

## Medication Adherence in the Elderly

Park DC, Hertzog C, Leventhal H, Morrell RW, Leventhal E, Birchmore D, et al. Medication adherence in rheumatoid arthritis patients: older is wiser. *J Am Geriatr Soc* 1999;47:172-83.

### Study Overview

**Objective.** To examine the patterns of medication adherence in community-dwelling rheumatoid arthritis (RA) patients and to assess the contributions of age, cognitive function, disability, emotional state, lifestyle, and beliefs about illness to adherence.

**Design.** Prospective observational study in conjunction with structural equation modeling.

**Setting and participants.** A volunteer sample of 121 community-dwelling, age-stratified (between 34 and 84 years) patients with RA recruited from private rheumatology practices in Atlanta and Athens, GA, through newspaper ads, posters, and informal physician contact. Written verification of the RA diagnosis and a disease severity rating were obtained from personal physicians before patients were enrolled in the study. Both patients and their physicians rated the patients' RA as moderate (mean of 3.2) on a 5-point scale. Participants were taking a mean of 4.2 prescription medications daily, with a mean of 1.35 doses per medication daily. Participants were well educated; 96% completed high school and 66% attended college.

**Methods.** Subjects completed an initial assessment survey that measured cognitive function, self-reported health, affective state, beliefs about arthritis and medications, and functional capabilities. Patients' medication adherence in their home and work settings was monitored for 4 weeks with microelectronic caps that recorded medication events. The information gathered in the caps was incorporated into a structural equation model of adherence behavior, which was used to examine predictors of adherence.

**Main outcome measures.** Rates of commission or omission errors with regard to medication.

**Main results.** Thirty-eight percent of the sample made no errors in the 4-week period of data collection. Omission of medication accounted for nearly all adherence errors. Older adults made the fewest errors, and middle-aged adults made the most. Perfect adherence was more common in

adults older than 55 years (47%) than in adults aged 34 to 54 years (28%). Error rates increased over time, from 4.6% in week 1 to 8.5% in week 4. A busy lifestyle, age, and cognitive deficits predicted nonadherence, whereas coping with arthritis-related moods predicted adherence. Illness severity, medication load, and physical function did not predict adherence errors.

### Conclusion

Although the older adults in this sample showed normal, age-related cognitive decline, they had sufficient cognitive function to manage medications. A busy lifestyle and middle age predicted nonadherence more than did beliefs about medication or illness.

### Commentary

Patients' adherence patterns differ with the nature of the illness and the context in which the illness occurs. For example, medical conditions that produce little pain or that are less well controlled by medications may produce a less positive adherence profile than that found in these RA patients. Therefore, the authors' findings regarding RA patients are not necessarily generalizable to patients with other illnesses. However, the findings do illustrate the need for clinicians to be attentive to patient adherence, whether the treatment regimen is comprised of prescription medication, behavior modification, or other interventions.

### Applications for Clinical Practice

Health care providers should not assume that older adults have cognitive deficits that make them incapable of managing medications or that they are more likely to make adherence errors. Very busy, unhappy, middle-aged adults seem to be at the greatest risk of managing medications improperly.

Especially for patients at risk of nonadherence, interventions to promote adherence should be considered. Simpler regimens should be explored whenever possible, particularly if the patient has several prescriptions for multiple conditions. External supports such as medication organizers (assuming that care is taken to load them properly [1]) and reminder devices [2] can be helpful. Finally, more patient education on the importance of adherence also can be valuable.

### References

1. Park DC, Morrell RW, Frieske D, Kincaid D. Medication adherence behaviors in older adults: effects of external cognitive supports. *Psychol Aging* 1992;7:252-6.
2. Park DC, Shifren K, Morrell RW, Watkins K. The use of cognitive interventions to improve medication adherence in African-Americans with hypertension. Presented at the meeting of the Gerontological Society of America; November 1997; Philadelphia, PA.

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