A review of the validity of self-reported arrests among persons with mental illness

Annette Crisanti[a], Ranilo Laygo[b] and John Junginger[c]

Purpose of review

The use of self-report as a measure of involvement with the criminal justice system is widespread in mental health services research. However, the accuracy of the self-reporting of sensitive information is questionable. Complicating the issue further is that self-reports from persons with serious mental illness may be influenced by cognitive distortions. Consequently, questions about the accuracy of these types of reports among a population with serious mental illness continue to be raised. The purpose of this article is to provide an overview of the research and the issues relating to the validity of self-reported arrests among persons with serious mental illness. This review is timely and warranted because of national and local reliance on criminal behavior as an indicator of the efficacy of treatment programs, such as assertive community treatment and jail diversion.

Recent findings

Our literature review found no apparent reason to discourage the use of self-reports to collect information on involvement with the criminal justice system among persons with serious mental illness. However, the research on which we base this conclusion is thin. Further research needs to determine the degree of validity of self-reported arrest history, and the extent to which accuracy varies among various clinical and social populations.

Summary

Our review of the factors that undermine validity and our suggestions for minimizing bias should aid in the critical appraisal of research that has relied on self-reported criminal behavior, and also the design of future studies.

Keywords

arrest, self-report, serious mental illness, validity

Curr Opin Psychiatry 16:565–569.

[a]University of Hawaii, Manoa, Hawaii, [b]ORC Macro, Atlanta, Georgia and [c]University of Maryland School of Medicine, Baltimore, Maryland, USA

Correspondence to Annette Crisanti, PhD, State of Hawaii Department of Health, West Hawaii Mental Health Service, PO Box 664, Kealakekua, HI 96750, USA
Tel: +1 808 895 0440; fax: +1 808 322 4817; e-mail: crisanti@hawaii.edu

Current Opinion in Psychiatry 2003, 16:565–569

Abbreviation

SMI serious mental illness

0951-7367

Introduction

Involvement with the criminal justice system has been identified as a 'major performance indicator' in mental health services research [1]. The methods for measuring this indicator vary, but many studies rely on self-report. All self-reports are subject to response error. However, validation studies indicate that self-reports about threatening topics, in this case illegal behavior, are subject to more than the usual errors caused by faulty recall and the tendency for respondents to present themselves in a socially desirable way. Asking persons for criminal justice information from persons with serious mental illness (SMI) who may be experiencing distortions in reality and lacking insight complicates the issue further.

The purpose of this paper is to provide an overview of the research and the issues relating to the validity of self-reported arrests among persons with SMI. These issues include the terminology and methodology of validation studies, factors that impact validity, and strategies that can be used to increase the trustworthiness of such data. This review is timely and warranted because of the national and local reliance on criminal behavior as an indicator of the efficacy of treatment programs, such as assertive community treatment and jail diversion [1]. In addition, this information should aid in the critical appraisal of research that has relied on self-reported criminal behavior and in the design of future studies.

To access the literature on the validity of self-report, searches of Medline, PsychInfo and Sociological Abstracts were conducted using relevant keywords (e.g. reliability, validity, self-report, arrest, criminal behavior). Reference lists of articles were also inspected for material not detected by these searches. There are two cautions about our review. First, our discussion focuses on arrest rates, which may reflect involvement with the criminal justice system, but are not measures of the true prevalence of criminal behavior [2,3]. Secondly, this review focuses only on validity. Reliability was not addressed because we were unable to find an investigation of the reliability of self-reported arrests among persons with SMI.

Overview of terminology and methodology

Validity refers to the 'degree to which a measurement measures what it purports to measure' [4]. Validity is measured as a continuous variable, which means that questions about the validity of self-report cannot be

answered simply yes or no. The type of validity relevant to this review is called 'criterion' or 'empirical' validity. Criterion validity compares a measure with some external indicator or standard and can be: (1) concurrent, in which the measure and the criterion are contemporaneous; or (2) predictive, in which the measure predicts a criterion that occurs in the future [3]. For a more thorough review of validity refer to Nunnally [5]. Most of the studies in this area assess concurrent validity by comparing self-reported arrests with official arrest records. Despite many limitations [6,7], official records offer a relatively inexpensive, unobtrusive strategy for checking on the accuracy of self-reported arrest.

Many validity studies have used terminology developed by Marquis [8]. A 'complete design' in a validity study means that positive and negative interview responses are verified against official records, which are considered to be accurate. As shown in the 2×2 table in Table 1, four potential groups of individuals can be identified: (1) those who report criminal behavior and who also have an arrest record (accurate offenders or true positives); (2) those who report criminal behavior but do not have an arrest record (inaccurate non-offenders or false positives); (3) those who report no criminal behavior but have an arrest record (inaccurate offenders or false negatives); and (4) those who report no criminal behavior and do not have an arrest record (accurate non-offenders or true negatives). The term 'positive bias' is also used to describe the situation in which respondents report arrests that do not appear in official records [9]. Over-reporting is measured as the proportion of inaccurate non-offenders out of all 'true non-offenders'. Under-reporting is measured as the proportion of inaccurate offenders out of all 'true offenders'. Two measures of agreement have been used in studies of the validity of self-reported criminal behavior. The first is overall agreement, which is the proportion of accurate offenders and accurate non-offenders out of the total $(a + d/n) \times 100$. The second is kappa, which is a measure of the degree of agreement between different measures of the same variable [10].

Table 1. Overview of methodological concepts in a validity study

	According to official data		
According to self-report	Offended	No offence	Total
Offended	a	b	a + b
No offence	c	d	c + d
Total	a + c	b + d	n
Proportion of under-reporters		$c/(a + c) \times 100$	
Proportion of over-reporters		$b/(b + d) \times 100$	
Proportion of offenders according to interviews		$(a + b)/n \times 100$	
Proportion of offenders according to official data		$(a + c)/n \times 100$	

Research on the validity of self-reported arrests

Correlations between self-report of criminal behavior and official reports of crime in the general offender population vary between 0.66 [11] and 0.80 [12]. Research on the validity of self-reported arrests among persons with SMI is extremely rare. Our literature search identified only three studies, and all three assessed criterion-related validity using official records of police contact as the external indicator.

Convit *et al.* [13] compared self-reported arrests with official arrest records for 41 psychiatric inpatients. Sixty-six per cent of the subjects gave accurate reports, and 12% denied having arrests when their record showed arrests (i.e. false negatives). The extent of over-reporting was fairly high: 22% reported arrests when official records showed none (i.e. false positives). The authors concluded that the high rate of over-reporting may have been partly caused by distortions in perception because many of the subjects who over-reported had a diagnosis of schizophrenia.

Nieves *et al.* [6] explored the effects of SMI and substance abuse on the validity of self-reported criminal history data, as given by clients of a psychiatric probation and parole service. The correlation between the self-reported number of lifetime arrests and official report number of lifetime arrests was 0.67 ($P < 0.01$). Subjects diagnosed with schizophrenia and mania were slightly more likely to under-report their arrest histories, which is opposite to the findings of Convit and colleagues [13]. Individuals with antisocial personality disorder were significantly more likely to over-report the number of arrests. The authors' interpretation of this latter finding was that persons with antisocial personality disorder may have less internal motivation to meet social desirability standards, and may therefore be less likely to feel pressure to minimize illicit or deviant behaviors.

Modestin and Ammann [14] examined the validity of infractions of the law reported in the charts by comparing the accounts with official records of their convictions, regardless of whether the infractions were followed by arrest. The sample included 909 male psychiatric inpatients suffering from schizophrenia, mood disorder, and alcoholism. There was consistency between the report of criminal behavior abstracted from the clinical chart and the official record for 69% of the sample. The ratio of false negative to false positive patients differed among the three diagnostic groups, with a strong tendency for alcoholic individuals not to report their criminality (i.e. false negatives) and, consistent with

findings by Convit and colleagues [13], a great likelihood for individuals with schizophrenia to report criminality not officially recorded (i.e. false positives).

Threats to validity

Much of what we know about sources of invalidity comes from studies on the validity of self-report among drug users [7]. However, many of the problems that typically plague the accuracy of self-reports of drug use are also true of self-reports of arrest history. In her discussion of the validity of self-reported drug use, Harrison [15] concluded that valid self-reporting is a function of three factors: (1) the recency of the event; (2) social-desirability; and (3) nuances of data collection methodology. These factors will be discussed here with an added fourth category to capture 'miscellaneous factors' identified through our literature review. The following discussion is by no means comprehensive, but should provide a notion of why self-report data may be inaccurate. Characteristics such as sex, age, and race are not addressed because there is little evidence that these variables have an effect on the validity of self-reports [3,7].

The recency of the event

Even without a deliberate intention to distort facts, memory for any behavior is unlikely to be perfect, particularly over longer periods. Research has shown that recent events are recalled with greater accuracy than more distant ones [3,7]. The telescope effect is often referred to as one of the explanatory mechanisms behind the misreporting of factual events, especially over-reporting. As defined by Langenbucher and Merrill [7], forward telescoping refers to the tendency to remember events in the middle distance of the past (say 18 months ago) as having occurred more recently (say 9 months ago).

Social desirability

Social desirability response bias occurs when respondents give answers that they think are socially acceptable; this bias is much more likely to occur for socially disapproved behaviors, such as criminal activity [16]. Respondents either consciously 'fake good' or 'fake bad', but the former is the more likely type of bias for socially disapproved behaviors such as crime. A related issue is when respondents may feel motivated to conceal the truth if they perceive negative consequences associated with reporting certain behaviors, such as the cessation of treatment or legal consequences.

Nuances of data collection methodology

For a respondent to provide accurate information, he or she must, at a minimum, comprehend the question being asked, recall information from memory, make decisions about the accuracy of the information recalled, and format an answer [17]. Errors are possible at each of these stages [18]. Babor *et al.* [19] noted that the validity of self-reports will vary considerably with the context in which data are collected. For example, treatment settings and criminal justice settings may provide a disincentive to honest reporting if individuals fear that an admission of criminal activity will result in disciplinary action, violation of probation or parole, or a return to court or jail. This has important implications for evaluations of jail diversion programs, for example, in which a person's release on supervision may be modified or revoked if contacts with the criminal justice system are revealed.

Additional factors

Other threats to the validity of self-reports specific to SMI or other offending populations include: (1) The illness itself or substance abuse among persons with SMI might affect the respondent's ability or willingness to be truthful [6]; (2) Offenders who report longer and more active criminal histories are more likely to provide poorer quality data [20–22]; (3) Those who have been imprisoned previously might have a heightened concern about returning to prison, and may thus be more reluctant to disclose recent criminal behavior; and (4) Respondents may be unable to report accurately, particularly when questions involve detailed accounts of the types of charges and the frequency of arrests. Higher rates of distortion have been shown with items that request exact information (e.g. age at first arrest, number of arrests) than with more general questions such as 'Have you been arrested?' [23].

With all of these potential threats to the validity of self-report, why is this method used to collect sensitive data? Although these questions are more invasive than relying on administrative data, self-report allows researchers, administrators, and evaluators to collect data easily and with little cost and delay. In addition, evidence shows that events that occur very frequently or carry a high degree of personal importance, as we can assume incidences of involvement with the criminal justice system would, are less prone to memory failure than less frequent or salient events, and would therefore be less likely to be under-reported [24].

The major concern with invalid self-reported data is 'measurement' or 'information' bias, which is defined as a 'flaw in measuring exposure or outcome data that results in different quality (accuracy) of information between comparison groups' [4]. As noted by Hennekens and Buring [25], 'misclassification is often a concern when the fact of either having experienced or not having experienced the outcome event is likely to affect the accuracy with which subjects recall relevant exposures (as in recall bias)'. This might occur, for example, in a study of the characteristics of persons referred to a jail

diversion program if persons participating in the program are more likely to recall previous arrests than those not participating (i.e. the control group).

Strategies to increase the validity of self-reports

Several strategies can be used to increase the accuracy of self-report. These strategies pertain to the characteristics of the interview and the dynamics between the interviewer and interviewee.

Characteristics of the interview

The interview should be conducted in a private and safe setting. Information concerning the study, which establishes its credibility, may help to emphasize the importance of providing accurate information. Research on the accuracy of the self-report of drug use has indicated that the most important aspect encouraging honesty is the use of self-administered questionnaires and answer sheets [15]. With this strategy, respondents do not speak their answers aloud or show their answers to the interviewer. Telephone call-in or even key-activated query and response systems (computer-assisted self-interviewing) also enhance feelings of privacy and anonymity. If paper and pencil questionnaires are used, strategies can be employed that encourage honesty even further, such as having respondents place their answer sheets into envelopes (with no identifying information), which are then immediately sealed and either handed or mailed to the researcher.

The timeline follow-back technique has been shown to improve the validity of self-reports by creating a calendar of recent anchor events in the respondent's life and then framing questions within a period of time on the calendar [26]. Providing cues or reference points, such as important public or personal life events that act as memory landmarks, reduces recall errors [24,27]. Because of the sensitive nature of some questions, Saunders [16] recommended procedures that can be used to adjust self-reports for social desirability bias (e.g. the use of a separate scale to assess levels of social desirability). Other strategies that may reduce errors include: asking respondents to recall events only after the age of 18 years; shortening the time period for the recall; ensuring that the respondent understands the interviewer's question; and asking about convictions rather than arrests, police contacts or criminal behavior.

Dynamics regarding the interviewer and interviewee

Neutral and independent personnel (i.e. researchers) should collect data rather than program staff (e.g. case managers). The interviewer should take great care in assuring respondents that there will be no negative consequences for truthful reporting. It should be explained that anonymity and confidentiality will be protected by: (1) withholding their identities from all persons not connected with the research; (2) not connecting individual names with specific responses; (3) presenting all data in aggregate form; and (4) obtaining a Federal Certificate of Confidentiality where applicable.

Discussion

Accuracy is obviously important in any study relying on self-report, but it becomes even more important when the cognitive capacities of the respondents are questionable or there are strong motives to be less truthful; for example, when asking about criminal behavior. Although this paper addressed several issues, including the sources of invalidity and strategies to increase accuracy, the central question is whether the validity of self-reported criminal arrest history among persons with SMI is acceptable. Our literature review has shown no reason to reject the use of self-report data among SMI populations. However, having said that, the research on which we base this opinion is thin. All three applicable studies we identified were in agreement that the overall accuracy of self-reports of criminal activity among populations with mental illness is significantly better than chance. The accuracy of reports was shown to vary by diagnoses, but the findings have been inconsistent. More research needs to be performed to determine with confidence the degree of validity of self-reported criminal arrest history and the extent to which accuracy varies among various clinical and social subgroups (e.g. psychiatric diagnoses, dual diagnosis, homeless).

Other important issues relevant to questions of self-report validity are the circumstances that increase the likelihood of under or over-reporting, and what can be done to minimize these biases [7]. This review identified factors that reduce validity, and offered strategies to minimize bias and encourage accurate reporting. A limitation is that these findings and suggestions were abstracted mostly from the research on the validity of self-reports among drug users. Because self-reported involvement with the criminal justice system will probably remain the primary mode of data collection in the evaluation of mental health services for persons with SMI, more information is needed on factors that affect the credibility of this information within an SMI population. We should also be interested in identifying the factors that can be manipulated within surveys to increase the validity of the self-report of sensitive information. As stated by Knight *et al.* [28] 'Self-report can provide valuable information to researchers, but only to the degree that it can be viewed as being credible and consistent with other verifiable measures.'

In this paper, we have noted some of the inherent methodological advantages of self-report data collection. What is needed now is greater empirical support for its

validity against a relevant variety of external criteria. In the meantime, the strategies we have suggested to minimize bias and enhance the accuracy of self-report data would seem to ensure at least adequate validity for most of its uses; a more confident statement awaits further research.

References

1 Gonzalez O, Hall J, Pandiani J. The 16-state indicator pilot grant project: selected performance indicators and implications for policy and decision-making. Manderscheid RW, Henderson MJ (editors). Center for Mental Health Services. Mental Health, United States, 2000. DHHS publication no. (SMA)-1-3537. Washington, DC: Superintendent of Documents, US Government Printing Office; 2001. pp. 231–247.

2 Monahan J, Steadman HJ. Crime and mental disorder: an epidemiologic approach. In: Crime and justice: an annual review of research, vol. 4. Tornry M, Morris N (editors). Chicago: The University of Chicago Press; 1983. pp. 145–189.

3 Maxfield MG, Luntz Weiler B, Spatz Widom C. Comparing self-reports and official records of arrests. J Quantit Criminol 2000; 16:87–110.

4 Last JM. A dictionary of epidemiology, 3rd ed. New York: Oxford University Press, Inc.; 1995.

5 Nunnally JC. Psychometric theory. New York: McGraw-Hill; 1967.

6 Nieves K, Draine J, Solomon P. The validity of self-reported criminal arrest history among clients of a psychiatric probation and parole service. J Offender Rehabil 2000; 30:134–151.

7 Langenbucher J, Merrill J. The validity of self-reported cost events by substance abusers. Limits, liabilities, and future directions. Eval Rev 2001; 25:184–210.

8 Marquis K. Inferring health interview response bias from imperfect record checks. In: Proceedings of the 1978 American Statistical Association Meeting. Washington, DC: American Statistical Association; 1978.

9 Marquis KH. Quality of prisoner self-reports: arrest and conviction response errors. Santa Monica CA: Rand; 1981.

10 Cohen J. A coefficient of agreement for nominal scales. Educ Psychol Measurement 1960; 20:37–46.

11 Wyner G. Sources of response error in self-reports of behavior. Dissertation Abstracts International 1977; 4653–4654.

12 Hindelang M, Hirschi T, Weis J. Measuring delinquency. Beverly Hills, CA: Sage; 1981.

13 Convit A, O'Donnell J, Volavka J. Validity of self-reports of criminal activity in psychiatric inpatients. J Nerv Ment Disord 1990; 178:48–51.

14 Modestin J, Ammann R. Two methods of authenticating past criminal conduct by psychiatric inpatients: a comparison of clinical chart reports and criminal records. Med Law 1995; 14:313–320.

15 Harrison LD. The validity of self-reported data on drug use. J Drug Issues 1995; 25:91–111.

16 Saunders DG. Procedures for adjusting self-reports of violence for social desirability bias. J Interpers Violence 1991; 6:336–344.

17 Tourangeau R. Cognitive sciences and survey methods. In: Cognitive aspects of survey methodology: building a bridge between disciplines. Jabine TB, Straf ML, Tanur JM, Tourangeau R (editors). Washington, DC: National Academy Press; 1984. pp. 73–101.

18 Jobe JB. Cognitive processes in self-report. In: The science of self-report: implications for research and practice. Stone AA, Turkkan JS, Bachrachy CA, Jobe JB, Kurtzman HS, Cain VS (editors). Mahwah, New Jersey: Lawrence Erlbaum Associates; 2000 pp. 25–28.

19 Babor TF, Brown J, DelBoca FK. Validity of self-reports in applied research on addictive behaviors: fact or fiction? Behav Assess 1990; 12:5–31.

20 English K, Mande MJ. Measuring crime rates of prisoners. Denver: Division of Criminal Justice, Colorado Department of Public Safety; 1992.

21 Mande MJ, English K. Individual crime rates of Colorado prisoners. Denver: Division of Criminal Justice, Colorado Department of Public Safety; 1988.

22 Simon L. Are the worst offenders the least reliable? Stud Crime Crime Prevent 1999; 8:210–224.

23 Harrell AV. The validity of self-reported drug use data: the accuracy of responses on confidential self-administered answer sheets. The validity of self-reported drug use: improving the accuracy of survey estimates. NIDA Research Monograph, Number 167; 1997. pp. 37–58.

24 Loftus EF, Marburger W. Since the eruption of Mt St Helens, has anyone beaten you up? Improving the accuracy of retrospective reports with landmark events. Memory Cognit 1983; 11:114–120.

25 Hennekens CH, Buring JE. Epidemiology in medicine. Boston: Little, Brown and Co.; 1987.

26 Sobell LC, Sobell MB. Validity of self-reports in three populations of alcoholics. J Consult Clin Psychol 1978; 46:901–907.

27 Anglin MD, Hser YI, Chou CP. Reliability and validity of retrospective behavioral self-report by narcotics addicts. Eval Rev 1993; 17:91–108.

28 Knight K, Hiller ML, Simpson DD, Broome KM. The validity of self-reported cocaine use in criminal justice treatment sample. Am J Drug Alcohol Abuse 1998; 24:647–660.