

REPORTING USE OF PRESCRIPTION DRUGS FOR STIGMATIZING CONDITIONS:
AN EVALUATION OF DATA ACCURACY

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Overview

Elderly persons are often unable to accurately report either their expenditures for prescription drugs or the number of times they had their prescription drugs filled (Berk et al., 1991). This problem may be especially difficult when drugs for stigmatizing conditions are considered. Marquis et. al (1981) note that obtaining accurate data from respondents about embarrassing conditions requires the respondent to understand what the interviewer wants reported and to be willing to report it. Many respondents are not motivated to reveal embarrassing information to the interviewer.

There are many reasons why respondents may be reluctant to report embarrassing conditions. One of the earliest studies on stigmatizing conditions (Cannell, 1961) found significant underreporting of hospitalizations for stigmatizing conditions. The study noted that response bias occurs "when the motives or goals of the respondents are better served by inaccurate reporting" (Cannell, 1961). Thus, reported hospitalizations for alcoholism, mental disorder, etc. may not be reported because of their presumed "antisocial" nature. Cannell,

notes that "other conditions such as breast amputations, reproductive organ disorders and the like may be embarrassing to the respondent, may threaten her self image, or may be considered to personal to discuss." A review of published research (Marquis, et. al. 1981) presents supporting evidence that certain conditions such as mental illness or diseases of the genitourinary are underreported in household surveys.

Relatively little research has been reported on the accuracy of survey data about use of prescription drugs for stigmatizing conditions. Harlow and Linet (1989), report the results of thirteen studies examining patient recall of medication. Their overview suggests that studies of contraception use are relatively accurate. Similarly, there was moderate to good agreement between self report and medical records for use of estrogens (Harlow, Linet, 1989, pg. 244). Paganini-Hill and Ross (1982) found that agreement between household records and medical records vary substantially according to type of drug. They found that about 69 percent of respondents accurately recalled use of barbiturates compared to 87 percent who correctly recalled using anti-hypertensive

medications. Since barbiturates may be seen as somewhat stigmatizing, the fact that they are reported less accurately than other medications indicates that some respondents may not be willing to report their use.

Method

In 1989 Project HOPE conducted the Prescription Drug Expenditure Verification Survey (PDEVS). The survey was designed to measure the ability of respondents in household surveys to accurately report their expenditures for prescription drugs. Project HOPE, along with the subcontractor, the Roper Organization, conducted the PDEVS between April and December of 1989. The study involved interviews with elderly persons in five locations using procedures adapted from the 1987 National Medical Expenditure Survey (NMES). Two household interviews were conducted in the PDEVS. The first was conducted in person and the second primarily by telephone, although interviewers could conduct the second round in person whenever it appeared advisable to do so. At the conclusion of the household interview, respondents were requested to sign a permission form authorizing each of the pharmacies where their prescription drugs had been filled to provide the Roper Organization with the name and cost of all prescription drug medication obtained during the survey reference period. Respondents who claimed not to have used prescription drugs during the reference period were asked to sign a form

authorizing their "usual" pharmacy to provide the information they may have failed to recall. Seven hundred and thirty respondents (71%) completed the round one interview while 640 respondents completed the round two interview. About 96 percent of all persons surveyed agree to complete permission forms authorizing us to contact their pharmacies, and data were obtained from all mentioned pharmacies for 87 percent of respondents in the household survey. The design of PDEVS is further discussed in Berk et. al., (1990).

Findings

Match rates were calculated separately for stigmatizing and non-stigmatizing drugs. Stigmatizing drugs include barbiturates, tranquilizers, and anorectal and genital preparations, and urinary control agents. A matched report is one in which the same drug is reported on both the household survey as well as in the pharmacy verification report. A non-match refers to a drug that was reported on the pharmacy but not on the household component. False positives (drugs reported on the pharmacy survey but not on the household survey) are excluded from the analysis because we are interested in trying to measure the likelihood that a respondent will choose not to report a drug purchase. For a report on the overall accuracy of reporting, see Edwards and Berk (1992). Match rates for stigmatizing and non-stigmatizing conditions appear

in Table 1.

Previous analysis of the PDEVS (Edwards and Berk, 1992) indicates that match rates are positively associated with the number of times a prescription is filled. This was expected; a respondent should be more likely to recall use of a drug that has been filled several times rather than one that was only taken for a single episode of illness. When we control for whether or not the drug was stigmatizing, the effect of multiple drug purchase remains. Drugs that are purchased on numerous occasions are much more likely to be reported whether or not the drug was stigmatizing.

For drugs that are only purchased on a single occasion there is little difference in accuracy of reporting for stigmatizing versus non-stigmatizing drugs. Thirty-nine percent of drugs for stigmatizing conditions were matched compared to 41 percent for non-stigmatizing drugs. This difference was not statistically significant. The findings indicate, however, that when analysis is limited to drugs purchased on multiple occasions, drugs for stigmatizing conditions are underreported compared to other drugs. This could suggest that respondents are more reluctant to report chronic stigmatizing conditions than to report drugs purchased for a single episode. A single purchase drug may not pose a major threat to the respondents self image, whereas, long term use of psychotropic or other drugs may prove more embarrassing to the respondent. When multiple

purchase drugs are examined there is agreement between household and pharmacy reports on 79 percent of the events compared to only 59 percent for stigmatizing drugs. Although it is possible that respondents have more difficulty recalling use of stigmatizing drugs, a more plausible explanation is that respondents chose not to discuss their drug purchases with the interviewer.

We also examined whether or not different types of drugs for stigmatizing conditions were reported better than other types. We compared psychotropic drugs including tranquilizers, barbiturates, opium derivatives, and potent synthetic allergestics with non-psychotropic drugs for stigmatizing conditions including anorectal and genital preparations as well as drugs for incontinence. When we examine drugs purchased on multiple occasions, there is virtually no difference between the match rates for non-psychotropic drugs (58 percent) and that for psychotropic drugs (59 percent). There is, however, a dramatic difference in reporting rates for drugs purchased only once. Non-psychotropic drugs were matched only 23 percent of the time compared to 48 percent for psychotropic drugs. This could suggest that psychotropic drugs are less threatening when they are taken on a single occasion. A respondent may not be embarrassed to report short term use of tranquilizers, barbiturates, or potent pain killers, whereas the reporting

of even a single purchase of other types of stigmatizing drugs may represent an event the respondent chooses not to share with the interviewer.

Match rates by the education, race, and gender of the respondent were also examined. Neither education or race was associated with more accurate reporting. It is interesting to note, however, that for drugs purchased on multiple occasions, men report slightly more accurately than women when the drug is for a stigmatizing condition whereas women are slightly better reporters on drugs that are not stigmatizing. Data from the National Medical Expenditure Survey indicate that women are almost twice as likely as men to use psychotropic drugs (Cafferetta and Kasper, 1983). Although our analysis is limited to the elderly, it appears as though the higher rates reported by women do not reflect measurement bias since women, if anything, are somewhat more likely than men to conceal the use of such medications from the interviewer.

Discussion

Survey methodologies must continue to develop methods for improving the accuracy of prescription drug reporting. A previous report on these data (Edwards and Berk, 1992) suggested several design approaches for improving the accuracy of household reports of prescription drug purchases by the elderly. These approaches focused in particular on the under-reporting of single-purchase

drugs, presumably due to recall error, and may be less helpful for improving reports of potentially stigmatizing drugs, which seem more likely attributable to respondents embarrassment. Sudman and Bradburn (1991) describe several methods for improving the accuracy of responses to threatening questions about behavior, including randomized response, deliberate loading of questions, etc. These approaches are not directly applicable to the series of questions asking about prescription drugs, however, since most prescription drugs are not particularly stigmatizing. If in fact stigmatizing drugs are reported significantly worse than non-stigmatizing drugs, verification would appear to be a more promising remedial tactic rather than modifying questions. Alternatively, it may be possible to improve reporting of stigmatizing drugs by focusing specifically on psychotropic, anorectal, and genital preparations in an additional question series. Such an approach may also, however, effectively increase the stigma of reporting the purchase of these drugs. Until effective methodologies are tested to increase the accuracy of household reporting, verification surveys should be incorporated into prescription drug studies. This is particularly important when interviewing an elderly population about health events they are uncomfortable reporting.

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Table 1: Match Rates Between Household and Pharmacy Reports for Potentially Stigmatizing and Non-stigmatizing Prescription Drugs Taken by Elderly Persons.

	Drugs Purchased Once		Drugs Purchased > Once	
	(N)	% Match	(N)	% Match
Non-stigmatizing	(726)	40.6	(975)	79.4
Stigmatizing	(132)	38.6	(112)	58.9

Chi sq = 23.94
p=<.001

Table 2: Match Rates for Psychotropic and Non-Psychotropic Potentially Stigmatizing Drugs

	Drugs Obtained Once		Drugs Obtained > Once	
	(N)	% Match	(N)	% Match
Non-psychotropic	(49)	22.5	(31)	58.1
Psychotropic	(83)	48.2	(81)	59.3

Chi sq = 8.61
p=.003

Table 3: Match Rates between Household and Pharmacy Reports by Education, Race and Gender.

	<u>Single Purchase</u>		<u>Multi Purchase</u>	
	Stigmatizing	Other	Stigmatizing	Other
<u>Education</u>				
≤12 years	41.1%	40.9%	59.3%	79.6%
(N)	(107)	(570)	(91)	(774)
>12 years	29.2%	40.8%	60.0%	79.8%
(N)	(24)	(147)	(20)	(193)
	N.S.	N.S.	N.S.	N.S.
<u>Race</u>				
White	40.0%	42.1%	60.2%	79.9%
(N)	(115)	(598)	(98)	(791)
Non-white	29.4%	33.9%	50.0%	76.6%
(N)	(17)	(121)	(14)	(175)
	N.S.	p<.10	N.S.	N.S.
<u>Gender</u>				
Male	30.4%	36.1%	67.7%	76.3%
(N)	(46)	(249)	(34)	(358)
Female	43.0%	43.0%	55.1%	81.2%
	(86)	(477)	(78)	(617)

N = number of drugs