

Research article

Knowledge regarding polypharmacy of elderly client among the nursing pprofession**Chinnasamy Azhagesan**

Maharashtra Institute of Nursing Sciences, Latur, Maharashtra, India

Abstract

The specter of polypharmacy of elderly is an ever-increasing problem. Nurse plays a functional role in assisting patients to understand the danger of polypharmacy. Nurses working in MIMSR Medical College and Hospital, Latur were assessed for their knowledge and their experiences in polypharmacy during their nursing practice. This descriptive study was performed to find the association between variables under observation using questionnaires. A total of 30 nurses participated (17 male and 13 female) in this study. The definition of polypharmacy of elderly was correctly identified by only 3 (10%), while 19 (63.66%) of the nursing personnel were not aware of the polypharmacy of elderly. The knowledge of polypharmacy was inadequate among the nursing personnel though they were found to have hands-on-experience in polypharmacy. Working knowledge of rationale polypharmacy is essential among nursing personnel to reduce the complications in elderly population.

Keywords: Mothers of infant, protein energy, malnutrition, planned teaching health programme

***Corresponding author:** Chinnasamy Azhagesan, Maharashtra Institute of Nursing Sciences, Latur, Maharashtra, India
Email: chinnaala@gmail.com

1. Introduction

Older adults present with several typical chronic illnesses, in addition to acute problems and health promotion needs. The aging population is remarkably heterogeneous and a single combination prescription fitting all prescribing pattern is ill-advised. Multiple research studies in the United States and abroad demonstrate that older adults are poorly served by pharmacotherapeutics. Safe and efficacious prescribing for this group is challenging as will requires that the NP neither overprescribe nor under prescribe. A working knowledge of the pharmacokinetics of aging and basic pharmacodynamics of medications in the older adult is needed to appropriately care for elders [2]. The term *polypharmacy* means "many drugs" and is used to indicate the use of more number of medications than is clinically indicated or warranted. No specific number of drugs is indicated but in some studies, the use of five or more drugs is defined as polypharmacy [3].

Polypharmacy is the concurrent use of multiple medications for various clinical contraindications. Polypharmacy is a misnomer to be associated with the prescription and use of too many or unnecessary medications at dosages or frequencies higher than therapeutically essential. However, this is to be defined in terms of usage of multiple medications that are often necessary to constitute best care for patients. In other words, polypharmacy is defined as the use of two or more medications to treat the same condition; or the use of two or more drugs of the same chemical class; or the use of two or more agents with the same or similar pharmacologic actions to treat different conditions. Polypharmacy is also known as combination therapy and is regularly utilized appropriately in clinical practices [1]. The use of specific threshold for the number of drugs or alternatively a measure of the number of inappropriate drugs or combination of drugs according to pre-defined criteria makes polypharmacy a science of importance requiring attention. In this descriptive study a questionnaire survey was used to assess the knowledge regarding polypharmacy on elderly among nursing

professionals working in MIMSR Medical College and Hospital Latur, Maharashtra and to find out association between the knowledge with the selected demographic variables such as age, sex, education, experience and worksectors. This was predicted that there is a significant association between the socio-demographic variables and knowledge of nursing professional. The prediction was based on the assumptions that nursing professional may have some knowledge regarding polypharmacy on elderly and this knowledge of nursing professional with polypharmacy on elderly will vary with demographic variables.

2. Materials and methods

The study was conducted in the MIMSR Medical College and Hospital Latur with written consent from the nursing professionals in the questionnaire itself. Based on willingness, nearly 30 nursing professionals who met inclusion criteria accepted to take part in the questionnaire survey. The main inclusion criteria are nursing professional who could understand and speak English and willingness to disclose personal identity and demographic details required for the study. The questionnaire consisted of two sections: 1.

In the first section, there were 5 items to gather social demographic variables like age, sex, education, experience and work sectors; and 2. the second section consisted of questions to assess knowledge based on 20 structured knowledge questionnaires focusing on polypharmacy. A score of 1 was given for every correct response.

The total scores were interpreted as: a. <50% - inadequate knowledge; b. 51-75%- moderately adequate knowledge; and c.>76% - Adequate knowledge

3. Results

The data collected were analyzed based on the selected criteria to relate knowledge with demographic variables. The selected demographic variables of the participating nurses are as depicted in Table 1. Most of the nurses were in the age group of 26 to 30 years (46.33%) with men (56.66%) being more in numbers than women. There was more number of graduates of nursing (40 %) who had a minimum of at least 1 to 3 years

of work experience (33.3%). Most of the nurses predominantly spent their time working in the hospital (50%).

Table 1: Distribution of demographic variables of participants

N=30			
SN	Variables	Frequency	Percentage
1	Age in Year		
	a) Lessthan 25 Years	11	36.66
	b) 26-30 Years	13	43.33
	c) 31-40 years	6	20
2	Sex		
	a) Male	17	56.66
	b) Female	13	43.33
3	Education		
	a) RGNM	12	40
	b) P.B.B.Sc Nursing	1	3.3
	c) B.B.Sc Nursing	10	33.33
	d) M.Sc Nursing	7	23.33
4	Total Year of Experiences		
	a) 0 to 1 Year	8	26.66
	b) 1 to 3 Years	10	33.33
	c) 3 to 5 Years	6	20
	d) above 5 years	6	20
5	Working area		
	a) Hospital	16	53.33
	b) College	14	46.66

Table 2: Categorization of participants based on knowledge scores in polypharmacy of elderly

Level of knowledge	Frequency	Percentage
Inadequate (<50 %)	19	63.66
Moderately Adequate (51 -75 %)	8	26.66
Adequate (>76 %)	3	10 %

The study revealed that 19 (63.66%) of the nursing professional, in other words the majority of the participants had inadequate knowledge on polypharmacy in elderly, whereas 8 (26.66%) of the nursing personnel had moderately adequate knowledge and 3 (10%) of

nursing personnel only had adequate knowledge.

Table: 3 Association between knowledge with the demographic variables

SN	Variables	Knowledge Chi-square	Level of Significant
1	Age in Year		
	a) Less than 25 Years	3.2	Significant
	b) 26-30 Years		
	c) 31-40 years		
2	Sex		
	a) Male	11.4	Non-Significant
	b) Female		
3	Education		
	a) RGNM	4.5	Significant
	b) P.B.B.Sc Nursing		
	c) B.BSc Nursing		
	d) M.Sc Nursing		
4	Total Year of Experiences		
	a) 0 to 1 Year	4.8	Significant
	b) 1 to 3 Years		
	c) 3 to 5 Years		
	d) above 5 years		
5	Working area		
	a) Hospital	3.2	Significant
	b) College		

Based on statistical analyses using chi-square test to find the relationship of the demographic variables to the knowledge scores showed that there was no significant statistical relationship of knowledge in polypharmacy of elderly to gender. However, other demographic variables showed that there was significant association between the level of knowledge with demographic variables such as age, education, total years of work experiences and work sectors.

4. Discussion

Results of this study showed that knowledge in nursing professionals on polypharmacy in elderly was inadequate based on the structured questionnaire scores with age, work experience and exposure and education level impacting the scores significantly. Nurses who have more years

of experience in hospital sectors and have higher degrees in nursing are more knowledgeable on poly pharmacy than others.

In a similar study by Takane et al. [4] the results indicated that patients were comfortable to review their medications with doctors but had problems in terms of communicating the knowledge on medication reviews and drug-to-drug interactions they faced; moreover these patients were glad to learn on polypharmacy medication reviews to minimize the medication intake. Further to this in a research to interrogate on the role and knowledge of nurses in polypharmacy to elderly patients by Jenny et al [5] using a questionnaire method revealed that of the 105 nurses who participated only 45.7 % had an idea of polypharmacy and its definition, while only 66.7 % acknowledged that they could discern rationale and irrational polypharmacy. Nevertheless, only 66.7 % accepted that elderly patients were more affected age groups by polypharmacy. The research concluded the need for knowledge in rationale polypharmacy is mandatory for efficient nursing practice for elderly patients. In continued research by the same group in 2012 [6], the nurses felt that polypharmacy practice increased because of the non-compliance to prescribed medication regimen and financial burden coming in way to reduce polypharmacy practice. Furthermore, the nurses also expressed the need for training programs to intervene polypharmacy practice in elderly patients.

Mary [7] in her studies pointed that the practice of polypharmacy as a shift towards curing treatment from caring treatment in elderly patients. She emphasized that nurses play a pivotal role in reviewing medical regime of those patients undergoing polypharmacy treatment. John et al [6] in their research on polypharmacy and the role of nurses in identifying adverse interactions, identified using a self-structured questionnaire that the following as the main concerns of polypharmacy: a. increased drug interactions (98.1 %), b. adverse drug effects (81.9 %) and c. increased financial burden (69.5 %); who also stressed on the need of workshops and training programs on polypharmacy for efficient and enhanced nursing practice in the hospital community.

While the number of elderly patients being fed with polypharmacy increasing on a daily basis, the number of adverse drug event (ADE) also increased, and in specific in elderly patients [8]. The various strategies to counterfeit such events by this study and by other research [9] concluded that the contributions of nurses and pharmacists were significant. The will need more knowledge on polypharmacy in elderly patients to reduce polypharmacy medication numbers at the time of review by not only keeping track on the drug history of the patient and the adverse reactions and drug-drug interaction in the patients, but also patient specific effects based on lifestyle habits and practices.

Conclusion

The study revealed that majority of them had inadequate knowledge and that a structured teaching programme will improve knowledge of nursing professionals working in health care setting hospital and college regarding polypharmacy of elderly to prevent complications in these population.

References

- [1] Zurakowski, T. (2009). The practicalities and pitfalls of polypharmacy. *The Nurse Practitioner*, 34(4), 36-41.
- [2] Haque, R. (2009). ARMOR: a tool to evaluate polypharmacy in elderly persons. *Annals of Long-Term Care*, 17(6), 26-30.
- [3] Terry Fulmer, PhD, RN, FAAN, Polypharmacy of older adults *Institute for geriatric nursing*.
- [4] Takane, A. K., Balignasay, M. D., & Nigg, C. R. (2013). Polypharmacy reviews among elderly populations project: assessing needs in patient-provider communication. *Hawai'i Journal of Medicine & Public Health*, 72(1), 15.
- [5] Jenny, J. L., Jenny, C., Jayadevan, S., Jayakumary, M., Mohamed, A., Arun, S., & Mohamed, F. M. (2012). Nurses opinion on the attributes of polypharmacy in patient safety. *Acta Medica Iranica*, 50(7), 516-521.
- [6] John, L. J., Arifulla, M., Myalil, J. M., Sreedharan, J., Cheriathu, J. J., Shirwaikar, A., & Fathi, M. M. (2012). Insights into the Nurse's Knowledge and Clinical experience of Polypharmacy in *Ajman, UAE*.
- [7] Gray, M. W. (1990). Poly pharmacy in the Elderly: Implications for Nursing. *Orthopaedic Nursing*, 9(6), 49-54.
- [8] Maher, R. L., Hanlon, J., & Hajjar, E. R. (2014). Clinical consequences of polypharmacy in elderly. *Expert opinion on drug safety*, 13(1), 57-65.
- [9] Waller, J. L., & Maclean, J. R. (2003). Updating the Beers criteria for potentially inappropriate medication use in older adults. *Arch Intern Med*, 163, 2716-2724.