

Time use of the elderly: a practical application of time budgets in a South African setting

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Abstract

Time-budget methodology, which affords unique insights into daily life events, has had only limited application among elderly subpopulations and in developing countries to date. Efforts under way to fill this gap can draw on a practical guideline to time-use data collection based on over 30 years of research experience in the field. This article outlines major recommendations in the guideline of Harvey (1993b). It also reports a practical application of the time-use method among elderly residents of KwaMashu, a black township near Durban. The pilot study with 50 subjects conducted by the second author yielded insights into the weekday time use of members and non-members of senior service centres. The findings suggest that senior centres play an important positive role in the daily lives of members. Drawing on the practical research experience gained in the pilot study, recommendations are made to further improve the quality of time-use data collected in the local setting.

Introduction

An obvious way to inquire into individual life-styles is to observe how people carry out their daily routines or activities. Methods of observation vary widely and range from direct participation in an individual's life, to random observation of daily events, stylized accounts and activity logsheets. Of all these options, the time-use diary or time budget is regarded as the most practical and cost-efficient (Harvey, 1990; 1993b). The focus of this article is on time-diary methodology, and its practical application in research on ageing and the elderly.

Time budgets are a social research tool which yield quantitative information about the amount of time people spend on various activities during a recurrent time period. In Western countries a number of time-budget studies have shown how the elderly (Altergott, 1988, 1990; Lawton, Moss & Fulcomer, 1986/87; Moss & Lawton, 1982; Singleton, 1985; Ujjimoto, 1990) and their caregivers (Moss, Lawton, Kleban & Duhamel, 1993) allocate their time. Time budgets have been shown to be particularly useful for the examination of how people adjust life-styles after major life-course events

such as bereavement (Rubinstein, 1986) and retirement (Young & Schuller, 1991:91-125).

To date, time-budget methodology has not been widely applied in South African research. However South African researchers may not be exceptional in lagging behind in time-use research. A 1989 survey of scholars working in the field highlighted the need to develop and train researchers interested in studying time use. The survey identified time allocations across subpopulations, such as the youth and the elderly, as topical but under-researched issues (Harvey, 1993a). The survey report noted that time-use research is currently concentrated in developed countries and few efforts have gone into the training of researchers elsewhere. The recent efforts of the United Nations' Institute for Research and Training for the Advancement of Women (INSTRAW) was an exception; INSTRAW seeks to develop and promote time-use studies to value the unpaid work of women living in developing countries (Harvey, 1993a). These findings suggest that a major gap exists in time-use research and training which needs to be filled.

This article reports on a pilot study on the time use of elderly residents of KwaMashu, a black residential area near Durban. The pilot study was undertaken as part of an honours-level research programme (McCallum, 1991). The main aim of the study was to gain practical experience of time-use research methodology with a sample of elderly South Africans. A further objective was to explore the usefulness of the diary or time-budget method in describing the quality of life of South African elderly.

A case for using the diary to mirror the quality of daily life of the elderly is made by Young and Schuller (1991). In their work on retirement the authors assert that there need to be markers which divide the day and the week into various sections to create tension and relaxation, work and leisure, comfortable routines and freedom from drudgery. Young and Schuller posed a series of questions to retired workers in the United Kingdom about the events that they used to mark the passage from day to evening; whether different parts of the day passed quickly or slowly; and how, if at all, the respondents differentiated between weekdays and weekends (Young & Schuller, 1991). The authors cite the cases of two retirees to illustrate successful adjustment to retirement. The first

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person had a problem with the day's fullness: he was "busy enough to have leisure." The other person had difficulties in spacing out the day's emptiness. Two free-form diaries are reproduced in the work which capture the striking contrast in life-styles of persons with plenty to do and little to fill the hours of the day, respectively (Young & Schuller, 1991:107). The first diary is crowded with notations of many and varied activities; the second diary contains only a few entries, most of which refer to physiological needs. Young and Schuller's study clearly demonstrates the utility of time budgets to identify persons who are successful in engaging themselves in worthwhile activity schedules.

As an introduction to diaries and time budgets, the following section gives a brief outline of the history of time-use research and reviews a contemporary guideline to its methodology. A practical example follows of the application of the guideline in a KwaMashu study of older South Africans.

Time-use data collection

Two major routes of time-use data collection are based on *activity* and *time*, respectively (Acharya, 1982). The first approach to measuring time use takes activity as the frame of reference; it estimates participation rates using a stylized reporting protocol such as an activity logsheet. The respondents report how often, if at all, they participate in given activities during a specified time period. The second approach, referred to as the diary or time-budget method, uses time as its frame of reference. The respondents report the chronological flow of events in their lives in natural activity settings. Of the two approaches the time budget is a closer approximation of real daily life as it is experienced by individuals. The inclusion of subjective as well as objective dimensions of time use further enhances understanding of the personal experience (Lawton, Moss & Fulcomer, 1986/87; Clark, Harvey & Shaw, 1990).

Time budgets have been widely applied in national and cross-national studies since the 1960s. The classical study of time use conducted in the early sixties (Szalai, 1972) involved researchers from 12 different countries, mainly First and Second World countries, and 15 different survey sites. A major objective of the multinational study was to observe the impact of modern mass communication – with the advent of television – on daily life-styles (Szalai, 1972). Building on the experience of this and later co-operative research, efforts are currently under way to update the 1960s time-use methodology, and to refine data-collection methods to meet current needs of individual researchers as well as to enable cross-national comparisons. The result is a compendium of recommendations to assist time-use researchers to sharpen their tools for the task at hand. The following section reviews data-collection options available to time-use researchers following the guideline produced by Harvey (1993b) in collaboration with others. The guideline represents the accumulation of practical experience of several decades of time-use research.

Characteristics of diaries

The guideline includes recommendations for the length and layout of a diary, data-collection procedures, subject sample size, and the sampling of days of the week and the season.

The usual procedure is that diarists enter all the activities of the day in chronological order starting from the time of waking until the time that they go to sleep at night. Alternatively, the start of a 24-hour period is specified, e.g. from 04:00 on one day until 04:00 on the following day. The time spent on daily activities, together with time which has not been accounted for, should add up to 1 440 minutes. The

respondents record in their diary when their main activities started and ended, whether there were any parallel activities, and what the location and social setting of these activities were. The social setting refers to who was present, or who participated in an activity alongside the respondent, or who communicated with him/her during the activity. Further, diarists may be required to record qualitative aspects relating to personal motivations and evaluations. It is recommended that the respondents fill in the diary in their own words and that this information is later coded by the researcher.

According to Harvey's (1993b:209) guideline, a diary should cover a full 24-hour period, or multiples of the period, and should allow for the appropriate weekly cycle. Ideally the time period covered will be one or two days. Typically a diary specifies a designated diary day or days. He recommends that data are collected throughout the year to include seasonal variations in time allocations. If this is not possible, autumn is regarded as the best season for time-use studies; the author probably had temperate and nordic climates in mind when making this recommendation.

The guideline notes that the modal sample size for country studies is 2 000 independently selected respondents. It is important to note that there is no upper limit on the age of respondents. Some studies collect time-use data from several or all members of a household, to give a better picture of the division of labour and other exchanges in the household. Personal or telephone contact, and self-completion and mail-back interviews are recommended in the guideline (Harvey, 1993b:211).

"Yesterday" and "tomorrow" diaries

The guideline specifies that the diary may either be completed for the preceding day (a "yesterday" diary), or for the following or a future-designated day, in which case the diary is left behind with the respondent for him/her to complete (a "tomorrow," or "leave-behind" diary). Leave-behind diaries often feature time-interval markers, e.g. 15-minute periods, as reminders to assist diarists with their recall and recording task. Recent work suggests that open-interval diaries may be more appropriate for yesterday studies and fixed-interval diaries for leave-behind or tomorrow studies (Harvey, 1993b:212).

In South Africa, Møller (1992) obtained satisfactory results from a study of leisure time use among township youth on a weekday and a weekend day, using the following method: Fieldworkers were required to record the details of a "yesterday diary" in the respondent's own words for the first designated day. A leave-behind diary was placed with the respondent to complete on the second designated day. The interviewer returned the day after to debrief the respondent. This procedure allowed omissions and inaccuracies of recall to be rectified while the diary days were still fresh in the respondents' minds.

The content of diaries

This section discusses recommendations regarding the notation and coding of the activities of the diary day, and the settings in which they occur. The guideline notes that it is essential that primary and secondary activities are captured to fully reflect and measure daily event patterns. Secondary activities frequently refer to items such as listening to the radio, conversation and child care (Harvey, 1993b:214).

It is recommended that primary and secondary activities are reported by respondents in their own words and later recorded according to a 30-50-category common coding system. The guidelines recommend a coding system that can be reduced to the one used in the multinational time use study referred to

earlier (Szalai, 1972) for comparative purposes. The original Szalai coding scheme used 99 activity codes. Within the specifications of the standard system, individual researchers may wish to develop additional codes for specific research foci. Practice suggests that it is easier to code activities in greater detail and then to reduce the number of coding categories. While descriptive studies may report full detail, analytical studies will need to reduce it for technical reasons. Most classification schemes allow for reduction to 30-40 or 9-14 activity categories for analysis purposes. Further reductions may be convenient for cross-cultural research purposes. For example, Ass (1978, in Harvey, 1993b: 219) makes only a three-fold distinction of time use: necessary time (basic physiological needs), contracted time (work and regular education activities), and committed time (mainly unpaid work such as housework, marketing and child care).

The guideline notes that information would be sterile without knowledge of the settings in which the activities take place. The coding schemes for "with whom" and "where" questions will depend on the aim of the specific study, and details of coding systems therefore vary. The guidelines recommend a seven-code classification scheme for social settings to include activities done alone, with spouse, with children, with other household members, with co-workers/school mates, with friends/relatives outside the household, and with others outside the household. A six-code classification scheme is recommended for locational settings: the home (including the yard), the workplace (away from home), another person's home, elsewhere (away from the home), travelling (subdivided into six modes), and other/unknown (Harvey, 1993b: 219-20).

Time use in context

The context in which to interpret time-use data is provided by the background information on the respondents and their households. This information typically includes details of age, gender, occupational and employment status, family life-cycle, urbanization, income and other household characteristics. Supplementary data may relate to other measures of involvement in activities. In applied time-use studies, diary data is used in conjunction with regular attitudinal and behavioural data collected in questionnaire surveys.

The KwaMashu time-use study

The objectives of the Kwa-Mashu time-use study were two-fold:

- To adapt the time-use data-collection methods recommended in the guideline outlined above, for use among an elderly subsample in a South African township setting.
- To compile a time-use database with which to compare the life-styles of two categories of elderly persons regarding their subjective wellbeing.

A starting point for the study was the idea that diary data could be used as an indication of successful ageing. The KwaMashu study aimed to link objective (participation in activities) and subjective (personal experience and evaluation of time allocation) time-use data to quality-of-life perceptions. It was argued that persons whose daily lives include a fulfilling round of activities would feel more contented than persons whose days were perceived as empty or wasted. Time-use data would provide a good indication of full and empty days as suggested in Young and Schuller's (1991) work on retirement.

The research question

In response to a local demand for decentralized senior service centres, the KwaMashu home for the aged has trained older persons and assisted them to set up neighbourhood centres in private homes. Four neighbourhood centres were operating in the area at the time of the survey. Most of the centres were open three days a week. The members of senior centres come together to participate in crafts and income-earning activities with the guidance of trainers. McCallum (1991) argued that senior centres provide their members with useful occupations, a secure environment and companionship, all of which would have a positive effect on their perceived wellbeing. It was hypothesized that older residents who participate in programmes offered by local senior centres would be engaged in a greater variety of enjoyable and productive activities than those who stay at home. The time budgets of the former group would be "fuller," which would reflect enhanced wellbeing. The difference in the life-styles of members and non-members of senior centres should show up in time budgets and life satisfaction scores.

Method

The instrument

The questionnaire schedule covered background information on the individuals and their activities during the designated diary day. As the pilot study was experimental in nature, the researcher applied various time-use data-collection methods, including the "double-diary" and activity logs.

The double-diary method employed in the study required that the respondents first write down their activities on the diary day in their own words. The cue for the unformatted diary was "We would like to ask you about the things that you did yesterday. I am interested in knowing everything you did, even if you think that it wasn't important. Just think slowly and explain everything you did." After writing in the unformatted diary, the respondents were required to complete a yesterday diary formatted along conventional lines to include the main activity, locational and social settings, and a qualitative measure of enjoyment. The cue for the formatted diary read: "I would like to get a more detailed understanding of what you did yesterday. Once again, I would like to know everything that you did, even if it was just relaxing/eating." Examples of entries in the unformatted diaries are shown in Figure 1. A comparison of entries in a formatted diary schedule and an unformatted diary by the same respondent are shown in Figure 2.

After completion of the formatted diary, the respondents were asked to identify the most enjoyable activity and the least enjoyable activity of the diary day, and to give an overall evaluation. An activity log referred to the frequency of participation in weekend and rare events during the month of August. The events included church services; club meetings; entertainment such as movies, concerts, theatre, and fashion shows; going to a library; visiting; social events such as *braaivleis* (barbecues) and parties; excursions; and funerals. Several indicators of subjective wellbeing were measured towards the end of an interview.

Data collection

The data were collected in the last week of September and the first week of October 1991. The Human Sciences Research Council's (HSRC) regional office in Durban carried out the fieldwork for the researcher. Fifty persons were interviewed by four trained fieldworkers in the employ of the HSRC. The sample was evenly divided between members and non-members of senior centres. For the purpose of the study, members

Figure 1

Samples of unformatted diary entries of members and non-members

Wednesday diary of a member

I wake up at 06:30. I wash my face and I cook porridge. I make my bed and clean my bedroom. I eat breakfast and I clean the kitchen and wash dishes and pots. I wash myself and dress. I locked the house and I go to the centre where we meet as women and do different jobs. There in the centre I'm learning to knit and do baking. First we start by baking; we were baking coconut cakes. By 10:30 we have a break, thereafter we continue with baking until 11:00. We wash the baking dishes and after that we start knitting. We knit until 12:30 and we have lunch. After lunch we continue with knitting until four [o'clock]. I fold my work, we pray and I go home. At home I have a rest and I have supper. After supper I go to sleep. (59-year-old married woman)

Monday diary of a member

I woke up at 06:00. I went to the bathroom, then drank tea. I then came back to the room and did some sewing. At 09:00 I prayed. At 09:30 I made breakfast. After breakfast I did work. I went to the day care centre at 12:00. I used the taxi. I had to come back as I forgot the suitcase with the things I do inside. I then went back to the day care centre. I came home and cleaned my bedroom and washed my washing. At four-thirty I ironed some things. I bathed my granddaughter. I went to the old lady who lives with me. I looked after her. I then prayed and went to sleep. (60-year-old married woman)

Tuesday diary of a non-member

I woke up in the morning at 06:00. I cleaned my bedroom until 06:30. At 06:40 I cleaned the house. At 07:30 I went outside and swept the yard. After that I went back and made tea for myself until 08:00. By 08:30 I had done my washing. At 09:00 I had a shower. At 09:45 I washed dishes and pots. At 10:00 I relaxed on my sofa and did my handwork until 12:00. At 12:30 I made lunch for myself. After I finished my lunch it was one-thirty. I went outside and gave my front garden flowers some water. At 15:00 I cooked supper – I finished at five. At five-fifteen I had supper together with my children. At eight I had a prayer and went to sleep. (63-year-old widow)

Wednesday diary of a non-member

I woke up at 06:00. I went to the kitchen and poured water into the kettle, and I put the kettle on the stove. I waited till the water boiled. I made tea for myself. After I had finished drinking tea, I went back to my bedroom and cleaned it. I finished cleaning the bedroom and I went to bath myself and get dressed. I washed my little washing. After I finished my washing I spiced fish and fried it, preparing to go to [sell the fish at] school. At 10:00 I went to school, rushing [to make] the break at 10:15. At 11:00 I finished selling [the fish] and I went back home. At home I counted all the money that I had made. I prepared my lunch. After my lunch I relaxed in the lounge sleeping in a sofa. At two I went to church to attend Bible study. In the afternoon I was relaxing watching TV. At six-thirty we had supper. After supper we had a night prayer. After praying I went to sleep. (61-year-old married woman)

were persons who attended their neighbourhood senior centre on a regular basis. Members were contacted through their neighbourhood centre. Non-members were contacted by fieldworkers, who stopped at every tenth house in four sections of KwaMashu to inquire if an older person lived there.

Activities were coded in 48 categories (see Table 2), which broadly corresponded to the Szalai scheme. To more fully capture the patterns of the respondents' daily lives, greater detail was provided under the headings of work and domestic duties. Other additional categories were developed from the respondents' own definitions of their activities. Examples of locally defined time-use categories included activities such as "going to the senior centre;" opening the windows in the morning; and a three-fold distinction of religious participation activities referring to praying, reading the Bible, and attending a Bible study group. Child care was usually referred to as babysitting, as distinct from the care of other, usually older persons. Conventional coding schemes attach travel to various domains, or subsume all travel activities under one heading. In the KwaMashu study travel was divided into general travel, waiting, and "going and returning." Given the small sample size, the pilot study only evaluated participation rates in the 48 activities; time spent in these activities was not coded.

Results

Sample characteristics

Table 1 gives the profiles of the two subsamples as a base for the discussion of their comparative life-styles which follows. The members of the senior centres were predominately female, and were in general disadvantaged in terms of education and housing. The higher proportion of females in the member group than the non-member group was attributed to the types of activities which members pursue at senior centres. A wider age range was represented in the member than the non-member subsample. Three-quarters of the members were state old-age pensioners. The remaining quarter earned an income from informal activities such as knitting, sewing, hawking and childminding. Some members worked full-time in these

occupations on the days which they did not spend at the senior centre. Non-members were more likely than members to hold down paid jobs and to earn an income from informal selling activities. Although the members of senior centres produced handcraft items for sale, the centre rather than individual members was involved in the sale of the products. The above observations of differences between the subsamples are for the most part not statistically significant and are only noted in terms of their possible influence in shaping time-use patterns.

Life-styles

In view of the small sample size the results on time use reported here are tentative and mainly serve to illustrate the outcome of time budgets. Table 2 shows the range of activities in which the respondents engaged on the diary day. The members of senior centres reported an average of 12,8 activities and the non-members, an average of 12,3. The few apparent differences in the participation rates of members and non-members are summarized as follows: Eleven of the 25 members attended their senior centre as ordinary members or instructors. The members reported more domestic duties, such as cleaning, meal preparation, laundry and shopping, on the diary day than the non-members. More members than non-members took medicine. The preponderance of females and very old persons in the member subsample might have accounted for these differences. Occupational as well as age factors may have accounted for the higher proportions of non-members involved in selling, caring and travel. Regarding passive leisure, non-members were more likely than members to be involved in mass media activities such as watching television and listening to the radio; more members than non-members stated that they simply "relaxed." While members tended to read the Bible in the company of others, non-members tended to read the Bible on their own.

Eighty-seven per cent of the diary day activities took place in the home; 80% were done alone. These trends have been found in other parts of the world. The proportion of "liked" activities on the diary day was similar for members and non-members: 87% of activities received a positive evaluation.

Figure 2
Unformatted diary entry and an excerpt from the corresponding formatted diary entry of a non-member

Unformatted diary entry

I woke up in the morning at 06:00. At 06:30 I went to the outside bathroom with one of my granddaughters. She usually washes my whole body because I am unable to wash myself. At 08:00 I ate breakfast with tea. After breakfast I sat on the sofa and waited for my granddaughter to give me my lunch. At one o'clock I felt tired of sitting down so I went to my bedroom to sleep. I slept for four hours. I woke up again and sat in the shadow outside because it was very, very hot. I then came back and sat in the sofa for two hours watching television. At six I ate my supper and drank my tea. After tea I went back to my bedroom to sleep. (Grandmother 80+ years)

Corresponding formatted diary entry (excerpt)

Now let us begin when you first woke up. What time was that? 06:00.
 Did you get out of bed right away? I waited for my granddaughter.
 What did you do next? I washed my body.
 Did you do this alone or with others? With others.
 How long did this take? Fifteen minutes.

THEN WHAT DID YOU DO? WHAT TIME DID YOU START	WITH WHOM DID YOU DO IT?	WHERE WERE YOU?	HOW MUCH DID YOU LIKE DOING IT
At 8.00 am I ate my breakfast	1. Alone 2. Relative lives here 3. Relative lives elsewhere 4. Friend/neighbour 5. Someone else	1. In Home 2. In yard/grounds 3. Away from home	1. Disliked 2. Neither liked or disliked 3. Liked it a little 4. Liked it a lot
At 9.00 I sat in the sofa	1. Alone 2. Relative lives here 3. Relative lives elsewhere 4. Friend/neighbour 5. Someone else	1. In Home 2. In yard/grounds 3. Away from home	1. Disliked 2. Neither liked or disliked 3. Liked it a little 4. Liked it a lot
At 11.45 I ate my lunch	1. Alone 2. Relative lives here 3. Relative lives elsewhere 4. Friend/neighbour 5. Someone else	1. In Home 2. In yard/grounds 3. Away from home	1. Disliked 2. Neither liked or disliked 3. Liked it a little 4. Liked it a lot
At 1.00 I went to my bedroom to sleep, because I was tired of sitting	1. Alone 2. Relative lives here 3. Relative lives elsewhere 4. Friend/neighbour 5. Someone else	1. In Home 2. In yard/grounds 3. Away from home	1. Disliked 2. Neither liked or disliked 3. Liked it a little 4. Liked it a lot
I slept for 2 hours	1. Alone 2. Relative lives here 3. Relative lives elsewhere 4. Friend/neighbour 5. Someone else	1. In Home 2. In yard/grounds 3. Away from home	1. Disliked 2. Neither liked or disliked 3. Liked it a little 4. Liked it a lot
At 4.00 pm I woke up again and sat in the shadow outside the house	1. Alone 2. Relative lives here 3. Relative lives elsewhere 4. Friend/neighbour 5. Someone else	1. In Home 2. In yard/grounds 3. Away from home	1. Disliked 2. Neither liked or disliked 3. Liked it a little 4. Liked it a lot

Table 1

Characteristics of the samples of members and non-members of senior service centres: percentages

Characteristic	Members %	Non-members %
Total	100	100
Female	92	72
Age group (years)		
50 – 59	12	4
60 – 69	56	76
70 – 79	12	20
80+	20	–
Marital status		
Never married	8	4
Married	28	24
Widowed	56	60
Divorced	8	12
Education		
Illiterate	24	16
Literate	44	48
Some formal education	32	36
Occupation		
Pensioner	76	40
Paid job	–	20
Informal income-earning activities	24	40
Facilities in the home ("Yes" responses)		
Hot running water	20	28
Water-borne sewerage inside	20	28
Water-borne sewerage outside	56	72
Bucket system	24	–
Quality of life indicators (scores)		
Satisfied with life-as-a-whole	76	84
Generally happy with life	84	88
Endorsements of statements:		
– Life could be happier (disagree)	40	32
– Most things I do are boring (disagree)	72	76
– Most things I do are interesting to me (agree)	84	80
– I feel in control of my life (agree)	84	84
Overall evaluation of diary day:		
– Positive	36	21
– Ambivalent	28	62
– Negative	36	17
N	25	25

Liked activities on the diary day included a wide range of domestic, handwork and social interaction activities, and reading the Bible. Doing the laundry and cooking received the highest number of negative votes. Members, in particular, indicated that they liked to be busy. Although relaxing and sleeping were preferred activities of the diary day, "doing nothing" was disliked by the greatest number of persons. "Going to the senior centre" was mentioned by a substantial number as the most enjoyable activity on the diary day. Most activities which were enjoyable for non-members were related to work and domestic duties. "Sitting alone" was disliked by a few non-members.

The quality-of-life measures applied to the two subsamples showed little variation (see the bottom of Table 1). It was noted that the minorities in both groups who were dissatisfied and unhappy with their lives in general, were also more likely to dislike some activities of the diary day.

Regarding the rare events captured in the activity log, the non-members of senior centres were more likely to engage in visiting and funeral events. In approximate order of frequency, members were more likely than non-members to participate in social activities, club meetings, entertainment, library visits and excursions.

Table 2

Participation of members and non-members in diary-day activities: percentages

Activity	Number of activities	Participation rate	
		Members (n = 25) %	Non-members (n = 25) %
Work			
Working (has a job)	4	8	8
Working at home after hours	1	–	4
Teaching at the senior centre	3	12	–
Sewing and knitting	14	28	28
Selling	9	8	28
Preparing for work	9	12	24
	40		
Domestic duties			
Cleaning the house	40	92	68
Cooking, preparing a meal	32	68	60
Washing dishes	17	40	28
Washing clothes	20	44	36
Hanging up laundry	2	–	8
Ironing	9	24	12
Cleaning shoes	2	4	4
Cleaning/polishing items	5	12	8
Gardening	12	24	24
Painting	2	–	8
Washing the car	1	–	4
Opening windows	2	–	8
Ordering a meal	1	–	4
	143		
Caring			
Caring for other (older) people	13	20	32
Taking a grandchild to the bus stop	2	–	8
	15		
Religious activities			
Praying	18	36	36
Reading the Bible	3	–	12
Bible study group	2	8	–
	23		
Social activities			
Going to the senior centre	8	32	–
Shopping for groceries	5	16	4
Going to the market	2	8	–
Going to town	2	4	4
Visiting	2	4	4
	19		
Leisure			
Watching television	25	40	60
Listening to the radio	6	8	16
Reading the newspaper	7	16	12
Relaxing	16	36	28
Playing with/reading to a grandchild	2	–	8
Baking	3	12	–
Walking	1	4	–
	60		
Personal			
Washing	67	136	132
Dressing	14	28	28
Sleeping	44	88	88
Resting	36	72	72
Eating	111	232	212
Drinking tea	22	44	44
Going to the clinic	2	4	4
Going to the doctor	1	4	–
Taking medicine	3	12	–
	300		
Travel			
General travel	6	4	20
Going and returning	16	32	32
Waiting	3	–	12
	25		
Total activities	627	319	308

Discussion

The discussion which follows is divided in two parts: An evaluation of the methodology applied in the KwaMashu study is given first; the evaluation is followed by a discussion of the substantive findings. The small sample size only allows for tentative conclusions to be drawn.

Methodology

The quality of diary material is usually related to the detail provided. Time grids are designed so that people are not discouraged to report short-time activities such as brushing teeth or making tea. It is inevitable that some of the rich material collected in free-form diaries will be lost during coding and analysis. The KwaMashu researcher observed that the free-form method worked well. "The elderly folk were very precise in the detail that they provided" (McCallum, 1991:22). However individual reporting styles varied and some persons broke down a single event into several subactivities. For example, one person itemized every purchase made on a shopping trip; this detail was condensed during the coding process.

On the basis of her experience with the KwaMashu study, McCallum (1991:21) recommended the "tomorrow" diary method which avoids some problems of recall although illiteracy might be an obstacle in some cases. (A fifth of the KwaMashu sample was not able to read or write.) The recommendation of a "tomorrow" diary was taken up in a later time-use study conducted among older persons (Møller, 1994) and presented few problems, even among illiterate persons. The principle of the diary format was explained to all participants in the later study. Literate persons entered their information into the schedule, while illiterate persons simply memorized the events of the day in the prescribed format for later recall.¹ Both literate and illiterate persons were debriefed in a second personal interview.

The KwaMashu time-use study may be unique in that it included both an unformatted and a formatted diary in the same interview schedule. This duplication affords a type of validity check. McCallum observed that the contents of the non-formatted and the formatted diary were identical in almost nine in ten cases. The KwaMashu double-diary method closely approximates the interviewing procedure adopted in the leisure-time study described earlier (Møller, 1992). In this study the interviewer transcribed items from a free-form leave-behind diary written in the respondent's own words, into a fixed format schedule in the presence of the respondent while adding details of activity settings. Drawing on the experience gained in the KwaMashu and the leisure-time studies, it appears that the "double-take" diary method, which involves personal interviews and the transcription of yesterday and tomorrow free-form diaries, may be the most appropriate method for time-use data collection in local settings.

Activities are the building blocks of both activity logs and time budgets. McCallum noted that the KwaMashu respondents' definitions of activities and discrete events caused validity and reliability problems in some instances. This problem may be attributed to the definition of time use in terms of activity, which reflects a Western approach which may not be universal according to Elcardus (1990). The emphasis on "what you did yesterday" in the instructions to diarists allowed some significant events to slip through the activity framework. McCallum (1991:21) cites the example of a grandmother who reported the visit from a grandson as the most pleasant event of her day, although the visit was not recorded as an activity in her diary. Clearly, the grandmother had regarded her grandson and not herself as the active agent. It is possible that the presence of the grandson might have

been picked up in the "with whom" section of the formatted diary schedule. If the KwaMashu diarists had been requested to record secondary activities, the grandson might have figured as an interaction partner in conversation, which is a common secondary activity. Noteworthy is that conventional activity classification schemes, which are by no means value-free, make a distinction between an active and a passive form of visiting which is often related to the location dimension (Møller, 1993). In the collapsed version, visiting activities include "going-a-visiting" as well as receiving visitors.

With hindsight, it appears that the "with whom" dimension of events was interpreted differently by the researcher and the subjects. For example, members of senior centres indicated that they worked on their centre activities "alone" rather than in the company of others. Clearly, the cues to elicit the social dimensions of time use need to be very clearly defined to achieve good results (cf. Harvey, 1993b).

It is a known fact that distinctions between activities relating to physiological needs, contracted work, and committed spare-time activities may shift during the life course. Other time-use research has clearly shown that the activities regarded as work or leisure depend very much on life-course and situational circumstances (e.g. Shaw, 1985). The KwaMashu researcher reported that she experienced difficulties in obtaining comparable information on the employment and work status of members and non-members of senior centres. The respondents clearly had their own definitions of paid and unpaid work which did not always fit the preconceived ideas of the investigator.

Life-styles and time budgets

A time budget is a sensitive means of understanding varying life-styles (Moss & Lawton, 1982). An aim of the KwaMashu time-use study was to contrast diary days spent at the senior centre and at home. The working hypothesis was that senior centre days would be fuller than days spent at home, and would contribute to a better quality of life for members.

Practical problems occurred with the yesterday interview in amassing diaries of centre and stay-at-home activities. The senior centres did not operate every weekday and not all members contacted had been to the centre the day before the interview. Similarly, some of the non-members had spent their "yesterday" at work rather than at home.

Only about a third of the members of the senior centres entered a trip to their centre in their diaries. A clearer distinction between the time use of members and non-members, and a better test of the working hypotheses might have been achieved if persons working in paid jobs had been excluded from the sample, and if the senior centre days of members had been compared with ordinary days of non-members.

A further related problem which the KwaMashu researcher encountered in testing her hypothesis linking perceived quality of life to time use, was a lack of clear-cut divisions between the test and the control samples. The control sample included more males and persons still engaged in paid work. The member group included more persons in the 80-89-year age bracket. Therefore, it was difficult to tell if participation rates were influenced mainly by membership of a senior centre, or other factors as well. To disentangle the effects of various interrelated factors, time-use researchers usually control for major biographical differences using multiple classification analysis (cf. Singleton & Harvey, 1989). The results are very accessible, and show the average increase in time spent in an activity if the person concerned was, for example, male or in paid employment. Obviously, the small number of cases in the KwaMashu study did not allow for such procedures.

Contrary to original expectations there was no evidence in the data that non-members compared to members of senior centres put their time to less constructive use, or led lives which were less fulfilled in terms of diary entries. There was little difference between the groups regarding happiness and satisfaction with life, which was higher than in most South African surveys. Similarly, there was very little difference between members of senior centres and non-members regarding participation rates. While more members participated in centre activities on the diary day, non-members worked in jobs, cared for grandchildren, or were involved in unpaid domestic work. Neither group reported having empty time. Both members and non-members subscribed to the "busy ethic" in that they liked to relax but did not want to do nothing. According to Magi (1986), idleness is not approved of in Zulu society, at least among the young and the middle-aged, and the attitudes of the respondents appear to conform to this morality.

Regarding Young and Schuller's (1991) concept of full and empty days, the number of diary events would yield a simple but effective indicator of the quality of daily life. A drawback might be that the measure is an artifact of reporting styles as discussed earlier. The results showed that both members and non-members engaged in roughly the same number of daily events, approximately 12. This average compares favourably to the mean 14 events reported by urban black grandparents in a more recent South African study of time use (Møller, 1994).²

The social interaction dimension of time use showed up differences between members and non-members. The activity logs showed that non-members turned to church activities and visiting relatives to meet needs for social contact and companionship. It appeared that membership of a senior centre met many needs for social stimulus and entertainment, so that members did not have to look further than to fellow members.

The differences between members' and non-members' participation rates in rare activities suggest a quality-of-life enhancing function of the centre. Rare events tend to represent highlights or contrasts which balance the routine of everyday life. It is possible that the senior centre staged some of these rare treats for its members. Alternatively, social networks operating through the senior centre made special events more attractive and accessible to senior centre members to encourage them to break away from daily routines. As one member told the researcher, "I go to parties with other Zakeni members" (McCallum, 1991:42). In sum, it is possible that the senior centres are filling an important "bridging" role (McCallum 1991:44) by creating a home-from-home where elderly folk can engage in useful and worthwhile activities.

Summary and conclusions

Time-use methodology has found few applications in developing countries to date. A student research project pioneered a time-use study among elderly township residents using several methods of data collection including unformatted and formatted diaries, and activity logs for rare events. Survey participants found the time-use study interesting. They understood the methods employed, which produced data of satisfactory quality. Based on this pilot study, recommendations were made to further improve the quality of time-use data in the local setting. All the various types of time-use data collected in the study contributed meaningfully to the testing of the working hypothesis put forward at the outset. The hypothesis, which stated that the time use of senior centre members would differ significantly from that of non-members and enhance quality of life, was not supported. However the

survey findings produced useful insights into the positive role which senior centres play in the lives of elderly township residents.

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Notes

1. Illiterate societies may pose less of a challenge to time-use researchers than societies which operate without clocks. Cf. Saraswathi (1989) for a discussion of successful applications of time budgets in clockless society.
2. In her introduction to time-use studies among the elderly in seven developed countries, Altgott notes that "the typical range of events over a 24-hour period is from 20-80" (1988:17). In practice, under-reporting is commonplace. In discussing quality issues in data collection, Scheuch reports a mean of 15.8 activities in the German subsample of adult persons of all ages used in the multinational time-use study (in Szalai, 1972:82).

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