

Overview

Form 90 is a family of assessment interview instruments designed to provide primary dependent measures of alcohol consumption and related variables. It is a structured interview procedure that yields quantitative indices of alcohol consumption during a specified period of time. The same interview format is used for pretreatment evaluation and for followup assessment, although instructions vary slightly and separate forms are used at intake and followup.

The retrospective assessment “window” being queried is variable at both intake and followups. At intake, the window begins 89 days before the client’s last drink (with the last day of drinking being the 90th day) and extends through the day before the interview for outpatients, or through the day before admission for inpatients. At followup, the window extends from the day of the preceding interview to the day before the current interview, allowing for variations in assessment windows due to scheduling.

The desired result is a continuous daily record of drinking and documentation of related variables from a 90-day baseline period through the last followup point.* An experienced interviewer will be able to complete this interview in less than 45 minutes on average, though complicated drinking patterns, talkative respondents, and larger assessment windows can take longer. A totally abstinent client at followup, on the other hand, may require only 10–15 minutes. Across 1,726 intake interviews conducted in a major clinical trial, the average length of time required for administration of the full Form 90-AI (client intake interview) was 41 minutes.

History and Description

The Form 90 family of instruments was originally developed for use in Project MATCH, a multisite clinical trial of three psychological treatments for alcohol abuse and dependence, funded by the National Institute on Alcohol Abuse and Alcoholism. This team of 23 collaborat-

* For other applications, it may be desirable to sample a fixed period of time (e.g., the prior 90 days) at all assessment points. This simplifies data entry and analysis but leaves gaps of varying length between (or in some cases, overlapping) records. Form 90 is adaptable to either approach, and choice of strategy should be guided by the types of analyses anticipated (e.g., time-to-event analyses).

ing investigators, known as the Project MATCH Research Group (1993), set out to develop a hybrid approach combining the strengths of several prior strategies (Miller and Del Boca 1994).

A calendar base is used as in the timeline followback method (Sobell et al. 1980; Sobell and Sobell 1992), but a broader range of behavior is quantified in greater detail than in prior timelines. To streamline the detailed reconstruction of drinking, recurrent weekly and episodic patterns are quantified in grid format, as in the Drinker Profile (Miller and Marlatt 1984), and these grids are then folded into the calendar. Finally, other variables of interest (treatment services, medications, work and education, self-help group attendance, and other drug use) were selected from and defined in a manner similar to the Addiction Severity Index and Treatment Services Review of McLellan et al. (1990).

A parallel form was constructed for collateral interviews to obtain corroborating data. Both client and collateral interviews can be conducted by telephone as well as in person, although telephone interviews pose special challenges. The difficulties involved in telephone reconstruction of a calendar make it highly desirable that as many client interviews as possible be conducted in person. In cases where only brief telephone contact may be possible at followup, a much abbreviated form is used to obtain the most crucial outcome information before attempting the longer interview. The Form 90 family thus comprises five instruments:

- 90-AI Client intake interview (in person)
- 90-AF Client followup interview (in person)
- 90-AT Client followup interview (by telephone)
- 90-AQ Quick client followup interview
- 90-ACS Collateral interview (intake or followup, usually by telephone)

This version of the Form 90 manual and instruments has been modified based on experience in Project MATCH. An archival version of the instruments and manual, exactly as used in Project MATCH, is available.* MATCH-specific instructions have been removed from the current version in order to provide instruments appropriate for more general use. Changes in format have also been made to facilitate administration, reduce time demands, and improve data management.

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Because interviewer computations are error prone, we have shifted the protocols away from hand calculations. Available software packages for data entry and automatic variable calculation are described at the end of this chapter. The collateral interview (Form 90–ACS) contained in this manual is a simplified version developed for 3-year followups in Project MATCH. This was substituted because the more detailed 90–AC was found to be unduly laborious for both interviewers and collaterals, and the simpler global questions suffice for most purposes.

Other changes could be made, but we elected to retain the original format to maintain comparability with the national data base collected in Project MATCH, which offers a large treatment sample against which other samples can be compared (Tonigan et al. 1995; Miller and Brown 1995). One such change that was considered but rejected was replacing the steady pattern grid with a simpler timeline calendar (e.g., Sobell and Sobell 1994). The grid was retained as an option because completion of a timeline calendar frequently involves ascertaining consistent patterns, and the grid offers a structured method for doing so. Interviewers may choose to bypass the grid method depending upon the nature of the client's drinking behavior. In either approach, the desired end product is a continuous calendar. The Form 90 procedures provide a degree of flexibility as the interviewer adapts to varying drinking styles and, as reported below and elsewhere (e.g., Tonigan et al. 1995), yield reliable estimates of drinking variables.

Limitations

Some caveats are important to consider regarding the Form 90. Both the primary strengths and the weaknesses of Form 90 have to do with its complexity. A range of detailed information is collected, which necessarily increases the likelihood of measurement error. Although current psychometric data generally reflect excellent reliability and validity of Form 90, these data were obtained by interviewers who were highly trained, certified, and closely supervised throughout the Project MATCH trial. It has been our experience that without such training, the reliability of Form 90 data is likely to be seriously compromised.

Before embarking on the use of an extensive and time-intensive interview such as this, it is prudent to ask whether information of this complexity is required. Alternative reliable and straightforward alcohol-focused timeline instruments are available (e.g., Sobell and Sobell 1994). A simpler quantity-frequency approach may yield sufficiently comparable global measures to meet some assessment needs (Grant et al. in press). It seems unlikely, for example, that an interview of this complexity would be optimal for routine clinical assessment purposes. Form 90 was designed for use in complex clinical research to yield a range of outcome and mediating variables amenable to a variety of data analytic strategies. When data with this degree of breadth and

resolution are needed, use of the Form 90 family of instruments is recommended.

Statistics Available From Form 90

A wide variety of statistical variables can be derived from the Form 90 interview. For example, the following variables can be computed from the drinking calendar:

- Total number of standard drinks (SECs) consumed (Note: U.S. ounces of absolute ethanol consumed can be calculated by halving the number of SECs)
- Total number and percentage of abstinent days and drinking days
- Average number of SECs per drinking day
- Total number and percentage of days in specific consumption categories such as:
 - 0.1–2.0 SECs
 - 2.1–4.0 SECs
 - 4.1–6.0 SECs
 - Over 6.0 SECs
- The peak intoxication (BAC) level for each assessment period, or average BAC level throughout the assessment period
- Time to events such as the first drink or first heavy drinking day
- Longest span of abstinence

When the Form 90 interview is properly administered, sufficiently complete information will be obtained to compute these summary statistics. In Project MATCH, of 1,726 interviews completed at intake, only 5 protocols yielded insufficient data to calculate summary data of weekly alcohol consumption. Other variables commonly of interest can also be derived from Form 90, including:

- Days and categories of health care utilization
- Days of additional treatment received for alcohol/drug problems
- Days of 12-step group (e.g., Alcoholics Anonymous) attendance and religious attendance

- Days employed or in school
- Lifetime and recent use of other drugs in 11 categories
- Days of medication use

Psychometric Properties of Form 90

The design and findings of psychometric evaluations of Form 90 in Project MATCH have been reported in detail elsewhere (Del Boca et al. 1995; Tonigan et al. 1995). Test-retest reliability in three samples was found to be excellent for core alcohol variables including total consumption ($r = 0.91$ to 0.97), drinks per drinking day ($r = 0.88$ to 0.93), percent days abstinent ($r = 0.96$ to 0.98), and percent heavy drinking days ($r = 0.92$ to 0.97).

Test-retest correlations across a 2-day interval were also reasonably high for days worked (0.85 to 0.98), in school (0.93 to 0.99), in own residence (0.74 to 0.99), days of religious attendance (0.79 to 0.98), and days of medical care (0.91 to 0.99). Somewhat greater variability was found for days of psychological treatment (0.63 to 0.99) and days of 12-step group attendance (0.62 to 0.92).

Despite the less precise procedure used to obtain estimates of lifetime drug use in Form 90-AI and 90-AF, test-retest stability was generally high for days of use of the more common categories, including nicotine ($r = 0.94$ to 0.97), cannabis (0.74 to 0.93), cocaine (0.80 to 0.96), tranquilizers (0.89 to 0.96), sedatives (0.92 to 0.98), and inhalants (0.94 to 0.99). Greater instability of reports across interviews was found for days of hallucinogen (0.68 to 0.82), stimulant (0.47 to 0.95), steroid (0.30 to 0.97), and opiate use (0.02 to 0.93), owing in part to the less frequent use of drugs in these categories. Test-retest reliability for estimates of recent (past 90 days) drug use were generally higher than those for lifetime use.

Drinking measures obtained via Form 90 converge with simpler indices of alcohol consumption. In the Project MATCH (1993) sample, for example, clients' reports of the percentage of drinking days during the prior 90 days (on Form 90) were consistent with their reports of drinking days during the prior week on a frequency item from the paper-and-pencil Alcohol Use Disorders Identification Test (AUDIT) for both outpatients ($n = 624$, $r = 0.67$) and inpatients ($n = 152$, $r = 0.71$). This finding is consistent with reported correlations between calendar-based interview data and quantity-frequency questionnaire data (e.g., Grant et al. in press).

Alternate Forms

For some applications, it may be desirable to obtain more detailed calendar-based data for drugs other than alcohol. The 90-AF (client followup) format does not permit, for example, time-to-event analyses

for any drug except alcohol. In clinical and research settings where "relapse" is judged not only by alcohol use but by other drug use as well, equal weight may be given to substance use across categories. Studies of the temporal convergence of alcohol and other drug use would also require a more detailed calendar-based approach for all drugs.

Alternate drug-use forms (Form 90-D instruments) were developed for such purposes, and samples are appended. The amount of detail regarding drinking has been curtailed relative to 90-AI and 90-AF. Given the greater difficulty of specifying the quantity of use for drugs other than alcohol and nicotine, emphasis has been placed on days of use as the calendar-based variable across drug categories. Ancillary procedures similar to those in 90-AI and 90-AF are used to measure quantity of drug use and routes of administration. The steady and episodic pattern grids have been deleted from the 90-D versions, given the complexity of their use with multiple drug categories. Two 90-D forms are included as examples in the appendix:

- 90-DI Alcohol/drug use at baseline
- 90-DF Alcohol/drug use at followup

Supporting Software

Four separate software packages are available to support applications of Form 90. All are offered at minimal cost, with the provision that the originators cannot provide warranty of accuracy, and consultation/support services are not provided (though may be available on a contractual basis).

- The Blood Alcohol Concentration Calculation System (BAC-CuS)¹ was prepared prior to the development of Form 90 (Markham et al. 1993; Matthews and Miller 1979). It runs in IBM-compatible systems and aids in the calculation of standard drink units and the estimation of BAC peaks.
- The Form 90 Database (F90DB)² was designed by the Project MATCH Coordinating Center to combine BACCuS with SPSS components of Form 90 data entry into one package. As a Superbase program, it is divided into 13 separate data bases that allow the user to enter the entire set of respondent data from all versions of the ounce conversion tables, which can be referenced, edited, and revised to fit local standards. This software corre-

¹ Available from Dr. William Miller, Department of Psychology, The University of New Mexico, Albuquerque, New Mexico, 87131-1101.

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sponds to the version of Form 90 that was used in Project MATCH.

- Data entry software³ for Form 90 was written in the M data base programming language (formerly the MUMPS language). Since the M language is highly portable, this software should run with modest modification on a variety of hardware platforms. It allows for full-screen data entry and verification. It retains drinking pattern information as well as standard drink units.
- An IBM-compatible Form 90 software package⁴ was developed by the Research Division of the University of New Mexico's Center on Alcoholism, Substance Abuse, and Addictions (CASAA). It implements an electronic graphical user interface version of the Form 90 interview. The software is capable of tracking an individual's drinking on a daily basis from up to 1 year prior to intake through approximately 10 years of followup. The hardware required is a minimum of a 486-66 DX2 processor with 16 MB of memory. A 90-MHz Pentium with 16 MB is recommended. CASAA's Form 90 software requires installation of SAS for Windows version 6.08 or higher, including the BASE module.

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