Center for Health Statistics

NEW JERSEY DEPARTMENT of HEALTH and SENIOR SERVICES

TOPICS IN HEALTH STATISTICS
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Prescription and Non-Prescription Drug Use among NJ Older Adults, 2004

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MAJOR FINDINGS:

- 75 percent of NJ adults aged 50 years and older reported using prescription medications in the past month; more than 20 percent used 5 or more medications.
- Among older adults, the use of prescription medications increases with age. New Jersey adults aged 70 years and older are about three times more likely than those 50 to 59 years to take 5 or more medications.
- Overall, older adults reported relatively few medication management problems, such as serious side effects, problems with remembering timing and dosage, and concerns about medication safety.
- Asians are significantly less likely to report using prescription medications than any other racial or ethnic group.
- Older adults who use 5 or more prescription medications are significantly more likely to report that their general health status is fair or poor compared to those who take fewer medications.
- Across all age groups females are more likely to report experiencing significant side effects from prescription medications than males.
- Hispanics are significantly more likely than any of the race groups to report having difficulty remembering timing and dosage. They are also most concerned about the safety of using prescription medications as compared to other groups.

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Introduction

With the availability of new drugs to treat major chronic illnesses such as heart disease, hypertension, and depression, the use of prescription drugs has increased significantly. Prescription drug use has increased among all age groups, but is highest among the elderly. [1, 2] A nationwide survey of US non-institutionalized adults showed that for adults aged 65 years or older more than 40 percent use 5 or more different medications weekly, and 12 percent use 10 or more different medications.[3]

The increased use of prescription medications among the elderly has created concerns about safety as well as access and affordability. The heightened exposure to prescription medications and changes in pharmacokinetics (how the body responds to drugs) related to aging makes older adults more likely to experience medication-related adverse events. Misuse of medications can have serious health consequences; therefore understanding the prevalence of medication misuse is essential to prevention efforts.[1, 4]

In New Jersey, there are over 2.5 million adults aged 50 years and older, nearly 30 percent of the state's population. This report describes an analysis of several questions about medication use that were added to the New Jersey Behavioral Risk Factor Survey (NJBRFS) in 2004.

Data and Methods

The 2004 NJBRFS sampled approximately 4,000 older adults aged 50 years and older and posed questions about their use of prescription and non-prescription medications, and potential indicators of medication problems such as the presence of side effects, difficulty with timing and dosing and accidental mis-dosing, as well as concerns about safety. [i] The sampling frame of the NJBRFS is limited to community-dwelling adults, therefore older adults living in nursing homes are not included. The Wald F statistic is used to test associations. Race prevalence estimates are age-adjusted using the 2000 U.S standard population. The statistical software package SUDAAN was used to adjust for complex study design.[5]

[i] The specific questions analyzed are: 1. How many, if any, different prescription medications are you currently taking? 2. How many times in the past month have you taken an over-the-counter (non-prescription) medication? 3. In the past year, have you encountered any of the following problems regarding your prescription or over-the-counter medications: You were confused or unsure about the benefit or safety of the medication. You had difficulty remembering when to take the medication or what dosage to take. You had side effects that caused you to stop taking the medication and/or seek medical attention.

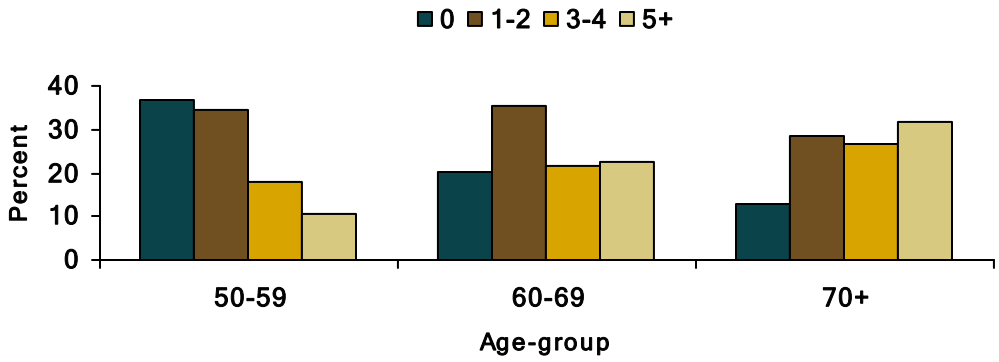
Results

Prevalence of Prescription & Non-Prescription Drug Use

Age

The number of prescription drugs used increased significantly with age among adults aged 50 years and older ($p \leq .001$). Approximately 75 percent of New Jersey adults in this age group reported taking prescription medications. Of those aged 50 to 59 years, about 10 percent reported taking 5 or more medications compared to over 22 percent of those aged 60 to 69 years. Those aged 70 and older are nearly 30 percent more likely than those aged 60 to 69 years and about 66 percent more likely than those aged 50 to 59 to report using 5 or more prescription medications.

Figure 1. Number of prescription medications by age, NJ adults aged 50 years and older, 2004



Gender

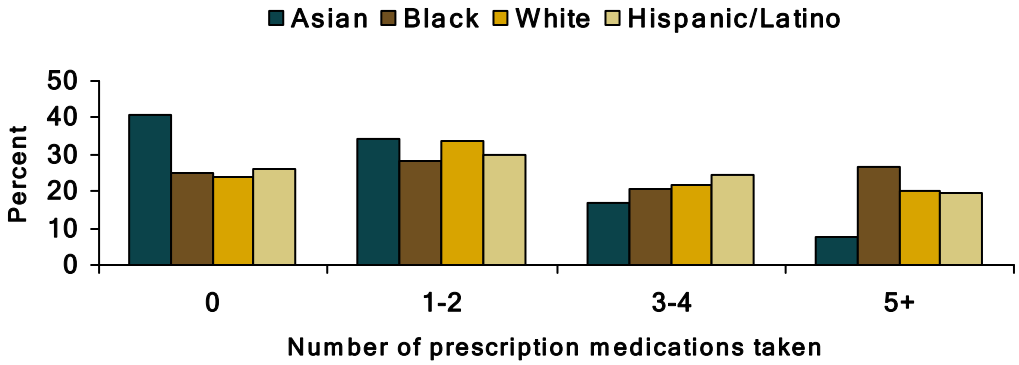
The data revealed significant gender differences in prescription drug use ($p \leq .008$). Overall, females reported taking more prescription medications than males. About 70 percent of males aged 50 and older reported taking prescription medications compared to 80 percent of females. Among those aged 50 to 59, females also reported taking more prescription medications than males. However among those aged 60 years and older, males were more likely than females to report taking 5 or more prescription medications.

Table 1. Number of prescription medications used by gender and age, NJ adults aged 50 years and older, 2004

	0 (%)	1-2 (%)	3-4 (%)	5+ (%)
50-59				
Male	43.8	30.5	17.1	8.6
Female	30.1	38.4	19.0	12.5
60-69				
Male	21.8	33.3	20.1	24.9
Female	18.9	37.4	23.1	20.6
70+				
Male	15.5	25.1	24.9	34.5
Female	11.4	31.0	27.9	29.7
Total				
Male	29.7	29.8	20.1	20.4
Female	20.5	35.4	23.3	20.8

Race and Ethnicity

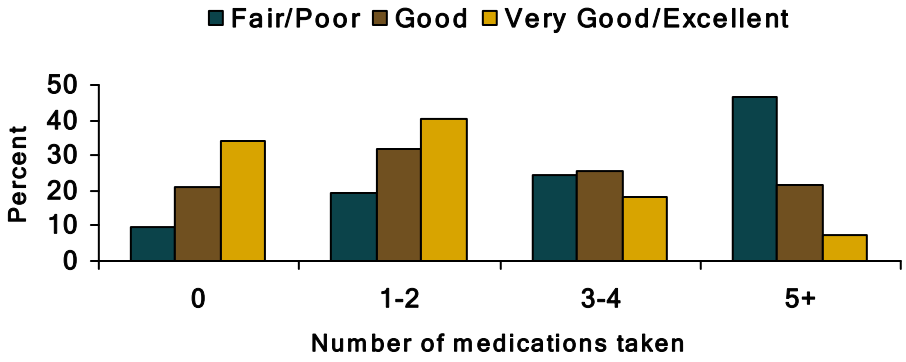
Figure 2. Number of prescription medications, NJ adults aged 50 years and older by race/ethnicity, 2004
(Estimates are age-adjusted using the 2000 US standard population)



There were significant differences in the number of prescription medications used by race/ethnicity ($p \leq .000$). Asians reported the lowest percentage (59%) of prescription drug use and whites reported the highest at 76 percent. Blacks were three and a half times more likely and whites and Hispanics/Latinos were more than twice as likely to report taking 5 or more prescription medications as compared to Asians.

Health Status

Figure 3. Number of prescription medications, NJ adults aged 50 years and older by general health status, 2004



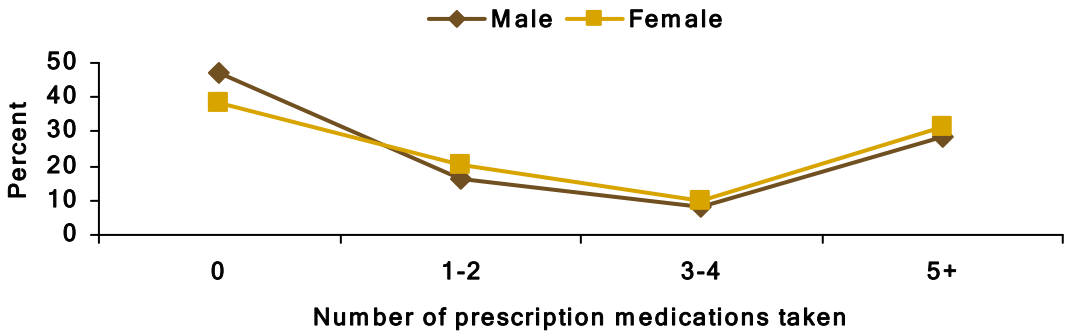
When older adults were asked to report their general health status as fair/poor, good, or very good/excellent, significant differences ($p \leq .001$) in their reply were found based on the number of prescription medications taken. Overall, 90 percent of those reporting fair

or poor health reported taking prescription medications compared to about 66 percent of those reporting very good or excellent health; and 79 percent of those reporting good health. Older adults reporting fair or poor health (46.5%) were six times more likely to be using 5 or more medications than those reporting very good or excellent health (7.5%) and more than twice as likely as those reporting good health (21.6%).

Non-Prescription Drug Use

Gender

Figure 4. Number of non-prescription medications used in the past month by gender, NJ adults aged 50 years and older, 2004



Older adults were also asked about their use of non-prescription medications. There were modest but statistically significant differences between male and female non-prescription medication usage ($p \leq .0001$). About 57 percent of males and 61 percent of females aged 50 and over reported taking non-prescription medications during the past month. In general, females were more likely than males to have taken 1 or more non-prescription drugs in the past month.

Race and ethnicity

Table 2. Use of non-prescription medicine in the past month by race/ethnicity, NJ adults aged 50 years and older, 2004
(Estimates are age-adjusted using the 2000 U.S. standard population)

	%
Asian	50.7
Black	52.2
White	63.1
Hispanic/Latino	27.0
Total	57.5

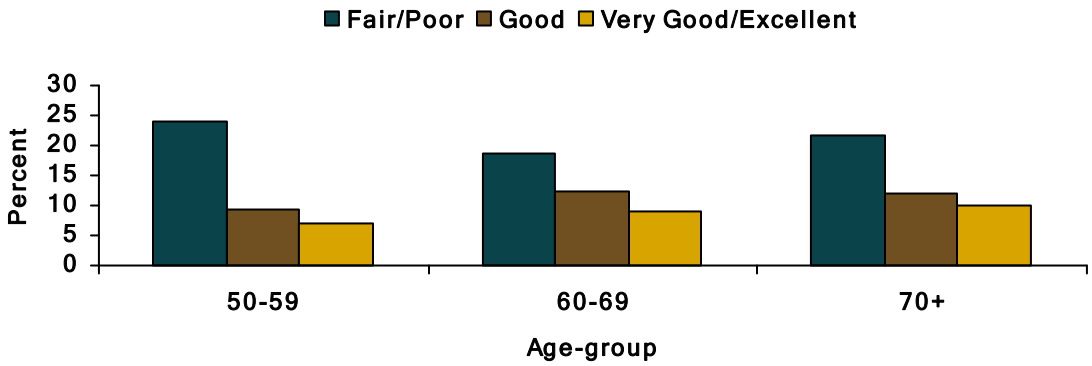
Use of non-prescription medications also revealed significant differences by race/ethnicity ($p \leq .0001$). Hispanic adults aged 50 and older were the least likely to use non-prescription drugs (27%), whites were more than twice (63.1%) as likely as Hispanics to use any non-prescription drugs. Blacks and Asians were approximately twice as likely to use non-prescription drugs compared to Hispanics/Latinos.

Side effects

Table 3. Had significant side effects in the past year by gender, NJ adults aged 50 years and older, 2004				
	50-59 (%)	60-69 (%)	70+ (%)	Total (%)
Male	10.8	10.7	11.5	11.0
Female	11.9	14.2	15.9	14.1
Total	11.4	12.6	14.2	12.8

The reporting of side effects increased somewhat with age. At all ages, females were more likely to report significant side effects from prescription medications taken in the past year.

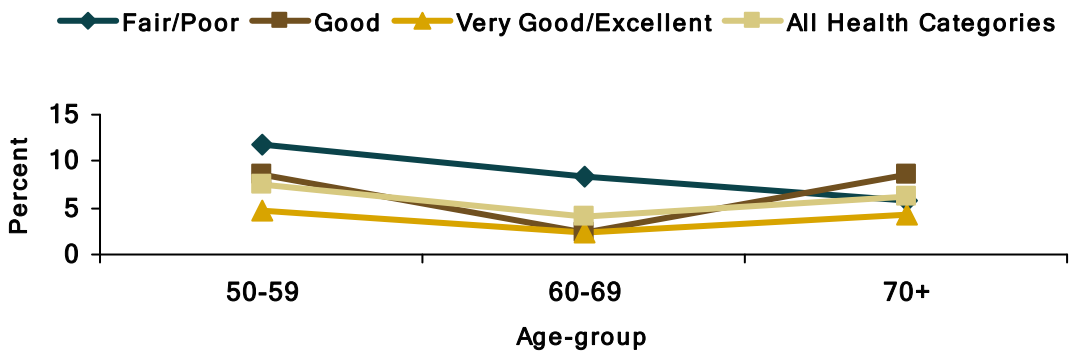
Figure 5. Had Significant side effects in the past year, NJ adults aged 50 and older by general health status, 2004



Significant differences were also found by general health status for those reporting significant side effects of medicine taken in the past year ($p \leq .0001$). For all age groups those reporting fair or poor health status were over two times more likely to report having significant side effects compared to those in very good or excellent health status. For those aged 50-59 years, those in fair to poor health were more than three times as likely to report significant side effects from a medication compared to those in very good or excellent health.

Timing and dosage

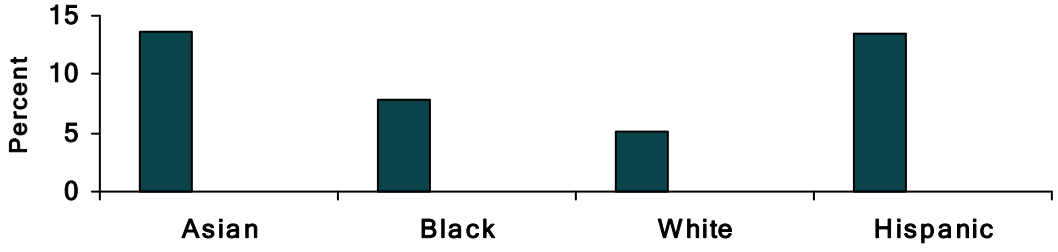
Figure 6. Had difficulty remembering timing and dosage of medicine in the past year by general health status, NJ adults aged 50 years and older, 2004



The proportion of older adults reporting difficulty with the timing and dosage of medications was relatively low, and declined with age. About six percent of those aged 50 years and older reported having difficulty remembering the timing and dosage of their medications. Though the number of seniors reporting difficulty overall was low, there were significant differences by general health status, those with poorer self-reported health were more likely to report difficulties with medication dosage and timing. ($p \leq .0004$). Among those aged 60 to 69 years, those reporting fair or poor health status were over three times more likely to report difficulty with timing and dosage as compared with those reporting very good or excellent general health status. The difference in difficulty by health status largely disappeared in the oldest age group.

Figure 7. Had Difficulty remembering timing and dosage of medicine in the past year by race/ethnicity, NJ adults aged 50 years and older, 2004

(Estimates are age-adjusted using the 2000 U.S. standard population)



Among those reporting difficulty remembering timing and dosage, significant differences were also seen by race and ethnicity ($p \leq .0001$). Hispanics (13.5%) and Asians (13.7%) reported the highest percentage of difficulty remembering timing and dosage, followed

by blacks (7.8%) and whites (5.1%). Hispanics and Asians were more than twice as likely as whites and almost two times more likely than blacks to report difficulty with remembering timing and dosage of medicine taken in the past year.

Concerns about safety

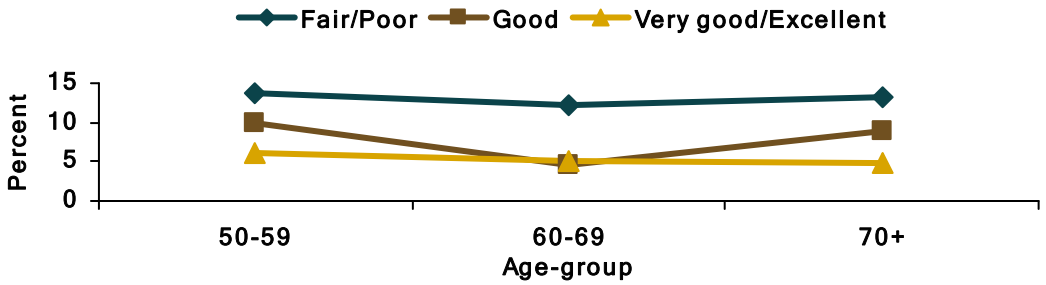
Table 4. Unsure about the safety of medicine used in the past year by gender, race/ethnicity, NJ adults aged 50 years and older, 2004

	50-59 (%)	60-69 (%)	70+ (%)	Total (%)
Males	8.1	5.1	10.2	7.9
Females	9.7	8.3	8.4	8.8
Total	9.1	6.8	9.1	8.4
Asian	6.0	*	*	3.3
Black	9.7	7.4	11.0	9.3
White	7.2	6.9	9.4	8.0
Hispanic/Latino	19.8	9.5	5.7	13.3
Any Race	9.1	6.8	9.1	8.4

* Does not meet CDC minimum sample size criterion (i.e., N<50)

In general, older adults in New Jersey were relatively unlikely to report being concerned about the safety of their medications. Less than 10 percent of adults aged 50 and older reported that they were unsure that the prescription medication they had taken during the past year was safe. In general, females were slightly more likely to be unsure about the safety of their medication; but among those aged 70 years and older, males were more likely to report being unsure. This may be related to the fact that males in this age group use more medications than females. Whites (8.0%) were more likely than Asians (3.3%) to be unsure of about the safety of medication taken during the past year. At every age, Hispanics were the most likely to be unsure about the safety of their medication in the past year (13.3%). The difference is greatest among those aged 50 to 59 years.

Figure 8. Unsure about the safety of medicine in the past year by age and general health status, NJ adults aged 50 years and older, 2004



Views about the safety of medications varied by self-reported health status ($p \leq .0001$). Adults reporting fair or poor health (13.1%) were more than twice as likely as those

reporting very good or excellent health (5.5%) to report being unsure about the safety of the medicine they were taking.

Discussion

This analysis of medication use shows that older adults in New Jersey use many prescription medications, but overall report relatively few medication-related problems, such as serious side effects, problems with timing and dosage, and concerns about safety. Interestingly, while the use of medications increased with age, overall the frequency of reported medication management problems did not rise correspondingly. This may reflect increased experience with medication use, differences in medications used, or potentially decreased awareness of potential problems. In general, females used more medications than males, and also reported more medication management problems, although the reverse was the case for adults aged 70 years and older. Asians reported significantly less medication use as compared with other groups, and Hispanics reported more medication management issues, particularly difficulties with timing and dosage and concerns about safety. Self-reported health status was associated with the number of prescription medications taken, reported side effects and difficulty with timing and dosage. Since medication side effects would be expected to affect self-reported health status, and those with serious underlying health problems may be more likely to take medications which have serious side effects, it is likely that the relationship between health status and medication-related problems is two-directional.

While these results suggest that medication management problems among community dwelling older adults in New Jersey are not widespread, the issue of poly-pharmacy and medication-related problems among seniors is a significant one. Current research indicates that better coordination of care, the use of interdisciplinary teams, and better use of information technology such as prescription drug monitoring programs, can improve medication adherence and safety for this population.[3 A] shortcoming of this analysis is the lack of information about specific types of medications used, specific types of health problems, and a related inability to distinguish psychiatric medication use from medications used for physical ailments. More research is needed to identify the specific health conditions and combinations of medications which are most likely to result in medication-related problems among older adults.

References

1. Chutka DS, Takahashi PY, et al. Inappropriate Medications for Elderly Patients. Symposium on Geriatrics. Mayo Clinic Proc. 2004,79:122-139.

2. Goulding MR. Trends in Prescribed Medicine Use and Spending By Older Americans, 1992-2001. Aging Trends, No. 5. Hyattsville, Maryland: National Center for Health Statistics

3. Avorn Jerry. Polypharmacy: A New Paradigm for Quality Drug Therapy in the Elderly? Archives of Internal Medicine/vol 164, October 2004.

4. Cornelius Christel. Drug use in the elderly: risk or problems. Current Opinion in Psychiatry 2004, 17:443-447.

5. SUDAAN statistical software package (Research Triangle Institute, Research Triangle Park, NC, 2005).