METHODOLOGICAL CONSIDERATIONS WHEN EXAMINING USE OF TIME IN THIS POPULATION

A variety of methodologies are available to examine time use of persons with disabilities. As with any population, the primary issues in the choice of a time use methodology are accuracy of the data, invasion of subject privacy and cost of the research (Juster, 1985a; Robinson, 1985). Qualitative methods, including ethnography, random spot visits, and participatory action research, provide rich time use data but are costly and can suffer from lack of scientific validity (Juster, 1985a; Moss & Lawton, 1982; Robinson, 1985). Direct observation is arguably the most accurate; however, it is extremely expensive, and subjects’ behavior maybe altered by an observer’s intrusion into the home (Robinson, 1985). Similarly, this method can be prone to a high, non-random refusal rate by subjects not comfortable with being observed. Another method of measuring time use involves frequency and duration of activity surveys; “stylized” lists of activities for which subjects provide frequency and duration of participation information. They have been used in the rehabilitation literature to examine the time use of persons with disabilities, but have been shown to have poor reliability (Robinson, 1985). In order to be accurate and interpreted consistently by all subjects, the activities must be very narrowly defined. This results in lists of more than several hundred activities, the tedium of which can result in poor subject compliance.

A third method of collecting time use data is the time budget or time diary (Harvey & Singleton, 1986; Harvey et al., 1991; Robinson, 1985; Sorokin & Berger, 1939; Szalai, 1972). This is a systematic recording of time use, normally over a 24-hour period, and consists of a diary in which the subject records sequentially, including time of start and end of each activity, all of the activities that were engaged in during the reporting period.

The advantage of time diaries is that they are comprehensive for the time period, and subjects can use their own terminology, which can then be coded according to
uniform classification criteria (Robinson, 1985). Time budgets can be administered either as “leave behind diaries” (Harvey & Singleton, 1985), where the subject completes the diary on his or her own as the day progresses, or as “recall diaries,” where the subject is asked to recall his or her activities for the previous day (Harvey et al., 1991; Robinson, 1985).

Design issues for time-budget methodology that require consideration are sampling and data collection (Justera, 1985; Kalton, 1985; Robinson, 1985). Sample selection issues in time-budget research are similar to those for any survey research: specifically, sample selection must be accomplished so that inferences drawn from the sample may accurately be applied to the population of interest. In studying people with disabilities, sampling is a particular challenge for several reasons.

First and foremost, the definition of disability is an issue about which there is little consensus. Some surveys use self-reported activity limitation (Statistics Canada, 1993), while others adopt a more bio-medically rigorous definition, such as the presence of particular disabling diagnoses. At the root of this issue is the question as to whether disability is an experienced or an observed phenomenon. Some surveys use only those disabled individuals living in the community, while others include institutionalized individuals, with notably different results, due to the inclusion of those with more severe disabilities in the latter samples.

The choice of an appropriate sampling frame is also an issue for time use surveys of people with disabilities. In most countries, there is no central registry of people with disabilities. Thus, researchers are obliged to use sampling frames such as hospital statistics, membership lists of voluntary organizations, lists of disability pension recipients, or some combination of sources. Each of these sources of survey participants has associated with it bias that causes results either to overestimate or underestimate certain parameters within the population.

Finally, because of the specialized nature of this population, sample size is also an issue. Surveys of time use among people with disabilities are inevitably smaller than those based on census or other general population surveys. Thus, the estimates produced are usually less precise; that is, they have larger standard errors, making statistical analyses less rigorous. Generally, multiple days of data collection have been found to be more efficient and valid than conducting a single wave of data collection on a larger sample (Kalton, 1985; Pas, 1984). This is an important factor in that larger samples of persons with disabilities can be difficult to obtain, since subject identification (though not necessarily recruitment) is always more complicated than in the general population. Thus, we find that 2 days of data collection (separated by 1 day) on a smaller sample to be the most efficient. We do stratify for days of the week and seasons of the year.

TIME USE INSTRUMENT

The Time Use Questionnaire that we have developed for our work with persons with disabilities was adapted from the Occupational Questionnaire, which has been used to measure daily activity patterns and life satisfaction in the elderly (Smith et al., 1986), from Section D of the 1986 Canadian General Social Survey (GSS; Harvey et al., 1991), and the 1992 General Social Survey (GSS) Time Use Survey (Statistics Canada, 1993). Reliability and validity of the Occupational Questionnaire has been shown to be good
The instrument was modified to its present form following pilot-testing on 27 adult subjects with severe physical disability (Pentland & White, 1992). Activities of 5 minutes or more duration are recorded to the nearest 5 minutes. This is the same strategy used in the time use component of the Canadian General Social Surveys (Statistics Canada, 1987). We believe it to be more accurate than confining activities to half-hour intervals, and it enables comparison of data for persons with disabilities with data for those who are not disabled (e.g., 1992 Canadian Time Use Survey).

One item was included to determine the degree of control that the individual perceives he/she has over his/her use of time (Ujimoto, 1985). In addition, to measure participants’ subjective perceptions of their use of time, we ask them to respond to two Likert statements about their satisfaction while doing each activity and perceived balance of the activities in which they engage.

PROCEDURES FOR COLLECTING TIME USE DATA FROM PERSONS WITH DISABILITIES

In our experience, time use data from persons with disabilities is best collected by telephone interview. We have used personal interviews to collect time use information on the assumption that personal contact would improve compliance, and that some subjects with disabilities might need physical assistance to complete the forms (Pentland & White, 1992). However, our experience was that the face-to-face aspect in fact compromised the accuracy of the information due to subject embarrassment regarding some personal activities and discomfort in admitting when there had been lulls of inactivity during the day. Furthermore, Robinson (1985) pointed out that the use of personal interviews to collect time use data has been shown to be substantially more expensive than telephone interviews, with estimated cost differences ranging from 39% to 172%. In a pilot study, we also tried autochronography (Andorka, 1987) or “leave behind diaries” (Robinson, 1985) with this population. The disabled subjects seemed more comfortable with the increased anonymity of this method, but the quality of the data from the “leave behind diaries” was noticeably poorer than that from the “recall diaries” completed by personal interview, or by telephone interview.

In our studies we generally need to administer a variety of instruments in addition to the time use questionnaire. We have found that compliance, reliability/validity, and budget considerations all seem best addressed by a data collection protocol that combines telephone interview and mailed, self-administered methods, with the time use data collected by telephone.

The validity and reliability of time use diaries are directly affected by subject motivation, belief in the importance of the data, and sense of involvement in the study (Grimier & Roy, 1987). The study is carefully explained to subjects, and a small honorarium is paid upon completion of the interviews and receipt of their questionnaires. The approach and manner of the interviewers in critical in this regard. We select interviewers carefully, and they are specially trained to interview persons with disabilities. Each interviewer is assigned subjects for whose data collection they are responsible. Since the interviewers’ manner, motivation, and skills are critical to ensure a good response rate and quality data, we provide interviewers with a 1-day workshop in interviewer technique and time use data collection, specifically tailored for working with
people with disabilities. Topics in the workshop include the purpose and nature of the study, the measurement instruments, the importance of consistency and standardization, and basic understanding of the particular disability or disabilities. During training, the interviewers practice collecting time use data in pairs under supervision and receive feedback.

In conclusion, a fuller understanding of time use has implications for theory, practice, and research among people with disabilities. The field of disability studies and rehabilitation is a relatively new one, with only the most rudimentary body of theory associated uniquely with it. In the past, theory from other disciplines, such as anatomy, physiology neurosciences, and medical sciences has informed our understanding of disability and rehabilitation. Conspicuously absent from the theory base is theory applying specifically to an understanding of disability and the many parameters that affect life with a disability. Theory on time use has endless potential to contribute to our understanding of disability and the factors that affect activity patterns and lifestyles of those with disabilities.

In the research area, time use approaches offer an objective means of addressing issues, such as those just mentioned, which are largely phenomenological or subjective in nature. Furthermore, it offers a means of increasing our understanding of issues associated with activity patterns, through quantitative approaches to understanding the relationship between time use and other measurable variables, such as age, duration of disability, and financial security, to name a few.

Finally, as regards practice and rehabilitation, the consideration of time use by rehabilitation professionals offers a means of ensuring a more holistic and person-centered view of the role of the professional. If therapists and others working with disabled people were to routinely measure time use as part of their battery of assessments, it is unlikely that they could then focus exclusively on a wrist or a back, or a behavior. This failure to treat disability issues in the context of the whole person and his or her life is one of the most commonly leveled complaints of disabled consumers about their therapists. Perhaps by understanding time use, activity patterns, and lifestyle requirements, a more balanced program could be offered by therapy, thus leading to increased understanding and greater satisfaction in the client—therapist relationship.