ORIGINAL ARTICLE

Towards a Satellite Account for Health – Household's Time Use on Health Care

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ABSTRACT

Pakistan's labor force survey provides information on the time use on several activities of private households. In this article we analyse the time used by private households on health care for two reasons. First, with help of this information we are able to describe the nonmarket production of health care of own family members by households in monetary terms. Secondly, in some cases the health care is carried out against pay to other households, so that the service becomes a market production and has to be included in National Health Accounts (NHA) according to the System of Health Accounts (SHA).

Keywords: time use, health care, National Health Accounts, satellite account, nonmarket production, extended SNA activities, System of Health Accounts

JEL classification: J22, I11, I12

INTRODUCTION

Pakistan's labor force survey asks for the time of the household used on several activities. One activity requested is the 'work on caring for children or health care'. The analysis of time used by private households on health care allows for estimates in monetary terms of health care of private households. The nonmarket production of health care of own family members by households may hold as extension of National Health Accounts (NHA). NHA in Pakistan so far only cover monetary transactions of public and private entities on health. NHA can be enhanced by additional estimates of nonmonetary transactions and unpaid work, which is so far unaccounted in NHA. This extension is necessary, since NHA according to the internationally accepted System of National Accounts (SNA) generally do not take into account nonmonetary transactions. SNA allows for the production of satellite accounts in those cases where there is a need to expand the analytical capacity especially where the linkage of physical data sources (like time use) and analysis to the monetary accounting system (valuation) becomes possible (UN, 1993, 21.4).

Activities can be classified in three categories: 1) SNA work activities (productive and economic like primary production, secondary production like construction or trade, business and services for income), 2) extended SNA activities (unpaid domestic services for own final use within the household, unpaid care giving, provide community services), and 3) non-SNA activities (personal activities like learning, social and cultural activities, mass media or personal care) (Mrkic, 2009). Unpaid work in the form of health care for family members is just one example for unpaid work or nonmarket production of services. Extended NHA could go beyond standard accounting and measure both quantity and quality of health care and describe these nonmarket productions in additional satellite accounts for health (NRC, 2005, 14). The proposed extended accounts are consistent with national market accounts, since they would only measure the level of economic activity, but would not try to measure welfare (Fraumeni, 2005, 1).

Furthermore, it was found that in some cases the health care is carried out against pay to other households, so that the service becomes a market production and has according to System of Health Accounts (SHA) to be included in the regular NHA. In regard to the relevance of household's health care we have a look at the related classifications of SHA1 and its latest (still ongoing) revision (SHA2). In the health care provider classification (HP) 'private households as providers of home care' are covered under HP.7.2. The professional services are covered as 'providers of home health care services' under HP.3.6 (OECD, 2000, 144f). In the functional classification the (private as well as the professional) health care services can be classified depending on the type of health care as 'Services of curative home care' (HC.1.4), 'day cases of long-term nursing care' HC.3.2 or 'Long-term nursing care: home care' HC.3.3. In the latest draft SHA2 households as providers have been removed to HP.8 (OECD, 2010, 102 and 115). But still the own-account production of

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these personal services by members of the household for their own final consumption is excluded from measured production in conventional national accounting practice (OECD, 2000, 59).

DATA AND RESULTS

The valuation of unpaid health care services is an important issue with respect to health policy and health insurance. Unpaid services in the households do influence the length of stay at the hospitals when patients are cared by their families, which is very common in maternal mother and child care and elderly and disabled individuals. WHO defines the expenditure for nonmarket production as the value established at the cost of resources (labour, supplies, etc.) used to produce the good or service in question (WHO, 2003, 295).

Services produced by the household have to be compared and valuated with the market price for the same service, e.g. given by a maid or nurse, which are paid for their services. The valuation cannot be based on the opportunity costs, because e.g. days off are difficult to valuate, since 1. the share of the informal economy is high and respondents are not even able or willing to give their real income (The given income is either calculated as residual out of running businesses and therefore strongly depending on economic cycles or the officially given income is much lower due to the high importance of the informal sector.) and 2. since many caring persons will be carried out by unemployed/retired persons like grandparents etc. And 3. the household could have hired someone else at market rates to take care of the relative. Therefore the market price (1,500-3,000 PKR per month for a maid or 6,000-12,000 PKR for a nurse (Janjua, 2009, 18)) should be applied for valuation. Another 4. argument why to use market prices instead of the individual opportunity costs is the gender component. This means that the largest share of formally unemployed women's activities is unpaid and therefore not taken into account; its opportunity costs would be valued with zero (George et al., 2009, 14f). Household production satellite accounts should focus on the production of goods and services that could be readily accomplished using market substitutes for household members' time and they should be valued using replacement cost. For household time inputs to production this would be a replacement wage, which is the market wage of a specialist adjusted for differences in skill and effort between home and market production (Landefeld et al., 2009, 2).

Health care services provided without payment are a major input in some countries, which is unrecognized by NHA so far. In Pakistan more people receive unpaid personal assistance services than paid services from households; with the given data we are able to quantify them. The average weekly amount of unpaid care with 8 hours was as expected found to be much higher than the paid care work.

Time use survey results: An alternative data source is the Pakistan time use survey 2007, which covers unremunerated work like housework and care activities. The time used for the three types of activities is available for first the average time spent on various activities for all respondents. In this way, the total average time on all the activities adds up to 24 hours. However, the disadvantage of this approach is that in some of the activities, persons included in the divisor might have not participated. Therefore, the second presentation is prepared to give average time spent in various activities for the participant only (FBS, 2009, 25).

Table 1: Mean Minutes Per Day Spent on Various Activities by all Respondents

Activities	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
SNA	196	321	78	207	324	98	177	316	42
Extended SNA	161	28	287	167	28	295	151	27	272
Non- SNA	1083	1091	1075	1066	1088	1047	1112	1097	1126
Total	1440	1440	1440	1440	1440	1440	1440	1440	1440

Source: FBS, Time Use Survey 2007, 2009, 25.

Unpaid health services have also implications from a gender perspective, because usually female participation rates in e.g. giving care is much higher than for males. Females in rural as well as in urban areas (about 20% each) have much higher shares than males (about 2% only) in extended activities. The share of non SNA activities is with three quarters relatively high in Pakistan.

For some participants a further disaggregation of activities is available, which shows the importance of health care compared to the care of children (FBS, 2009, 51). The share of health care is about one third (33.5%) of the total care on both, children and sick. These results differ between sexes and areas (the share is more than one half for rural and total men and only 11% for total women).

Overall, the time use survey just gives some insights on certain participants and allows us to estimate the importance of health care compared to children's care. An estimate of the aggregated time used by the total population is not possible. Therefore the data from LFS have to be taken into account.

Labour Force Survey: The LFS gives insights on the hours 'During the last week worked in caring for children or health care' (LFS, 1999-2009). Respondents are individuals with ten years and above who are doing housekeeping and are not willing to work or are willing to work but do not find a job at the moment. The total hours worked are disaggregated by hours spent for the 'Own family' and hours spent for 'Other People for cash'. These figures can be raised with the related weights to Pakistan's total population, divided by 33.5% to show the pure health care without child care and multiplied with 50 weeks per year to demonstrate the importance for the whole country.

Table 2: Raised yearly houres worked on health care

	Total hours for health care	**Hours for own family**	**Hours for sale**
1999-00	2,345,261,819	2,344,699,019	562,800
2001-02	2,591,886,759	2,591,442,264	444,495
2003-04	3,043,384,885	3,043,233,616	151,269
2005-06	2,575,947,057	2,575,933,322	13,735
2006-07	2,522,317,008	2,522,258,299	58,709
2007-08	2,508,826,574	2,508,763,762	62,813
2008-09	2,634,207,778	2,634,184,864	22,914

Source: own calculations based on FBS, LFS, 1999-2009.

Raised to the total population there are about 2.6 billion hours worked on health care per year. Only a small share, less than 1%, of the given health care is carried out against pay. Women carry out between 97-98% of the health care. These figures have to be transformed via valuation from time dimension to monetary dimension to be applied in NHA.

According to SHA only the type of paid health care for other people has to be taken into account. Unpaid care for own family members as extended SNA activity is excluded from NHA, but can be covered in a separate estimation for health care. Therefore, we apply the hours worked of LFS and value them with market prices for health care services. Even if we apply the lower bound of a maid salary with 1000 PKR per month (Dawn, 2010) and only the official working time of 40 hours per week, the given amount of hours worked results in health expenditures for health care of more than 15 billion PKR in most years. This figure has to be seen in relation to the total health expenditure in 2005-6, which is 185 billion PKR and the private household's out of pocket payments, which are 119 billion PKR (FBS, 2009b, 38). In 2005-6 an additional amount of about 9% of the total health expenditure is health care given by households. The paid health care services which have to be included in NHA are given in the next table.

Table 3: Yearly values worked on health care in PKR

	total value health care	**value own family**	**value for sale**
1999-00	14,657,886,370	14,654,368,870	3,517,500
2001-02	16,199,292,244	16,196,514,152	2,778,092
2003-04	19,021,155,531	19,020,210,098	945,433
2005-06	16,099,669,106	16,099,583,263	85,844
2006-07	15,764,481,297	15,764,114,367	366,930
2007-08	15,680,166,089	15,679,773,511	392,578
2008-09	16,463,798,613	16,463,655,400	143,213

Source: own calculations based on FBS, LFS, 1999-2009.

The value of paid services on health care which has to be included in NHA differs strongly over time from 85,000 PKR in 2005-6 up to more than 3.5 million in 1999-2000. Most households respond not to give any paid services to other households. However, in Time Use Survey, which is not connected to questions on employment and income, many respondents answer to have carried out care 'for non household sick and disabled adult'. These individuals have even spent about double the time on care for non household members than those who cared for household members (FBS, 2009, 151).

CONCLUSION

With the help of time use information we are able to quantify the time used by private households on health care. The results can firstly be applied for an estimation of the nonmarket production of health care of own family members in monetary terms. For the NHA base year 2005-6 health care given by households has an additional share of about 9% of the total health expenditure. Secondly, in some cases the health care is carried out against pay to other households, so that the service becomes a market production and has to be included in National Health Accounts. This service has an average overall value of 1.2 million in the last available years, which should be taken into account regularly in NHA.

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