

Assessing Medication Knowledge and Practices of Older Adults

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Abstract:

An assessment instrument for home health nurses to use in assessing medication knowledge and practices of older adults was developed and tested on a convenience sample of 20 adults 65 and older admit to a local home health agency. The tool was found usable by nurses, understood by patients, and had adequate test-re-test reliability. The results emphasized the need for thorough medication assessments of all home health patients and provided a tool that home care nurses can use.

Article:

Background and Problem

Of all age groups, older adults are prescribed the largest number of medications. They use 31% of all prescription drugs (Cornish, 1992) and are prescribed an average of 7.5 to 17.9 medications per person every year (A11,1992). A physician visit results in a new prescription nearly 80% of the time for this age group (Cornish,1992). Older adults are also the biggest consumers of over-the-counter (OTC) drugs (Cornish, 1992), the most common being aspirin, laxatives, and vitamins. Caffeine intake, alcohol consumption, nicotine use, and use of narcotics can interact with prescribed medications, and are common among older adults (Conn, 1992).

Polypharmacy, the use of multiple medications, is widespread among older people, primarily because of the multiple chronic illnesses they experience (Baker & Naphine, 1994; Wolfe & Schirm, 1992). These chronic illnesses and multiple medications, along with normal changes of aging, place older adults at great risk for side effects from drug therapy. In addition, older adults frequently have difficulty managing their complicated medication regimens, which poses a great challenge to healthcare providers, particularly those in home health.

Mismanagement of medications, intentional or unintentional, may cause unwanted side effects, loss of functional abilities, unnecessary hospital admissions, and even death. Voluntary misuse includes not having prescriptions filled or refilled, stopping medications too soon, and not taking medications because of side effects. Involuntary misuse includes administering medications incorrectly, often because of cognitive or sensory changes (Mullen, 1993), the complexity of the medication regimen (Conn, Taylor, & Kelly, 1991), or the lack of financial resources (Kluculowski, 1992).

These risks point to the necessity of thoroughly assessing the medication practices of each elder so as to provide individualized teaching and care. The home care nurse will witness firsthand any problems that might be occurring, and can assist the patients in developing solutions. Home care nurses also have a responsibility for reviewing all medications and contacting prescribers about potential problems, because they may be the patients' primary contact with the healthcare system.

Many authors advocate the use of a standardized assessment tool to evaluate medication practices accurately (Benzon, 1991; Hahn & Wietor, 1992; Messner & Gardner, 1993; Sidel et al., 1990; Simpson, 1993). There are several medication assessment tools in existence, but none have been tested

for use in the home care setting. The purpose of this study was to develop and test an assessment instrument for use by home health nurses in evaluating the medication knowledge and practices of older adults.

Methods

Instrument Development

Construction of items in the instrument was based on a literature review concerning instrument development and medication practices of older adults. Items were written as complete sentences and placed in logical order to improve respondents' recall. According to Flesch-Kincaid's measurement of reading level, items were written on a fifth grade level, which was consistent with the literature on instrument development (Lewis, 1993).

The instrument consists of three sections. The first section asks about basic patient demographics, date of birth, race, gender, physicians, current health problems, and allergies. This demographic section also requests data that might influence a patient's ability to complete an interview such as highest level of education completed, ability to read and write, and I orientation.

The second section focuses on the patient's overall medication practices. The areas addressed are medication administration and storage; medication purchasing habits; attitudes toward medications and health; lifestyle habits including use of nicotine, caffeine, alcohol, and street drugs; and home environment (Figure 1).

The final section is designed to determine the patient's knowledge of each medication currently used. The patient is asked about the action, administration, and side effects, both potential and actual, of each medication.

The content validity of the tool was established by a panel of experts consisting of faculty from a local school of nursing and nurses employed in community health nursing. Data were collected using semistructured interviews. This allowed the test administrators to tailor the order and phrasing of questions to respondents' needs. The administrators were given the freedom to explain or restate items so the instrument would be easier to administer to older adults who have varying educational levels, sensory changes, and memory deficits.

Five volunteer registered nurses enrolled in the baccalaureate nursing program at a local university were trained by the researcher to administer the instrument. Training included information on administration of the tool and on the procedures for making a home visit.

Interrater reliability, determined by percentage of agreement on items, was established by role-playing among the test administrators. Interrater reliability was established at 82% during the training session by the use of two videotaped scenarios. These videotaped scenarios gave the raters an opportunity to observe the tool being administered and to practice using it.

Test—retest reliability was determined by administering the tool to the same subjects on two occasions, one week apart, and correlating scores. Usability was established by determining how long it took to administer the tool. Administrators assessed clarity by noting on the instrument any items that seemed difficult for subjects to understand, or that had to be paraphrased. Any problems the test administrators encountered were also included in these comments.

Sample

The instrument was tested with a sample of elders who were currently being served by a south-eastern home health agency. All were older than 65 years, had been admitted to a home health agency for nursing care, and met the criteria for home health services under Medicare (i.e., home-bound, needing

skilled care, and possessing a physician's order for treatment). The sample consisted of 20 patients newly admitted over a 7-day period. The only subjects excluded were those who did not speak English. Potential subjects were telephoned before the interview to obtain their consent to participate, and to establish a convenient time for a visit. Written consent was obtained before data collection.

Results

Sample Characteristics

Data were collected from 20 elders, and test—retest reliability was determined for 14 of these subjects. A second interview was not conducted with the remaining six subjects because two were not found, two refused, one had been admitted to a skilled nursing facility, and one had discontinued all medications. The primary respondents were the elders, but family members and spouses often took part in the interviews. Subjects had a mean age of 72. They used an average of 6.7 different prescription and nonprescription medications. The number of medications sometimes varied from the first visit to the second. Housing varied among subjects from single family homes to senior housing facilities. Most subjects had recently been discharged from a hospital. Education levels ranged from completion of fourth grade to completion of a doctoral degree, and all subjects were able to read and write English. Only one subject was disoriented.

Medication Assessment

Note to administrator: The sequence of the interview, along with the instructional statements are merely suggestions, and should be considered guidelines when using the interview. It is acceptable to reword statements or change the format to better meet the needs of the individual, yet all topics must be included in the assessment.

Start Time: _____ Who is the respondent? Patient Spouse Other (list) _____

Please Check The Appropriate Response.

Administrator: "I need to see all of your medications. Please show me those you take every day, and those you take occasionally. Don't forget to show me eyedrops, insulin, laxatives, vitamins, antacids, ointments or any over-the-counter drugs you sometimes use. Are there any other medications that you regularly take that are not here today?" (Attach copies of medication profiles to document drugs.)

I. Medication Administration and Storage

- Yes No Can patient open a pill bottle? (Have patient demonstrate.)
- Yes No Can patient break a pill in half? (Have patient demonstrate. Omit if not applicable)
- Yes No Does someone help you take your medicine?
- Yes No Do you use any type of system to help you take your pills, such as a pill box, or a calendar?
List: _____
- Yes No Do you have problems swallowing your pills?
Where do you store your medicines? _____

II. Medication Purchasing Habits

- What drug store do you use? _____
- Yes No Does the drug store you use deliver the medications to your home? _____
If no, then how do you get your medications? _____
- Yes No Do you always use the same drug store? If no, explain: _____
- Yes No Do financial difficulties ever prevent you from buying your medications?

III. Attitudes

- Excellent How would you describe your health? _____
- Good What do you see as your health needs? _____
- Fair _____
- Poor _____
- Yes No Does taking your medications upset your daily routine? If yes, explain: _____
- Yes No Do side effects from your medications upset your daily routine?
- Yes No Do your medications help you?
- Don't Know
- Yes No Do you ever share your medications with anyone else?

IV. Lifestyle Habits

TIMES PER WEEK

- _____ How often do you drink coffee, tea, colas or eat chocolate?
- _____ How often do you use cigarettes, snuff, or tobacco products?
- _____ How often do you consume beer, wine or liquor?
- _____ How often do you use recreational drugs such as marijuana?

V. Home/Environment

Who else stays at your residence? (List relationship and age) _____

If someone else lives in home, does that person participate in your healthcare? _____

Figure 1. Medication assessment tool that was administered during research study.

VI. Medication Profile

Record each medication separately on the form below: (Attach additional sheets as necessary.)

(MEDICINE NAME, DOSAGE, ROUTE, EXPIRATION DATE EXACTLY AS PRINTED ON LABEL)

Yes No Can you read the name, dosage, and expiration date of this medicine?
Why do you take the medication? _____

How long have you taken this dosage? _____
When do you take the medicine and how many do you take? _____

Do you know what the side effects are? List: _____

Yes No Does the medicine cause you any problems or side effects? _____
What do you do if you experience side effects? (stop the pills, call the doctor, etc.) _____

Figure 1. continued Medication assessment form.

Major Findings

Content validity of the instrument was endorsed by the panel of 10 experts, who agreed that the tool was logical and contained the necessary information. Interrater reliability was 82%, and test-retest reliability was 92%. Data collection took an average of 25 minutes on the first visit, and 22.5 minutes on the second.

Administrators reported few difficulties in using the tool. Some expressed concern that the instrument did not prompt the administrator to indicate whether a person had answered a question correctly. For example, when the administrator asked about the purpose of a medication, the person's response was recorded, but there was no space for the nurse to note whether that response was correct. When the person was asked to read the prescription label, there was no way to indicate whether the person could read the entire label or just parts of it. Respondents had difficulty answering questions about managing side effects if they had not experienced any side effects from a medication. Some people had difficulty calculating lifestyle habits on a weekly basis, and felt more comfortable addressing them on a daily basis.

Discussion

Subjects used an average of 6.7 different medications. The most common OTC medications were aspirin, laxatives, and vitamins. Caffeine use was reported by all but one subject. Most used it as many as seven times per week. Nicotine was used by only one subject. Alcohol was used weekly or more by three subjects. Multiple physicians and multiple pharmacies were common among subjects.

The use of an unstructured interview to collect data worked well because nurses were able to paraphrase questions, leading subjects to give them more detailed responses. Some subjects wanted to talk about individual medicines immediately, before answering other questions, and the unstructured interview made this possible. When questioned about personal topics such as lifestyle, subjects appeared to give socially acceptable answers initially, but the unstructured format allowed for in-depth questioning to reveal more reliable answers.

Questioning subjects about each medication revealed valuable information. The greatest knowledge deficits concerning drug action, administration, and side effects were found for medications that had been prescribed during a recent hospitalization. Subjects lacked knowledge of side effects for almost all

medications, even those taken for years. This section of the tool should be revised to include the name of the prescriber of each medication, particularly for OTC medications.

Two items pertaining to time were unclear. On the demographic section, the item "recent hospitalization?" should be clarified to say, for example, "hospitalization within 3 months?" When questioning respondents about each individual medication, "How long have you taken this dosage?" was answered differently by several subjects on retesting. Providing choices such as "new," "less than 6 months," or "longer than 6 months" would probably reduce this discrepancy.

These results supported the usefulness of a formal instrument to assess the medication knowledge and practices of older adults. A clear and logical instrument can be used easily by home health nurses. The tool took an average of 23 minutes to administer, which could seem overwhelming to both patient and nurse when other forms also must be completed and signed. In a more appropriate use of the tool, the assessment nurse, who makes the initial patient visit, could obtain a list of current medications and verify it with the physician or family. The primary nurse could then complete the tool on the next visit and use the results as a blueprint for providing teaching and care.

Improved medication teaching is needed in the hospital when new medications are prescribed. It was noted that older adults kept teaching leaflets given to them by pharmacists. In the acute care setting, these teaching tools may prove valuable in preparing patients for discharge. Also, home health nurses must complete a thorough assessment of clients' and caregivers' medication knowledge. It cannot be assumed that because a care-giver administers the medications, he or she is knowledgeable of them. For example, one of the elders had been a patient in the same agency three times, yet the caregiver lacked knowledge about most of his medications.

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B Test Responses: Darken one for your answer to each question.

- 1. a b c d
- 2. a b c d
- 3. a b c d
- 4. a b c d
- 5. a b c d
- 6. a b c d
- 7. a b c d
- 8. a b c d
- 9. a b c d
- 10. a b c d
- 11. a b c d
- 12. a b c d
- 13. a b c d
- 14. a b c d
- 15. a b c d

C

- 1. Was the material new (N) or review? (R) ___ N ___ R
- 2. Was this an effective learning/teaching method for you? ___ Y ___ N
- 3. Were stated objectives met? ___ Y ___ N
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