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Review Article

### GERIATRIC CARE: A NEW PADIGRAM OF PHARMACY PRACTICE IMPROVING MEDICATION ADHERENCE

Sarad Pawar Naik Bukke<sup>1</sup>, Dilip Kumar Anjur<sup>1</sup>, Yenumula Nettekallu<sup>2</sup>, Purushothama Reddy K<sup>2</sup>,  
M.D.Mustaq<sup>3</sup>, Natesh Gunturu<sup>3</sup>, Jaddu Santosh Kumar<sup>3</sup>

<sup>1</sup>\*. Associate Professor, Department of Pharmaceutics, Pratishta Institute of Pharmaceutical Sciences,  
Suryapet, Telangana – 508213.

<sup>1</sup> Senior Global safety and Pharmacovigilance Associate, syneos health, Hyderabad-500081.

<sup>2</sup> Associate Professor, Department of Pharmaceutics, Pratishta Institute of Pharmaceutical Sciences, Suryapet,  
Telangana – 508213.

<sup>2</sup> Associate Professor, Department of Pharmacy Practice, Rao's College of Pharmacy, Nellore,  
A P – 524 320

<sup>3</sup> Associate Professor, Department of Pharmaceutics, Pratishta Institute of Pharmaceutical Sciences, Suryapet,  
Telangana – 508213.

<sup>3</sup> Associate Professor, Department of Pharmaceutics, Deevena College of Pharmacy, Chivemla, Suryapet,  
Telangana – 508213.

<sup>3</sup> Assistant Professor, Department of Pharmacognosy, Teegala Ram Reddy College of Pharmacy, Meerpet,  
Saroornagar(M), Hyderabad-500079.

**Received:** 21 December 2016**Accepted:** 15 January 2017**Published:** 27 January 2017**Abstract:**

*Adults aged  $\geq 50$  years are fastest segment of the population in many countries and often have multiple medical conditions like hypertension (HTN), diabetes and arthritis etc. Increasing the medications leads to increase complexity and poor compliance. There are many interrelated factors like psychological, behavioral and treatment leading to cause nonadherence to medications in elders. Pharmacist contributions in the geriatric care can tremendously improve the compliance and adherence in geriatric patients. Patient education has been suggested as a primary means of improving patient compliance and has been shown to be successful in many causes. Pharmacist involving geriatric patient care with proper motivation, education and support the elderly to overcome compliance difficulties. Pharmacy students should be encouraged to form a relationship with the elderly patients. Under the guidance of senior pharmacists the student pharmacists can able to learn and hand some of the problems elderly people face with medication regimens. Using some of the compliance aids may be useful for patients with memory impairments or patients on a complex medication regimen. Improve patient compliance have been shown to be effective only when they are matched to individual patient needs. Pharmacist supervision and ongoing education have a positive effect on medication adherence in elder patients. Pharmacist can and should take an active part in geriatric care to ensure better management of drug use and improving the adherence among the elders.*

**Key Words:** Geriatric Patients, Medication Adherence, Patient Education, Medication Management.

**Corresponding Author:**

**Sarad Pawar Naik Bukke**, M. Pharm.,(Ph. D).,  
Associate Professor,  
Department of Pharmaceutics,  
Pratishta Institute of Pharmaceutical Sciences,  
Suryapet, Telangana – 508213.

**Mobile:** 91+9966555743, **E-mail address:** saradpawarnaik@gmail.com.

QR code



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**INTRODUCTION:**

The number of older people is increasing worldwide and in less than 30 years. Elderly people represent 6.4 % of the world's population and their numbers are increasing by 8 billion every month. They have become the fastest segment of the population in many developing countries [1,2]. According to the World Health Statistics 2011, 83 million persons in India are 60 years of age and older, representing over 7 % of the nation's total population [3] and it is estimated that aging population results 316 million elderly persons by 2050 [4]. In the United States, older adults have become the fastest growing segment of the population and are expected to double in number to 72 million by 2030 [5]. Many older adults have multiple medical conditions, such as hypertension (HTN), arthritis, heart disease, cancer and diabetes mellitus (DM), which require multiple medication for proper treatment [6,7]. Increasing in the number of medications leads to increase morbidity due to adverse drug reactions (ADR's), drug interactions (DI's), drug related problems (DRP's) and patient non-compliance. There are many inter-related reasons for non-compliance.

**These variables fall into 4 main categories:**

- **Physiological factors:** Sensory Impairment, Mobility Limits, Types of diseases, Presence of symptoms, memory loss and depression and cognitive impairment.
- **Behavioral factors:** Social Isolation, Social and Health beliefs, economic conditions.
- **Treatment factors:** Side effects of medications, medication class, Perception of medication, duration of treatment and complexity of treatment.
- Healthcare provider and patient interaction

Despite the fact that the variables are developed separately, in practice they overlap substantially. This evidence suggests that there is a need of pharmacist involving geriatric patient care with proper motivation, education and support the elderly to overcome compliance difficulties.

Geriatric care or eldercare is the fulfillment of the special needs and requirements that are unique to senior citizens. This broad term encompasses such services as assisted living, adult day care, long term care, nursing homes, hospice care and In-Home care [8].

With the growth of the older adult population, community-based elder health services are becoming critical components of many health systems and are creating entrepreneurial opportunities. Pharmacists are now providing services to the older adults in a variety of community settings, including traditional pharmacies as well as pharmacies operating out of senior faculties and clinics and in consultative roles. Pharmacists provide regular drug reviews for nursing

homes residents and participate in committees for nursing home services. Pharmacists role in the care of older adults in the hospital, sub-acute care units and assisted living environments are increasing i.e., palliative care centers. Pharmacy services are rendered as a part of an interdisciplinary team. When patients are transferred between different locations, pharmacists play an integral role in coordinating drug managements. Better communication systems that allow sharing of information should be developed to enhance optimal use and safety of drugs across patient care settings [9].

**EFFECTIVE EDUCATION TO IMPROVE COMPLIANCE:**

The complex nature of the medication compliance issue suggests that they are not likely to be any quick or simple remedies for the non-compliance [10]. A number of suggestions have been offered by various researchers. Haynes has pointed out that any efforts to improve compliance should target only treatment for which there is reasonable evidence of therapeutic efficacy [11].

**Educating Patients and Health Care Providers:**

**1. Pharmacist Level:** Patient education has been suggested as a primary means of improving patient compliance and has been shown to be successful in many causes. However, as Flavo has described patient education is not simply repeating directions or handling out printed materials. It is process of involving skill in data gathering; individualization of instructions; prompting and support and evaluation and follow-up of the patient's success in implementing the treatment regimen [12] The patients are encouraged to express his or her points point of view can be the health care provider best decide what strategies will be most appropriate to improve compliance.

The process of patient education can be more effective, if incorporated into the daily interactions of each patient encounter, can actually save time by increasing patient compliance. Fewer calls or visits to the physician or pharmacist, as well as other benefits of compliance such as avoiding hospitalization, may result if proper educational techniques are employed early in the therapy [13].

**2. Public Education Programs:** There are many options available to promote the programs for informing and educating elderly patients about the medication issues. One of the successful programs "Elder-Ed and Elder health programs" conducted by University of Maryland's school of pharmacy in 1983, in this program the retired pharmacists are teamed with pharmacy students in providing counseling to senior citizens in group settings. By this program, the pharmacy students are required to form a relationship with the elderly patients. The

student visits the elderly patients periodically to help educate the patient about medications. In this way the student will learn the best from the senior pharmacists and can able to hand some of the problems elderly people face with medication regimens.

Other similar program initiated by **The National Council on Patient Information and Education (NCPPIE)** where the council employs public service announcements, education campaigns and special events such as the **“Talk about prescription month”** to raise public awareness about problems associated with prescription medication [14].

**3. Using Compliance Aids:** There are wide range of compliance aids available electronic and mechanical devices that might help to improve compliance [15]. These are from the simple charts to records and remains patients of medication use, to sophisticated Glow-electronic bottle caps that have alarms and flashing indicators to alert a patient when a dose is due. Compliance aid can range in price from a few cents to 300 dollars for a Glow cap [16]. Such aids may be useful for patients with memory impairments or patients on a complex medication regimen.

**4. Other strategies and proposals that can improve patient compliance include:**

- Providing reminder cards for refilling.
- Providing written or printed information that is easy to read (Posters)
- Keeping medication histories
- Regular consulting the patients
- Simplifying the regimen as much as possible.
- Involving family members in support and supervision rules and
- Demonstrating the proper techniques for effective usage of application apparatus.
- Using pictograms for effective counseling

In the older population, it is also important to assess patients for cognitive deficits which may impair their ability to recall doses and the times at which they should be taken. Under these circumstances, enlisting the assistance of family, care takers or other social support may be necessary. In the absence of a career,

use of calendar packs or alarm clocks to serve as reminders may be employed [17]. However, strategies employed to improve patient compliance have been shown to be effective only in so far as they are matched to individual patient needs.

**REDUCING EXPENDITURES AND COST [18]:** Pharmacist’s coordinating and optimizing drug therapy to improve outcomes by reducing the costs and expenditure by;

- Targeting patients taking unnecessary multiple prescriptions that can cause serious harm and waste valuable resources.
- Reducing the number of serious at risk for side effects of drugs considered inappropriate for use in the elder patients.
- Collaborating with physicians in optimize drug therapies by increasing the use of medications considered to be best for individual practices.
- Providing therapeutic interchange for certain drugs to provide equal or better clinical outcomes.

**SUPERVISION:**

Client’s knowledge and adherence gained from education interventions are often not sustained. Supervision and ongoing education have a positive effect on medication adherence [19]. Pharmacist should review the medication list for accuracy and followed by the physician’s evaluation of whether the medication still matches the goal of therapy. An imperative part of supervision is maintaining the simplest medication regimen possible. The criteria set forth by ‘Hamdy R and Moore SW et al.’ for reviewing medication list is an effective method for determining the continuing appropriateness of medication. Questioning the patient accordingly and if answers to the any question was yes, adjustments or discontinuance of prescription should be considered (Table 1) [20]. Careful consideration of answers to inquiries about symptoms in the standard review of systems may also helpful for identifying side effects of medications that may be at the root of the nonadherence [21].

**Table 1. Criteria for Continue Appropriateness of Medication**

Is the diagnosis still present?
Are there duplications?
Is this the simplest plan?
Are adverse drug reactions present?
Has the dosage been adjusted for age and renal status?

**CONCLUSION:**

With the increase in growth of the older population there is a need of pharmacist involvement in better understanding the needs of elder population. Pharmacists focusing on the elderly care can tremendously value in improving the adherence. Pharmacists can provide a variety of small but important services to make taking prescription medication easier for the elder patients; this can be helpful in improving the drug therapy and quality of life (QOL). Encouraging the Pharmacy Practice students in patient care and interactions play a vital role in broadly impact elder patients outcome. Pharmacist can and should take an active part in geriatric care to ensure better management of drug use and improving the adherence among the elders.

**REFERENCES:**

1. Courtehouse C. [Reciprocal responsibility: the case with asthma.] [French] *Revue Medicale de la Suisse Romande*, 1992, 112: 235 - 238.
2. WHO: World health organization (2003), Adherence to long term therapies: Evidence for action (pp.27 - 38), WHO Publications.
3. WHO: World health statistics 2011 [<http://www.who.int.whosis/wostat/2011>].
4. James K: Indian demographic change: opportunities and challenges. *Science* 2011, 333 (6042): 576 - 580.
5. Federal Interagency Forum on Aging Related Statistics. Older Americans 2010: key indications of well-being. Available from <http://www.agingstats.gov/chartbook2000/default.htm>. Access March 4, 2012.
6. Federal Interagency Forum on Aging-related Statistics. Older Americans update 2006: Key Indicators of well-being. Washington, DC: US Government printing office: May 2006
7. Gurwitz J H. Polypharmacy: A new paradigm for quality drug therapy in the elders? *Arch Intern Med*. 2004; 164: 1957 - 1959.
8. Tinetti MD. Falls. In: Cassel CK, et al., eds. *Geriatric medicine*. 2<sup>nd</sup> edition, New York: Springer-Verlag, 1990: 528 – 34.
9. Centers for disease control and prevention. Sexually transmitted disease treatment guidelines 2002. Section on clinical prevention guidelines. *M M W R Recommended Rep* 2002; 51 (RR - 6): 2 - 5.
10. R. N. Podell and L. R. Gary, "Compliance: A problem in medical management," *American Family Physician* 13 (1976): 74 - 80.
11. R. Brain Haynes, "Strategies to improve compliance with referrals, appointments and Prescribed Medicine regimens," In Haynes, *Compliance in healthcare*.
12. Falvo D. R (1994). *Effective patient education, A guide to increase compliance*. 2<sup>nd</sup> edition, Aspen Publishers, Gaithersburg.
13. Howard J. Eng, Eun Sul Lee. The role of prescription drugs in health care for the elderly, *Journal Health Human Resource Admission* 1987; 9 (3): 306 - 318.
14. Helen Levens Lipton and Philip R. Lee 'Drugs and the Elderly: Clinical, Social and Policy Perspectives, *INTL Journal of Technology Assessment in Health Care* 1990; 6 (2): 348 - 349.
15. Lamy. Drug Use and the Elderly: Some observations and recommendations, *The Maryland Pharmacist* 1988; 68 (3): 10 - 15.
16. Michael C. Sokol, Kimberly A, Mc Guigan, Robert R, Verbrugge, Robert S. Epstein. 2005; 43 (6): 521 - 530.
17. Wen Kwang Lim, Micheal C Woodward; Improving medication outcome in older people, *Australian Journal of Hospital Pharmacy*, 1999; 29 (2): 103 - 7.
18. Competition and cost of hospital care, *JAMA* 1987; (258) 15: 2064 - 6.
19. Wendt DA. Evaluation of medication management intervention for the elderly, *Home Healthcare Nurse* 1998; 16: 612 - 7.
20. Hamdy R, Moore SW, Whalen K, et al. Reducing polypharmacy in extending care, *South Medical Journal*, 1995; 88: 534 - 8.
21. Evans BB. AIDES to improve medication adherence in older adults, *Geriatric Nursing* 2006; 27 (3): 174 - 182.