

How to do (or not to do)...

Using diaries to collect data in resource-poor settings: questions on design and implementation

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Diaries, as a tool for data collection, have been around for some time. Lessons shared to date come from disparate settings and there remains a degree of ambiguity regarding the value of diaries, particularly in resource-poor settings where populations are often illiterate and highly mobile. We recently designed a pictorial diary for the collection of data on household consumption and expenditure in Tanzania and The Gambia. A random sample of 361 diary keepers in The Gambia and 308 in Tanzania maintained diaries for a period of 12 months. The aim of this paper is to share some of the lessons learnt in developing and applying this instrument. It is structured around a series of questions about diaries that we found relatively few answers to when we first embarked on this study. These questions include: how should a diary be designed? How long should a diary be maintained? When should entries be recorded? Who should keep the diary? The motive behind this paper is simple: to provide future researchers who are contemplating using diaries in resource-poor settings with some practical information that may guide them through this process.

Key words: diaries, consumption and expenditure diary, data collection, research methods

Introduction

A diary is a research tool that requires respondents to make regular records of their daily activities and experiences (Mariño et al. 1999; Bowling 2002). They are typically used in contexts where particular activities or events are expected to change over time, where contextual information such as the circumstances leading up to or following an event are deemed important, and where respondents are likely to experience difficulties recalling past experiences. Nonetheless, diaries tend to be overlooked as a method of data collection. In fact, they are often seen as the method you use when 'there is no other method available' (Bowling 2002: 428). In this paper, we give diaries a 'second look' and reflect on some of the most frequently asked questions concerning their application in resource-poor settings and in communities where literacy levels are low. To do this, we draw on our recent experiences using consumption and expenditure diaries in both East and West Africa.

Background

Diaries have been used as a data collection tool in many different fields of research. Two common areas include nutrition and sleep research. 'Dietary' or 'nutrition' diaries have typically been used to monitor the dietary intake

of particular groups such as infants (Taylor et al. 2004), school children (Rush et al. 1988a,b; Andersen et al. 2004), adolescent girls (Striegel-Moore et al. 2004) and pregnant women (Buhling et al. 2004). Many of these studies have focused on particular medical conditions such as diabetes (Reynolds and Anderson 2004), binge eating (Freeman and Gil 2004) and bulimia nervosa (Alpers and Tuschent-Caffier 2004). Examples of the type of nutritional-related information collected using diaries include cholesterol intake (Colquhoun et al. 2003), nutrient levels (Taylor et al. 2004), carbohydrate intake (Buhling et al. 2004), caffeine consumption (Lawson et al. 2004) and bodyweight (Reynolds and Anderson 2004).

Diaries have also frequently been used to monitor sleep behaviour. Parameters measured using 'sleep' diaries include information on the frequency and intensity of difficulty falling asleep, number of night wakings, nocturnal sleep duration, the frequency and intensity of recurrent distressing dreams and levels of daytime sleepiness (Burke et al. 2004; Cates et al. 2004; Perlis et al. 2004; Sadeh 2004). Studies have focused on several groups, including crying infants (Kirjavainen et al. 2004), children with disruptive bedtime behaviour (Burke et al. 2004), adults suffering from combat-related posttraumatic stress disorder (Cates et al. 2004) and adults diagnosed with insomnia (Cheek et al. 2004; Perlis et al. 2004).

'Lifestyle' diaries have typically been used to document the behaviours of groups considered to engage in 'high-risk' activities and occupations. They have been a particularly popular method for collecting data on the sexual behaviour of commercial sex workers (Coxon et al. 1993; Fortenberry et al. 1997; Minichiello et al. 1999; Gysels et al. 2002). Diaries have also been used to understand drug-user risk behaviours such as the activities related to syringe acquisition, use and discard (Stopka et al. 2004). They have also been used to monitor patterns of physical activity (Henry et al. 2004) and the frequency of injury events (Morrongiello et al. 2004).

'Health' diaries have been used to investigate health-related behaviours including medication adherence (Garber et al. 2004) and the occurrence of specific health conditions such as cystic fibrosis (Finkelstein et al. 1992), hormonal patterns (Landgren et al. 2004), chronic mental health problems (Delespaul and de Vries 1987) and pain-stress levels (Gil et al. 2004). In low- and middle-income countries, 'health' diaries have also been used to record episodes of colds, coughs, diarrhoea and fever in children (Hardon 1987), the volume and composition of breast milk transferred from mothers to their infants (Drewett et al. 1991) and the health effects of air pollution (Kamat and Doshi 1987). 'Contact' or 'care' diaries have also been used to document the experiences and decision-making processes undertaken by patients as they navigate their way through particular health services or treatments (Seibold 2004; Sharp et al. 2004).

While there has also been growing interest in the use of diaries to collect information on consumption and expenditure, documented examples remain relatively scarce. In the field of nutrition, diaries have been used to compare food expenditures across different socioeconomic groups (Rush et al. 1988a) and to monitor expenditures by pregnant women (Rush et al. 1988b). In other areas of health care, diaries have been used to monitor patient out-of-pocket expenditures for a range of treatments, including knee replacement surgery (March et al. 2004), diabetes (Cameron et al. 2004), spinal disorders (Korthals de Bos et al. 2004a) and rheumatoid arthritis (Korthals de Bos et al. 2004b). They have also frequently been used to measure the consumption of alcohol (Flegal 1990; O'Hare 1991; Leigh 1993), condoms (Pickering et al. 1992; Fox et al. 1993) and more recently to calculate income from commercial sex (Gysels et al. 2002).

For low- and middle-income countries, several examples of consumption and expenditure diaries have been documented by the World Bank (Grosh and Glewwe 2000). Many of these come from the Living Standards Measurement Study (LSMS) Surveys conducted in, for example, the former Soviet republics of Latvia, Armenia, Ukraine and Belarus (Martini and Ivanova 1996 and Scott and Okrasa 1998, cited in Grosh and Glewwe 2000), Papua New Guinea (Gibson 1998, cited in Grosh and Glewwe 2000) and several West African countries (Blaizeau 1998, cited in Grosh and Glewwe 2000). In these studies, diaries are typically used to collect

information on total household consumption in order to measure living standards.

Much of the literature on diaries focuses on *empirical* results as opposed to *methodological* insights. Nonetheless, it is possible to draw some valuable insights about the relative strengths and weaknesses of diaries based on this rather narrower evidence base. In many instances, simple 'snap shots' of behaviour can be misleading. Diaries allow for the analysis of events over time (Mariño et al. 1999). Diaries, like many observational methods, can also help to place events in a broader social, economic and political context. For example, it is important when using diaries to collect information on consumption and expenditure to be able to look at the effect seasonality has on expenditure, particularly in poor rural communities.

It has also been speculated that households may enjoy the 'novelty' of filling out diaries, and others have argued that diaries allow households to answer questions when it most suits them (Grosh and Glewwe 2000). While diaries can be retrospective in the sense that events and behaviours are recalled and reconstructed with the aid of a diary, they are often prospective insofar as events are recorded as they occur or close to that time (Verbrugge 1980; Mariño et al. 1999). Hence, some researchers have argued that diaries are less likely to suffer from problems of recall bias compared with other data collection tools, largely because they rely more heavily on short-term memory (Verbrugge 1980; Whitty and Jones 1992).

The advantages of using diaries must be balanced against certain challenges. First and foremost is the issue of fatigue. Fatigue has been described as a form of 'conditioning effect' whereby, as the diary period lengthens, participants become tired of keeping records and may become less thorough in their reporting (Verbrugge 1980; Wheeler and Reis 1991). Respondents may also be left to their own devices in terms of completing the diary. In these situations, missing or unclear data may be difficult to resolve (Verbrugge 1980; Mariño et al. 1999). In his review of health diaries, Verbrugge (1980: 90) has noted that if researchers have to go back and clarify entries with respondents, the data soon become retrospective and subject to many of the recall biases levelled at alternative methods such as questionnaires. Moreover, diaries are not always feasible, especially in situations when the information being gathered may incriminate respondents, such as recording the use of illicit drugs or, in the case of income and expenditure diaries, recording income that has not been declared to the tax authorities (Mariño et al. 1999). Finally, diaries are reported to be a relatively costly approach to data collection both in terms of the sheer volume of data that needs to be collected and analyzed, and also because of the time required to train diary keepers and to maintain their support (Verbrugge 1980).

While a number of interesting conclusions about the relative strengths and weaknesses of diaries can be gleaned

from the literature, a degree of caution is required. For example, the majority of studies are limited to developed countries where English is widely spoken and, in the case of the LSMS consumption and expenditure surveys, countries where diaries are conducted on a regular basis (Grosh and Glewwe 2000).

Diaries: frequently asked questions

The following discussion reflects on our recent experiences using consumption and expenditure diaries in East and West Africa. The aim of the overall study was to investigate the factors influencing household demand for the treatment and prevention of malaria in Tanga in Tanzania and Farafenni in The Gambia.¹ Stratified clustered sampling was used to select a sample of 110 households in The Gambia and 308 households in Tanzania. The sample was stratified according to geographic location (i.e. urban/rural) and by distance to formal health care facilities. Each household was asked to nominate a household head to maintain the diary. In The Gambia, some households kept more than one diary (the reasons for this are discussed later), giving a total of 361 diary keepers compared with 308 in Tanzania (i.e. one diary per household). In the diaries, participants were asked to record all forms of consumption and expenditure over a 12-month period. Participants were also interviewed each week to discuss expenditure in more detail, to check that diaries were being correctly maintained. At the end of the interview, weekly diary entries were collected.

The purpose of this paper is not to present empirical results derived from the diary data, but to reflect on the usefulness of diaries as a method of data collection. Hence, this discussion is structured around a series of questions that are frequently faced by researchers, particularly those wanting to use diaries in resource-poor settings where illiteracy is known to be a problem. These questions include:

- How should a diary be designed?
- How long should the diary be maintained?
- How should entries be recorded?
- Who should keep the diary?
- What other issues need to be explored during piloting?

How should a diary be designed?

A number of decisions have to be made when designing a diary. Diary formats can be unstructured, where participants register events as they occur, or more frequently diaries are structured in the form of a log or a calendar in which participants make daily entries on a blank page with prompts (Mariño et al. 1999). They may also be structured like a questionnaire in which participants tick printed boxes containing events or other symbols.

Consumption and expenditure diaries are often structured and organized on a 'product' or 'outlet' basis (Grosh and Glewwe 2000). In some communities, including many

of those in our study, the range of outlets are vast and it is difficult to clearly represent all of them in a single diary. In Tanzania and The Gambia, the consumption and expenditure diaries were constructed according to specific expenditure products and services. This was the preferred option as these categories were relatively discrete, with minimal overlap. Moreover, the categories were not so broad that they could not be clearly represented on a single page. A copy of the diary can be found in Appendix 1.

It has been argued that diaries are less appropriate where literacy levels are low (Bowling 2002). In our study, a pictorial diary was used to address the problem of adult illiteracy, which is known to be particularly high in The Gambia, at 62% (UNDP 2004), compared with 23% in Tanzania (UNDP 2004). The design of the diary was informed by a series of focus group discussions (FGDs) involving men and women from rural and urban areas. Three specific issues were explored in these discussions: first, to identify the relevant range of expenditure categories; secondly, to identify the products and activities that best symbolized these categories; and thirdly, to confirm that the pictures drawn by local artists were easily recognizable by individuals from a range of backgrounds. In the initial stages of the pictorial diary design, women dominated the FGDs and consequently the pictures were biased towards expenditures made more frequently by this group, such as washing soaps and buckets. It was only after this gender imbalance in the FGDs was addressed that items such as razors and batteries were identified by male participants as important expenditure items. Not only is it important to include a comprehensive range of items (in this case, products and services), but also the symbols representing each item must be accurate. For example, during piloting in The Gambia, it was revealed that few people were recording any expenditure on live-stock because the cow was missing a hump!

One alternative to using pictorial diaries in illiterate communities is to use diaries that require written information and to nominate an alternative person in each household who can act as a scribe, such as a school-age child (Grosh and Glewwe 2000). We also found that some elderly respondents had no experience of using writing implements. These respondents may need some guidance in the use of such implements or, alternatively, a scribe may need to be identified. It should be noted, however, that in some instances using scribes could compromise the quality of the data, especially if the information is considered to be of a private nature.

It is also useful to consider using different prompts to encourage accurate and regular diary entries. The pictorial diary used in Tanzania and The Gambia included pictures of both the items that households commonly purchased, as well as drawings of the different currency denominations. Households were also given a large colourful aide-mémoire that demonstrated in more detail the different items included in each expenditure category (see Appendix 2). As already mentioned,

participants were interviewed at the end of each week to check that diaries were being correctly maintained and if any expenditures had been missed. The interview schedule can be found in Appendix 3.

In summary, researchers contemplating using diaries in a similar setting should not be discouraged by problems of illiteracy. We would argue that provided careful attention is paid to designing a diary that reflects local customs and symbols, as well as using prompts such as aide-mémoires, then the same detailed information gathered from literate communities can be sought from predominately illiterate ones. As one of our participants rightfully said: 'we may not be able to read and write but we know exactly how much we spend!' Pictorial diaries can be an important method for bringing marginalized groups, often sidelined in research, back into the picture.

How long should a diary be maintained?

This is perhaps one of the most hotly debated issues around diaries. The time period covered by previous diary studies ranges from 6 days (Delespaul and de Vries 1987) through to 10 years (Verbrugge 1980). Generally speaking, the most commonly used period is 1 week (Mariño et al. 1999), although for consumption and expenditure diaries the norm appears to be a maximum of 4 weeks (Grosh and Glewwe 2000). This is consistent with the recommendation of Coxon et al. (1993) that diaries generally should not cover a period of over 1 month.

However, if issues such as seasonal variation in consumption and expenditure are likely to be significant, then collecting diary data for a week or even a month is meaningless. Similarly, in many low-income countries, people engage in different home production activities and different forms of paid employment at different times of the year. Migration of household members in search of work or education for short or extended periods is also common. This in turn can influence health care expenditure and consumption choices. Disruptions to the local economy culminating in events such as currency devaluation are also unlikely to be reflected in short-term consumption and expenditure data. There is a trade-off here between the length of time a diary is maintained and the burden placed on respondents. There is no point pushing participants to maintain a diary for longer and longer simply to generate poor quality data.

It has been reported that, over time, participants become tired of keeping records and become less thorough in their reporting (Grosh and Glewwe 2000). While participants may not formally withdraw from a study, they may communicate their reluctance to participate by in effect 'dragging their feet'. Evidence from a number of Living Standards Measurement Studies suggests that the burden of keeping a diary will lead to less detailed entries over time (Martini and Ivanova 1996; Blaizeau 1998). For example, in the 1995 and 1996 income and expenditure surveys in Belarus, the expenditures recorded in the second week were approximately 15% lower than in the

first week of diary keeping (Martini and Ivanova 1996). In Armenia, the same diary was kept for 4 weeks and the downward trend continued over this longer span. The second week's expenditures on food were 26% lower than those of the first week and the third week's were 35% lower than those of the first; the fourth week's were 40% lower than those of the first week.

This was not our experience in Tanzania and The Gambia, where per capita expenditure was also compared between weeks 4 and 8, weeks 8 and 12, weeks 12 and 24, and finally, between weeks 24 and 48. Figure 1 indicates that per capita expenditure did not fall at an increasing rate in either country. In fact, expenditure actually *increased* in Tanzania and The Gambia between weeks 24 and 48 by 17% and 13%, respectively. Judgements about changes in the level of accuracy and detail of diary entries must be made with caution. As already noted, changes in expenditure are a result of many factors. For example, household expenditure in The Gambia and Tanzania often rises in the lead up to religious festivals. Therefore, isolating the effect of fatigue on the thoroughness of diary entries can be difficult.

Another piece of information useful in guiding decisions about how long to maintain diaries is the dropout rate (Fowler 1993: 39). In our study, this was 20% ($n = 74$) for The Gambia and 24% ($n = 73$) for Tanzania. Judgements about whether such rates are 'good' or 'bad' are complex, and while there is no agreed upon standard, the convention for mail surveys and personal interviews seems to be a response rate of around 75% (Fowler 1993: 40). In addition to the dropout rate, careful attention should be paid to *who* dropped out. Those interested in randomly selecting diary keepers need to check carefully that the non-respondents are also random or, put differently, that those who dropped out are not systematically different from the whole population. If they are, then it will be difficult to generalize the findings from the diaries more broadly than to the specific study being conducted.

Finally, in Tanzania, 'check-out' interviews were conducted with 80% ($n = 188$) of those participants who maintained diaries for the full 12 months. In this interview

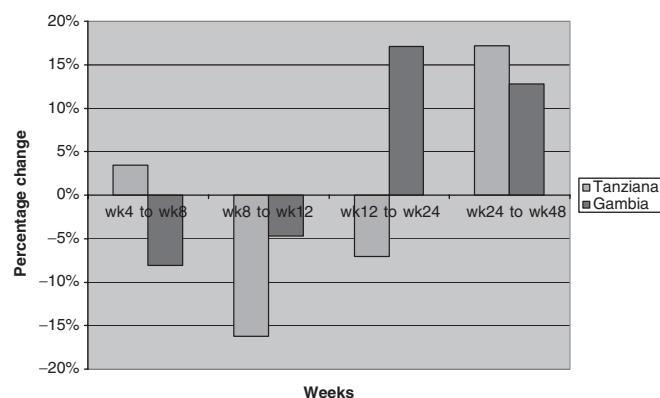


Figure 1. Changes in per capita expenditure

they were asked how long they felt it was ‘appropriate’ for them to maintain a diary. Approximately 53% of respondents felt that a 12-month diary was appropriate, while 33% preferred to keep it for 6 months. Only 5% indicated they would have preferred keeping a diary for 3 months or less. The remaining 9% said they would have continued to maintain their diary beyond 1 year. Those who preferred 6 months or less cited fatigue and disruptions during farming seasons as the main reasons for wanting to stop at that time. Those who were prepared to maintain a diary for 12 months or longer said this was because they wanted us (the researchers) to get a clear picture of the effect seasonality has on their welfare. One respondent stated: ‘if you want to know better about the problems we face, the diseases we suffer, and the farm output, then it’s better for a year’.

While it would be foolish to try and argue that diaries *do not* place a significant burden on participants, it cannot automatically be assumed that this results in less thorough reporting. We would strongly advise that field teams regularly review diary entries and interview respondents directly to understand the reasons for any discrepancies in expenditure. We have also found that participant enthusiasm is dependent on the level of trust between diary keeper and fieldworker. It is recommended that wherever possible, the same field worker be used to monitor and support the same household over the course of the study. Finally, participants who engage in long-term data collection should always be regularly reminded that they are free to withdraw at any time from the study. A brief statement to this effect at the commencement of a 1-month or 1-year study is at best inadequate and at worst unethical.

How frequently should entries be made?

In addition to the length of time a diary is maintained, the recall period needs to be considered. Recording events is usually related to the type of phenomenon being studied (Reis and Wheeler 1991). For the method of interval-contingent recording, respondents record their experience at regular intervals, such as at the end of each day or after each meal (Mariño et al. 1999). When events are well defined or rare, the method of event-contingent recording has been recommended (Reis and Wheeler 1991). This requires reports from participants every time the event under investigation takes place.

In our study, fieldworkers made weekly visits to diary keepers and during these interviews participants were reminded of the importance of making regular entries as close as possible to the time of actual expenditure. While one of the perceived advantages of diaries is that they can be maintained and updated by respondents at their own convenience, researchers need to be aware that without clear guidance on the regularity of entries, there is the danger that they soon become a similar instrument to a one-off structured questionnaire, whereby individuals are attempting to recall expenditures over a much longer period of time (Mariño et al. 1999). There is obviously

no guarantee as to how participants will complete diaries in the privacy of their own homes, but this does not rule out researchers actively encouraging the regular updating of diaries.

Who should complete the diary?

A number of factors need to be taken into consideration when deciding *who* is the most appropriate person within a household to maintain a diary. In the case of consumption and expenditure diaries, where responsibility for spending lies with one key person such as the household head, the decision of who is to keep a diary is made a little easier. Problems sometimes arise, however, when household heads are away from home for extended periods. For example, in many rural areas family members leave their homes in search of food and water for their livestock, or to find casual work in other peoples’ fields. In these instances, they may not be the best person to maintain the diary, or at least not on their own. Of those who dropped out of our study, 27% in The Gambia and 14% in Tanzania withdrew because they permanently moved away or were absent for periods longer than 3 weeks. Others have noted that school-age children are sometimes enthusiastic to take on the task of diary keeping (Grosh and Glewwe 2000). However, in the case of recording consumption and expenditure, younger members of the family may not have a clear idea of what their parents spend their money on, especially if they are at school for much of the day. It is also conceivable that older members of households may not be comfortable sharing this type of information with their young children.

Where spending is more disaggregated within a household and individuals have limited knowledge of what each person spends, then multiple diaries per household should be considered. In our study, there was considerable discussion over whether there should be one public diary maintained by a household or a number of individual diaries per household. In The Gambia, many of the communities we worked alongside were homogeneous, and it was feared that individual diaries would be seen as trying to introduce an element of secrecy and competition within and across households. On the other hand, initial visits to households indicated that while the household head was considered to be the main spender, he or she was not able to recall all forms of spending. For instance, women might have sold produce from their own gardens in the local market and used this money to buy provisions for their household. Moreover, polygamy is common in some areas in which we were working. Wives were not always willing to reveal their spending habits with each other. After weighing up these issues and much discussion with communities, it was decided that multiple diaries would be kept in those households where significant gaps in data were expected.

Two issues need to be borne in mind if multiple diaries within a household are kept. First, from a research point of view, maintaining diaries can be a resource-intensive

process, and where research funds are limited, some trade-off may need to be made by cutting back on the total number of households in the study in order to allow for multiple diaries within a household. Secondly, thought needs to be given early on as to how data from different household members will be collated. There may be overlap in the entries made by different family members. Is the diary constructed in a way that areas of overlap can be easily identified? One option is for fieldworkers to regularly monitor diary entries and to discuss any irregularities with family members as they appear. In our study, especially in The Gambia, the issue of double counting and intra-family flows of money needed to be carefully addressed. Fieldworkers went to great lengths to explain to participants in multiple diary households that if they gave money to someone within the house, this was not to be entered into the diary; the most common example being a household head giving his wife a little towards housekeeping (known as 'fish money'). The only entries were for money that people spent outside their immediate household, including donations to charity. Participants understood that if the head of the house recorded giving his wife money to buy food and his wife then recorded the same amount again when she went to the market and bought the food, this money would be recorded twice. Often issues of double counting could be addressed during the weekly interview as the fieldworker and participant went through the checklist.

What other issues need to be explored in the piloting phase?

There are also several issues that require careful consideration during the piloting of diaries. For example, what type of support do respondents require to maintain diaries, especially if they are to continue for a number of weeks or months? Are daily or weekly visits by field staff required to maintain momentum and to ensure the quality of the data recorded? Given the detailed input required by participants is there some expectation of financial or other form of reimbursement? How often will diary entries be collected from participants? For example, if data are collected over a month, it is useful to collect entries at regular intervals so that preliminary responses can be 'eye-balled' for inconsistencies or gaps. Moreover, some measures may need to be taken by researchers to ensure that households safely store entries even if they are to be collected regularly. The importance of piloting should never be underestimated, and in the case of diaries it is perhaps even more critical, given how little we currently know about their practical use and the considerable amount of time participants invest in completing them. A checklist covering many of the issues discussed in this section can be found in Appendix 4. The checklist is designed to be a guide to those contemplating the use of diaries, especially in low-income country settings.

Conclusions

One of the key aims of this paper has been to provide some practical insights into the design and application

of diaries. Particular attention has been paid to the feasibility of using consumption and expenditure diaries in low-income countries that are characterized by problems of illiteracy and population mobility. It was also an underlying aim of this paper to clear the air of 'doom and gloom' that clouds much of the existing literature on diaries. It has been argued here that diaries can be successfully used in predominantly illiterate communities to collect data on a range of pertinent health policy questions. And while there is always a price to be paid in terms of respondent fatigue, this does not have to be exorbitant and nor does it always have to be paid in terms of poor quality data. The paper also highlights a number of different techniques that field teams can use to support diary keepers in an effort to minimize the problem of fatigue. Regular interviews with diary keepers as well as the use of aide-memoires and other prompts are strongly recommended. Those planning studies involving diaries need to budget generously for this type of support and training. Lastly, the success of diaries very much depends on there being a trusting relationship between fieldworker and diary keeper. Maintaining the same fieldworker(s) helps to foster and protect this delicate relationship.

Endnotes

¹ Further details on this study can be found at [<http://www.lshtm.ac.uk/gmp/research/householdandcommunity.html>].

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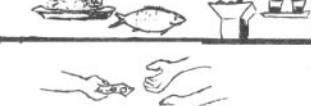





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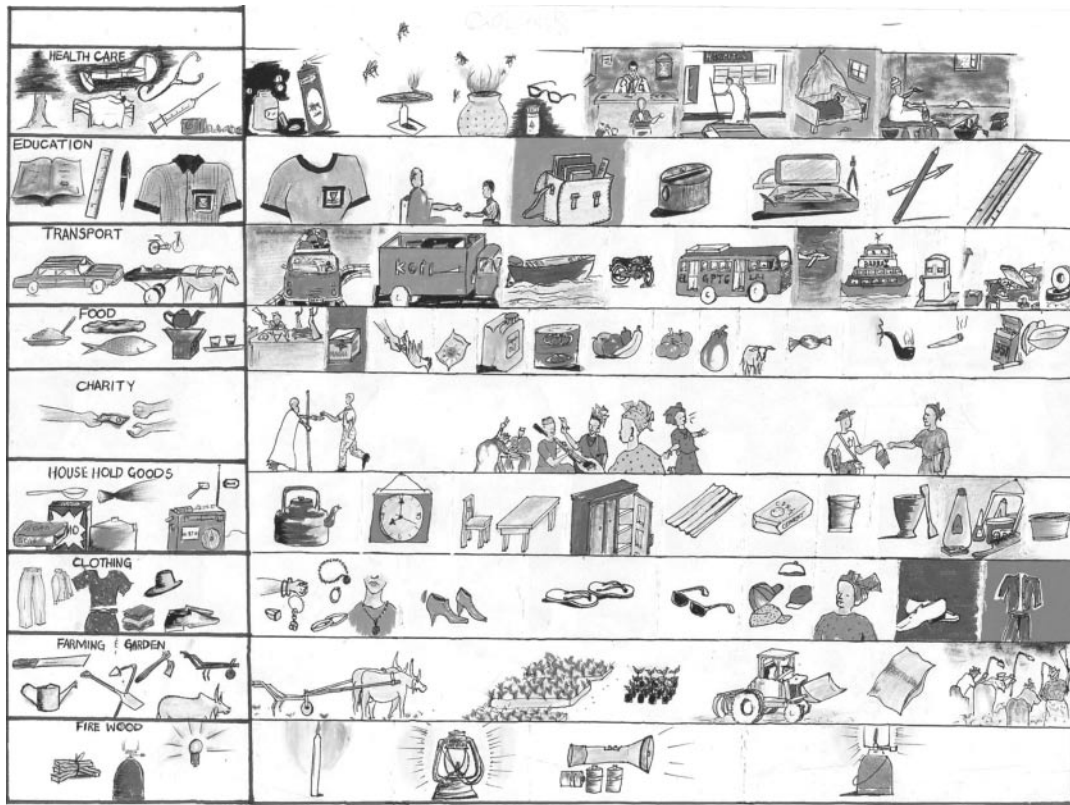
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Appendix 1. The Gambian pictorial diary

DeMTAP Study Diary No. <input type="text"/>							
Date: <input type="text"/> Compound No. <input type="text"/> Hhd No. <input type="text"/> Village/Block No. <input type="text"/>							
HEALTHCARE 							
EDUCATION 							
TRANSPORT 							
FOOD 							
							
HOUSEHOLD GOODS 							
CLOTHING 							
FARMING 							
FIRE WOOD : GAS 							

Appendix 2. The aide-mémoire



Appendix 3. Weekly interview schedule - expenditure checklist

Date		Diary Number	
Compound Number		Name of Diary Holder	
Household Number		Relationship to Household Head	
Name of Household Head		Name of Fieldworker Responsible	

1. HEALTHCARE				
Malaria and Fever			All other health care	
<i>Variable</i>	<i>Amount in Dalasis</i>	<i>Comments</i>	<i>Amount in Dalasis</i>	<i>Comments</i>
Injections				
Tablets/Medicine/Syrup				
Consultation fees				
Bed fees				
Prevention				
Transport to health facility/provider				
Other (Specify)				
TOTAL:_____			TOTAL:_____	
2. EDUCATION				
<i>Variable</i>	<i>Amount in Dalasis</i>	<i>Comments</i>		
School fees				
Lunch				
Uniforms				
Books & stationery				
Other (specify)				
		TOTAL:_____		
3. TRANSPORT				
<i>Variable</i>	<i>Amount in Dalasis</i>	<i>Comments</i>		
Private vehicles (e.g. cars, motorbikes, bikes, buses)				
Horse and cart				
Petrol				
Maintenance				
Commercial vehicle, i.e. taxi				
Other (specify)				
		TOTAL:_____		

Appendix 4. Checklist for researchers

- ✓ What is the most appropriate design (i.e. structured or unstructured? written information or pictorial?)
- ✓ Can prompts such as an aide-mémoire be used?
- ✓ Can an existing diary or prompt be adapted for use?
- ✓ How long should diaries be maintained?
- ✓ When should diary entries be made?
- ✓ Who within a household should complete the diary?
- ✓ Should multiple diaries be kept by a household?
- ✓ What level of field support is needed?
- ✓ Can diary entries be safely stored by participants?
- ✓ How often should entries be collected by researchers?

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