treatment of type 2 diabetes. *Diabetes Spectrum*, 19(1), 13-6.
7. Gorard D A. (2006). Escalating polypharmacy. *Q J Med*, 99, 797-800.
8. Hovstadius B, Hovstadius K, Astrand B, Petersson B. (2010). Increasing polypharmacy-an individual-based study of the Swedish population 2005-2008. *BMC clinical Pharmacology*, 10, 16.
9. Jenny JL, Jenny C, Jayadevan S et al. (2012). Nurses Opinion on the Attributes of Polypharmacy in Patient Safety. *Acta Medica Iranica*, 50(7), 516-521.
10. Masoodi N A. (2008). Polypharmacy: To Err is Human, To Correct Divine. *BJMP*, 1(1), 6-9.
11. Junius-Walker U, Theile G, Hummers Pradier E. (2007). Prevalence and predictors of polypharmacy among older primary care patients in germany. *Fam Pract*, 24(1), 14-9.
12. Koh Y, Kutty FB, Li S C. (2005). Drug-related problems in hospitalized patients on polypharmacy: the influence of age and gender. *Ther Clin Risk Manag*, 1(1), 39-48.
13. Anthierens S, Tansens A, Petrovic M et al. (2010). Qualitative insights into general practitioners views on polypharmacy. *BMC Fam Pract*, 11, 65.
14. Stawicki SP, Gerlach AT. (2009). Polypharmacy and medication errors: stop, listen, look and analyse. *OPUS 12 Scientist*, 3(1), 6-10.
15. Jackson SH, Mangoni AA, Batty GM. (2004). Optimization of drug prescribing. *Br J ClinPharmacol*, 57(3), 231-236.
16. Gurwitz J H. (2004). Polypharmacy: a new paradigm for quality drug therapy in the elderly? *Arch Intern Med*, 164(18), 1957-1959.

