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# Are Chronically Poor People being Left Out of Progress Towards the Millennium Development Goals? A quantitative analysis of older people, disabled people and orphans

Edoardo Masset [a] & Howard White [b]
[a] Institute of Development Studies , University of Sussex , UK
[b] Institute of Development Studies , University of Sussex , UK
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# *Are Chronically Poor People being Left Out of Progress Towards the Millennium Development Goals? A quantitative analysis of older people, disabled people and orphans*

EDOARDO MASSET and HOWARD WHITE
*Edoardo Masset and Howard White, researcher and fellow respectively, are at the Institute of Development Studies at the University of Sussex*



**Abstract** The most useful poverty profiles are those based on functional groupings defined in relation to key livelihood features. This paper considers three groups, sometimes called the traditional poor, which are commonly identified as being poor in participatory poverty assessments: orphans, people with disabilities, and older people. Each group may be considered a functional classification because its members share similar livelihood strategies. This paper reports the level and trend in selected Millennium Development Goal-related welfare indicators for these groups, and compares these trends with those in the population as a whole in Bulgaria, Ghana, Nicaragua, Vietnam and Andhra Pradesh. It is generally found that these groups are relatively disadvantaged and in some respects experience less rapid progress than other population groups, suggesting the need for targeted efforts to support these disadvantaged groups to ensure progress toward meeting the Millennium Development Goals. This paper recommends changes in data collection for greater coverage of these groups and identifies some important research questions.

**Key words:** Millennium Development Goals, Chronic poor, Orphans, People with disabilities, Older people

## Introduction

The Millennium Development Goals (MDGs) are an ambitious and widely adopted set of development goals, mostly to be met by 2015. Progress toward these goals varies. Analysis shows that many of the goals will not be met in many countries (for example, World Bank, 2003). But there has not been any analysis of how some key groups of the poor within countries are faring with respect to these goals. This paper presents such an analysis for three groups that count among the traditional poor (Illife, 1987) and are

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commonly identified as being poor in participatory poverty assessments. These groups are orphans, the disabled, and older people.[1]

The approach in this paper differs from that taken in many poverty assessments where the poverty profile is constructed in terms of income deciles. As argued in Hanmer *et al*. (1999) it makes more sense to classify the population into functional groups, where people are grouped according to their livelihood strategy (i.e. their relation to the means of production). The three groups used here are not strictly speaking functional groups, but they are, to a greater or lesser extent, dependent on others for their well-being (White *et al*., 2000b). Each of these three groups includes a substantial share of the population:

- Orphans (see second section 'Orphans' for definition) comprise between 7% and 11% of children in most countries.
- One in 10 households has a disabled member.
- Between 15% and 30% of older people either live alone or with no adult of working age (referred to here as Elderly Headed Households (EHH)).

Since all these groups are disproportionately poor, they are even more significant as a share of poor households. Many household surveys include data that can be used to analyse their welfare but, despite this, empirical analysis is scant and their interests rarely addressed in mainstream poverty reduction strategies.

This paper does not offer any methodological innovation. Rather, it uses available data sources to document the relative disadvantage of these three groups of poor people. The countries included in this analysis are Bulgaria, Ghana, Nicaragua and Vietnam — chosen because they have available data appropriate for our analysis.[2] Data on Andhra Pradesh were included for the analysis of disability only. The paper briefly introduces the three groups being discussed, followed by the data required to analyse their welfare. The relative position of these groups on selected MDG indicators and how it has changed over time is then reported, followed by the conclusion.

## Groups of the chronic poor investigated

### *Orphans*

The number of orphans has been growing, particularly in Africa, as a result of both HIV/AIDS and conflict. The most recent estimate is that there are over 34 million orphans in Africa — that is, 12% of the continent's children (UNAIDS, 2002). In Asia and Latin America the figure is about 8%, of which a far lower percentage are accounted for by HIV/AIDS than in Africa. Many orphaned children end up living on the streets, but the majority are taken in by other family members. The receiving family's resources are stretched and the welfare of all family members is reduced, especially if the children are staying with elderly relatives such as grandparents. Furthermore, available evidence suggests that the welfare of orphans is inferior to that of other children in the family.

TABLE 1. Percentage of orphan's school enrolment as percentage of other children's school enrolment

| Country | Ratio (%) | Country | Ratio (%) |
|---|---|---|---|
| Rwanda | 93 | Niger | 69 |
| Angola | 89 | Burundi | 69 |
| Nigeria | 88 | Ethiopia | 60 |
| Zimbabwe | 85 | Benin | 37 |
| Cambodia | 71 | Mozambique | 35 |

*Source*: UNICEF (2003) State of the World's Children.



Orphaned children are less likely to attend school, receive health care and are less well nourished than other children — data for two of these indicators are reported in the following. For example, the proportion of orphans aged 10–14 years who are attending school is lower than that for children with both parents living in all countries (UNICEF, 2003). In Mozambique, school enrolments are 24% for orphans compared with 68% for other children, or a ratio that is as low as 35% (see Table 1).

### *People with disabilities*

Disability is both a cause and consequence of poverty. Families with a disabled member are very common, making disability a major, but often hidden, cause of poverty. The burden of care usually falls on women, who thus have an increased workload. The poor often do not have a choice but to engage in risky or health-threatening activities, and poverty leads to disability when accidents are untreated or medical services are insufficient. For instance, lack of maternal and infant care at the time of birth may lead to disabilities. The poor generally have a heavier work burden and, once injured, are less likely to secure a livelihood. The problems of disability are reinforced by social exclusion as people with disabilities are denied employment, access to social networks and often to political processes.

Although people with disabilities are a part of the traditional poor, the position of this group has not been much considered in poverty analyses. Elwan (1999) concluded that data for developing countries "are poorly standardized and produce non-comparable estimates" (p. iii). For this reason, knowledge about poverty and disability "relies heavily on anecdotal evidence and case studies" (Elwan, 1999, p. iii). This paper shows that these statements are only partly correct. Living standards surveys in several countries have included questions on disability. For example, analysis of Living Standard Measurement Studies (LSMS) data from Tanzania show households with a disabled member are likely to have a mean consumption of less than 60% that of other households and they have a 20% greater probability of being poor (Cortijo and LeBrun, 1999). This paper presents estimates of disability from all four countries plus Andhra Pradesh. The data do demonstrate a lack of comparability and the problem of changing definitions over time, as will be discussed later.

### *Older people*

Older people become more vulnerable to poverty as they lose their capacity to work, their actual poverty status depending on informal or formal support systems. In developed countries the state guarantees a minimum standard of living through a state pension, and increasing numbers enjoy higher income through private pensions. Such schemes do not apply in most developing countries, whereby Namibia and South Africa are notable exceptions. The countries of the former Soviet Union and Eastern Europe had well-established pension systems. However, the value of these has fallen dramatically in real terms during the 1990s, so that the official pension is below the poverty line. Older people who are dependent solely on their pension have thus fallen into poverty during the past decade, which was not the case in earlier periods. In developing countries the elderly are dependent on the support of their family, which may or may not be available. Increased incidence of HIV/AIDS has left a greater number of older people with no one to support them, and in a growing number of cases older people support their orphaned grandchildren. Recent findings indicate that approximately eight million children orphaned by HIV/AIDS in sub-Saharan Africa are being cared for by older people (HelpAge International, 2002).

## Identifying the chronic poor in household surveys

Data on the three categories of the poor people identified here can readily be collected in household surveys. But not all surveys contain the necessary questions. First, to investigate progress towards the MDGs for different groups, a number of countries representative of the different areas of the world should ideally be selected, so that a calculation of how each group has fared can be performed. However, in order to conduct such an analysis, survey data that cover at least two different years for each country are required. Second, welfare indicators on the welfare status of individuals rather than of households should ideally be used. Third, there should be some uniformity between the data sets used in terms of availability of welfare indicators and of definition of the selected groups. The number of data sets satisfying all three conditions is not that large.

With respect to the first point of representative countries, both the LSMS and the Demographic Health Surveys (DHS) have completed their second, and often third, round for many countries over the past 10–15 years, so that there is little restriction in choosing countries for analysis. As for the second point on welfare indicators, survey questions often allow for the construction of individual-level welfare indicators such as educational attainment and nutritional status, but there is not always uniformity among surveys in terms of the definition of either social groups or welfare indicators. In particular, relatively few countries have collected data that allow us to identify the disabled, and coverage of orphans has been uneven. Given these considerations, the present study does not cover all three disadvantaged groups in each country covered, and only selected indicators for each group

TABLE 2. Countries and indicators used in the analysis

| Category | Welfare indicator | Countries |
|---|---|---|
| Orphans | Education | Bulgaria |
| | Nutritional status | Ghana |
| | | Vietnam |
| Disabled people | Consumption (per adult equivalent) | Andhra Pradesh (India) |
| | Education | Bulgaria |
| | | Ghana |
| | | Nicaragua |
| Older people | Consumption (per adult equivalent) | Bulgaria |
| | | Ghana |
| | | Nicaragua |
| | | Vietnam |



(see Table 2). The indicators used include income poverty, which is defined at the household rather than individual level. The present section discusses the survey questions used to identify the different groups.

## *Orphans*

Orphans are identified by the same set of questions in the LSMS and DHS surveys, although not all surveys contain these questions. For each household member, or for children under a given age (e.g. 15 years in Ghana), the household questionnaires include the following questions: 'Does the person's mother/father live in this household?' and, if not, 'Is the person's mother/father still alive?'. These questions allow for the identification of 'maternal orphans', whose mother is deceased; 'paternal orphans', whose father is deceased, and 'orphans' for whom both parents are deceased. Sometimes one of the parents is not living in the household interviewed, but none of the household members are able to respond as to whether he/she is still alive. Children of such a household could be considered as orphans, since the parent is permanently absent. However, we used a strict definition of orphans in this paper, considering only those children for whom one or both parents are known to be deceased.[3]

Care should also be taken not to consider the number of orphans obtained from survey data as representative of the number of orphans in the whole population. By definition, household surveys only interview households, and therefore do not count children living in orphanages and those living on the street. It would be helpful for poverty analysis if household surveys aimed at measuring welfare (such as income and expenditure surveys and, notably, the Core Welfare Indicators Questionnaire) included questionnaires covering institutions such as orphanages, homes for the elderly, and disabled and psychiatric hospitals. In addition, supplementary surveys in major urban centres to collect data on those not living in households, including street children, could also be conducted.

### *People with disabilities*

Only a few established household surveys in developing countries collect data on disability. In the case of the LSMS we found only the Bulgarian, Jamaican and Nicaraguan living standard studies to contain this information. Nor are data on disability routinely recorded in DHS surveys. Even fewer surveys collect data on disability for more than one round over time, and when they do, definitions of disability over different survey rounds may differ.

Disability is a normative concept, and definitions may vary depending on the interest of the researcher and on the objective of the research. In the case of DHS Ghana, the household questionnaire records for each household member whether "the person has any difficulty", where the difficulties contemplated are hearing, seeing, moving, speaking, learning, and strange behaviour. The Bulgarian LSMS asks whether the 'the person suffered from any disability or chronic disease during the past year?". The list of possible answers ranges from "neurological problems" "to "physical disability" and "lasting colds". In this case some arbitrary selection of what constitutes disability is required. The Nicaraguan LSMS of 1993 requests whether "the person has any problem such as . . . ?" and a list follows, including difficulty in hearing, speaking, seeing, moving, impairment of limbs, and mental problems. In the DHS of Andhra Pradesh (and for all other Indian states) of 1993, the questionnaire asks for all household members, whether "the person suffers from blindness, tuberculosis, leprosy and any impairment of limbs?".

The use of different definitions of disability across countries, and even within the same country across time, implies that data on disability obtained from different surveys are not strictly comparable. If definitions vary greatly then comparisons should not be made at all. Finally, it should be noted that all the questions already listed ask for subjective responses. Perceptions of disability may vary within a population depending on the levels of education, and the incidence of disability might, similar to self-reported illnesses, be under-reported among disadvantaged groups.

HelpAge have found evidence that older people are consistently missed in censuses and surveys. Nevertheless, the identification of older people should be straightforward since the age of each individual is usually reported in all household surveys in the household roster. A cut-off age is needed to identify a group as the elderly. While 65 years is a commonly used age, 60 years is used for the present study, mainly to ensure an adequate sample size for the elderly. In particular, the focus is on older people who live alone or only with other elderly or children (i.e. EHH), as identified from the household roster that is included in all DHS and LSMS surveys.

## How do chronically poor people fare on MDG indicators?

### *Orphans and school enrolment*

Enrolment is a 'net attendance ratio', defined as the percentage of school-aged children actually attending school. The age group used for our analyses

TABLE 3. School Enrolment Among Orphans

| Country | Overall percentage of orphans | Percentage of School Enrolment | | | | | |
|---|---|---|---|---|---|---|---|
| | | Non Orphans (%) | Orphans (%) | *p* values (orphan versus non-orphan) | Orphans male (%) | Orphans female (%) | *p* values (male versus female orphans) |
| Bulgaria | | | | | | | |
| 1995 | 2.7 | 78.4 | 70.3 | 0.46 | 72.7 | 66.7 | 0.69 |
| 1997 | 2.6 | 81.0 | 77.8 | 0.14 | 75.0 | 81.3 | 0.65 |
| Change | | 2.6 | 7.5 | 0.13 | 2.3 | 14.6 | 0.07 |
| Ghana | | | | | | | |
| 1988 | 7.0 | 64.5 | 73.6 | 0.09 | 77.8 | 58.0 | 0.00 |
| 2003 | 6.2 | 89.7 | 84.9 | 0.28 | 88.9 | 90.2 | 0.86 |
| Change | | 4.5 | 5.6 | 0.14 | −7.4 | −3.4 | 0.06 |
| Vietnam | | | | | | | |
| 1993 | 4.3 | 80.6 | 69.3 | 0.00 | 74.5 | 64.0 | 0.05 |
| 1998 | 4.0 | 90.7 | 80.3 | 0.00 | 82.5 | 78.2 | 0.33 |
| Change | | 10.1 | 11.0 | 0.38 | 8.0 | 14.2 | 0.00 |

*Source*: Calculated from survey data.

refers to primary school in the case of Ghana (6–11 years) and Vietnam (6–10 years), but includes secondary for Bulgaria (5–18 years) on account of the smaller sample size. This difference should be borne in mind when comparing results across countries.

The results are presented in Table 3. The former compares orphans and non-orphans and male versus female orphans. The table also presents the percentage of children who are orphans. The *p* values in Table 3, as those in the other tables, are calculated from a test on the difference in proportions. For example, the difference in enrolment between orphans and non-orphans is tested each year for every country. This test is directed to establish whether the difference in enrolment between the two groups, in a given year and country, is statistically significant. Additionally, there is a test on the difference of the change in proportions over time for the two groups. The aim of this test is to conclude whether the change in enrolment between the two survey rounds for the orphans is significantly different from the change experienced by the non-orphans. The test used is a standard test of comparison of proportions (here p1 and p2) from independent samples (Snedecor and Cochran, 1967, pp. 124–125). The test ($z$) follows a normal distribution and is simply given by:

$$z = \frac{p_1 - p}{\sqrt{\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}}}$$

where $n_1$ and $n_2$ are the sample sizes of group one and two, respectively.

The figures show the 95% confidence intervals, which are wide given the small number of orphans. These confidence intervals will overlap where there is no significant difference between the two groups.

As expected, there are more orphans in Ghana than the other two countries for which we have data. The figure of 6% is lower than the 9.6% reported by UNAIDS (2002), the difference perhaps being partly attributable to orphans not living in households. Street children are unlikely to attend school, so the figures may well over-estimate orphan enrolment. In all three countries the enrolment rate for orphans is less than that of other children. Among orphans, enrolments are less for girls than boys, as is the case for children in general. But in all three countries enrolments have risen fastest among orphans.

Clearly, once the MDG of universal primary education is achieved, then all orphans will be in school. The growing school enrolments of orphans is symptomatic of the success in achieving this goal in countries moving toward full enrolment. Since the reference category for Bulgaria is younger than the age of 20 years, a 100% enrolment is not to be expected. In general, orphans are not being missed out of progress toward the Universal Primary Education MDG. In the presence of increasing enrolments, as in these three countries, orphans do appear to benefit from the general increase in enrolments, suggesting that most of them are not a 'residual group' that will prove far more difficult and costly to get into school.[4] But these gains are not secure.

Table 4 summarizes under-nutrition rates of orphans and non-orphans for Ghana and Vietnam. Nutrition is measured as stunting — that is, children whose height for age falls more than two standard deviations below the international norm for the age and sex. In each case orphans are more under-nourished than non-orphans, although this difference is only statistically significant in the case of the earlier period in Vietnam. In that case the slightly more rapid improvement in nutritional status among this group, while not a statistically significant change, has made the difference in levels between orphans and non-orphans insignificant at the 5% level in the more recent period. Female orphans tend to be less under-nourished than do male

Table 4. Percentage of orphans and non orphans who are undernourished

| Country | Orphans male (%) | Orphans female (%) | Orphans total (%) | Non-orphans (%) | *p* values (orphans versus non-orphans) |
|---|---|---|---|---|---|
| Ghana | | | | | |
| 1993 | 27.8 | 22.2 | 25.0 | 22.0 | 0.700 |
| 1998 | 20.0 | 30.0 | 25.0 | 20.0 | 0.606 |
| change | −7.8 | 7.8 | 0.0 | −2.0 | 0.241 |
| Vietnam | | | | | |
| 1993 | 67.7 | 60.0 | 64.1 | 55.9 | 0.384 |
| 1998 | 49.2 | 42.3 | 46.0 | 38.9 | 0.470 |
| change | −18.5 | −17.7 | −18.2 | −17.0 | 0.566 |

*Source*: Calculated from survey data.

orphans, the exception being the most recent period in Ghana where poor nutrition appears to have increased among female orphans. The story for nutrition is, other than for females in Ghana, the same as that for enrolments: orphans are relatively more deprived than non-orphans but experiencing a more rapid improvement.

### *People with disabilities*

Table 5 presents the share of disabled people in the total population calculated from the data sets. With the exception of Andhra Pradesh, all countries have a disability rate between 10% and 12%, which is in line with the World Health Organization estimate of 10% average disability. As all the disability rates presented are based on a different definition of disability they are not strictly comparable. The lower figure of 6.5% for Andhra Pradesh is a consequence of the very narrow definition of disability.

Table 5 also presents disability rates for the poor and the non-poor, defined as those living in households with average income or expenditure below the poverty line. It would be expected that a much larger share of disabled people would be found among the poor than among the non-poor. This expectation was met in four of the five cases with Nicaragua as the exception, where there are slightly more disabled among the non-poor. This apparent slight anomaly may be the result of relatively favourable treatment of injured veterans from years of civil conflict. However, the difference in

TABLE 5. Percentage of poor and whole population with disability

| | | Disabled people as share of poor | | | Disabled people as share of whole population | | |
|---|---|---|---|---|---|---|---|
| Country | Definition of disability | Male | Female | All | Male | Female | All |
| Andhra Pradesh | Blindness, leprosy and impairment of limbs | 7.6 | 7.8 | 7.7 | 6.6 | 6.4 | 6.5 |
| Bulgaria (1995) | Neurological problems, eye problems, hearing problems, asthma, anaemia, diabetes, mental problems, physical disability, arthritis and traumas | 11.8 | 10.7 | 14.2 | 10.4 | 13.2 | 11.8 |
| Ghana | Difficulty in moving, difficulty in seeing, difficulty in hearing, difficulty in speaking, difficulty in learning, loss feeling, fits, and strange behaviour | 11.3 | 13.5 | 12.4 | 10.2 | 11.2 | 10.6 |
| Nicaragua | Difficulty in hearing, talking, seeing, moving, deformity, mental problems and convulsions | 9.6 | 10.0 | 9.8 | 11.4 | 12.2 | 11.8 |

*Source*: Calculated from survey data.

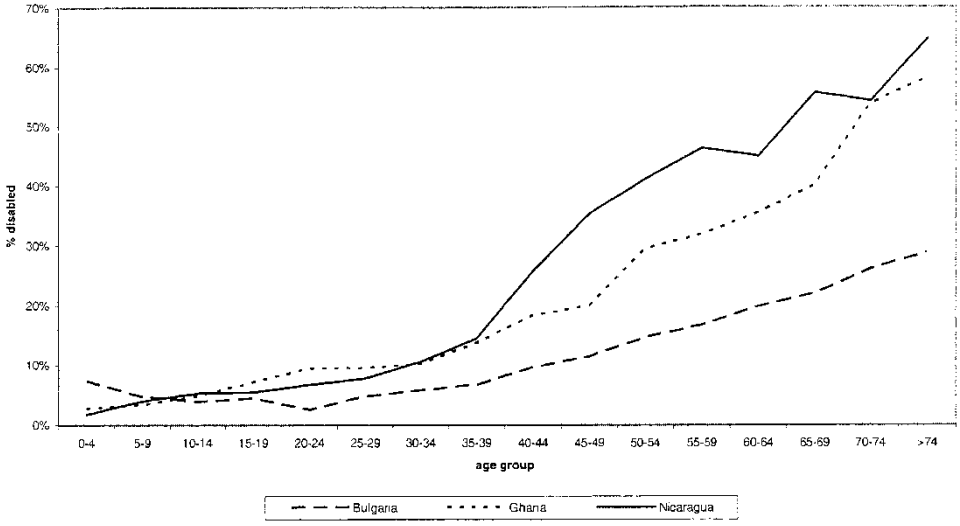


FIGURE 1. Percentage of each age group with disabilities in Bulgaria, Ghana and Nicaragua.

the percentage of poor and non-poor people having disabilities is not particularly large in any of the cases.

A possible explanation for this relatively small discrepancy might lie in the different demographic structures of the poor and of the non-poor populations and the reduced survival chances of the disabled children in low-income countries. That is, there would be more disabled poor people, but many people with disabilities may suffer premature death especially if they are poor. Over one-half of all people older than 75 years suffer from some type of disability. The relationship between age and disability is illustrated in Figure 1 for Bulgaria, Ghana and Nicaragua. Apart from slight exceptions in Bulgaria, the percentage of the disabled population appears to increase with age. This relationship between age and disability is also illustrated in Table 5, where the median age of disabled and able-bodied people and the poor and non-poor are reported. There is not much difference between the median age of the poor and the non-poor, the former being slightly lower on account of the correlation between family size and poverty. But people with disabilities have a much higher median age than the able-bodied. The high mean age of people with disability is partly due to the positive correlation between age and the incidence of physical impairment. Another reason could be that there is a low survival rate among disabled children, particularly those from impoverished homes. If these poor and disabled children are dying at a faster rate than those of the non-poor, then the earlier analysis does not adequately reflect the link between poverty and disability.

The lower survival rate of the disabled poor is illustrated by the life pyramids for people with disabilities (see Fig. 2, as well as Table 6). The pyramids show the absolute number of people with disabilities classified as poor (on the right) and non-poor (on the left), where the poverty line has

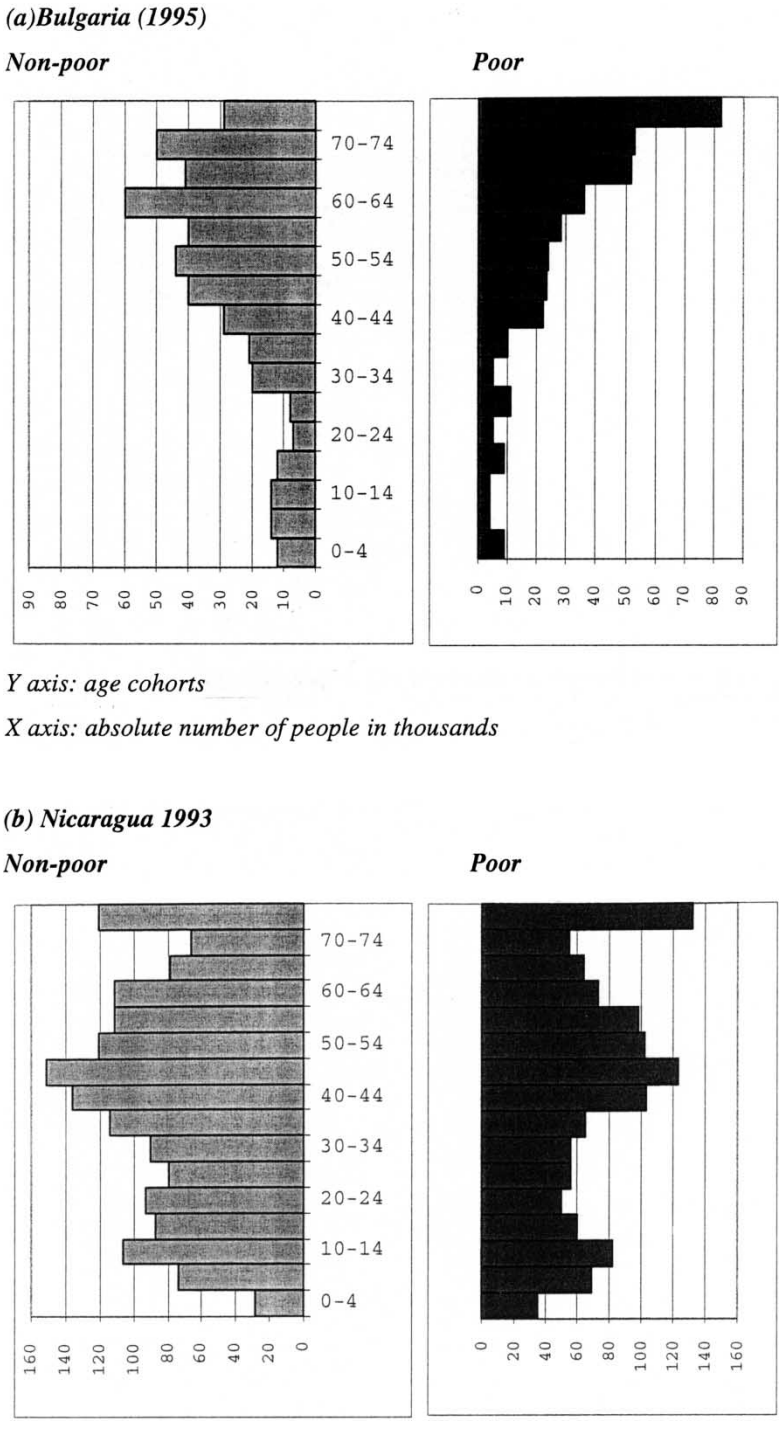


FIGURE 2. Age pyramids for people with disabilities.

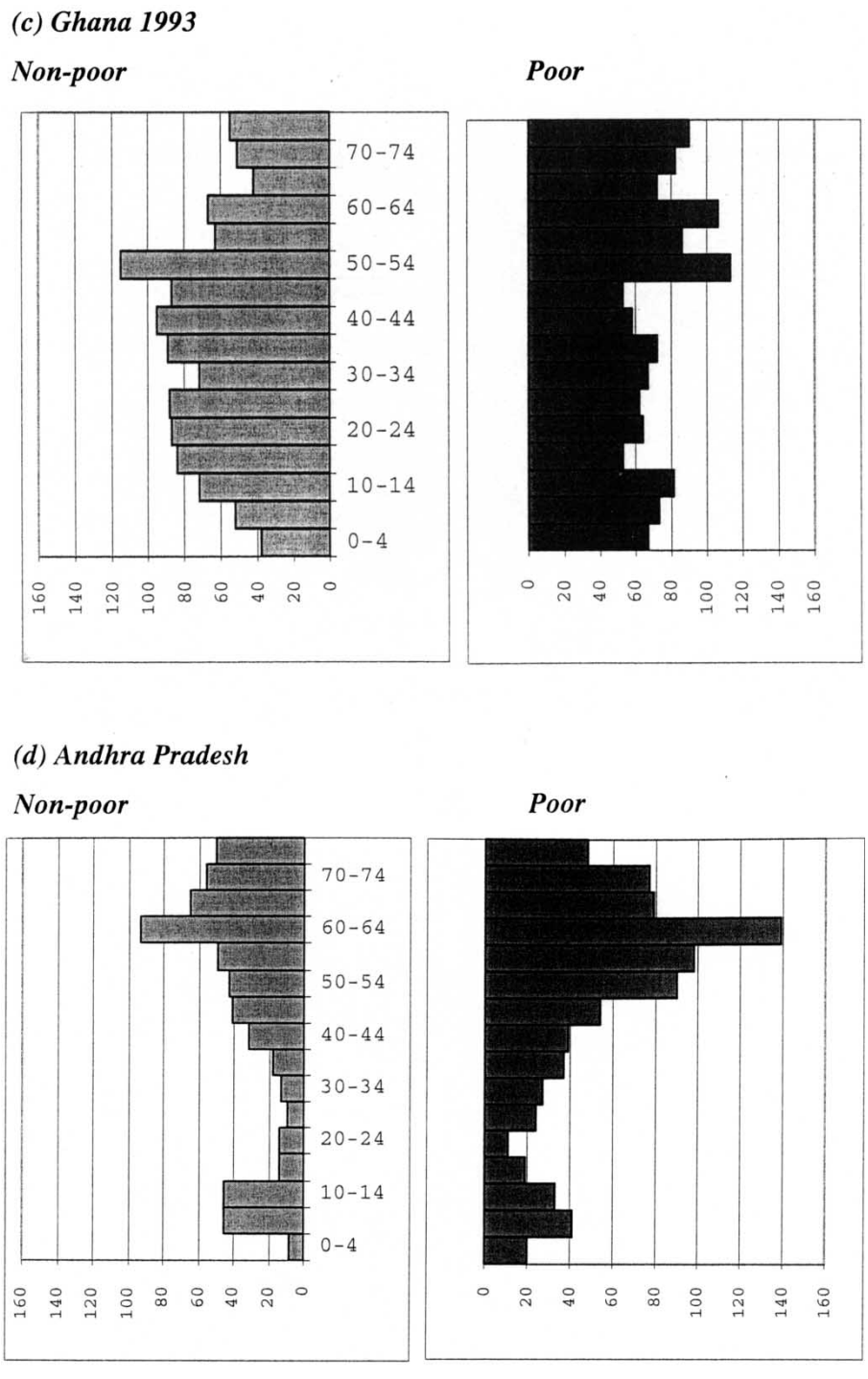


FIGURE 2. Continued.

TABLE 6. Median age (years) of poor, non-poor, disabled and non-disabled people

| Country | All | Non-poor | Poor | Able-bodied | Disabled |
|---|---|---|---|---|---|
| Andhra Pradesh | 21 | 22 | 20 | 20 | 55 |
| Bulgaria, 1995 | 41 | 42 | 37 | 39 | 59 |
| Bulgaria, 1997 | 41 | 42 | 40 | 39 | 59 |
| Ghana | 16 | 17 | 15 | 14 | 41 |
| Nicaragua | 17 | 20 | 14 | 15 | 45 |

been set so that 50% of the population shown are poor. If there were no link between poverty, age and disability, then these pyramids would be symmetrical. In fact, the pattern of the pyramids shows clearly that older, poorer people are more likely to have disabilities. This could be because poor people are more exposed to the risk of becoming disabled and/or, as disabled people get older, they are less and less able to support themselves and so become poor. Whatever the cause, older people with disabilities are disproportionately poor.

However, at younger age groups the pyramids show that the disabled seem less likely to be poor (see Fig. 2). This finding may be explained by 'missing disabled' who are either in institutions or dead. The dip in the age profile in teenage years, which is very evident for Ghana, Nicaragua and Andhra Pradesh, clearly indicates that disabled children 'go missing' — although non-poor ones in Nicaragua and Ghana do not. Unsurprisingly, the phenomenon of missing disabled teenagers is not apparent in Bulgaria.

If the survival chances of the poor disabled were the same as those for the non-poor, one would expect to observe the same or greater numbers of disabled poor children as non-poor (greater since children are slightly more likely to be poor than older age groups). This is clearly not the case. Moreover, the age pyramid for the disabled poor dips with age for children older than 4 years, which that for the non-poor does not (or does so to a lesser extent), providing clear evidence that children with disabilities from poor families are dying more rapidly.

It is also possible to present data on enrolments among children with disabilities, although not a trend for this statistic (Table 7).[5] Perhaps surprisingly, there is no significant difference between enrolment rates for children with disabilities and able-bodied children in Bulgaria and Ghana, and they are significantly more likely to attend school in Andhra Pradesh.

TABLE 7. Enrolment rates for children with disabilities

| Country | Disabled | Able-bodied | *p* value | Disabled male | Disabled female | *p* value |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 80.0 | 66.7 | 0.00 | 88.7 | 69.8 | 0.01 |
| Bulgaria | 74.0 | 76.9 | 0.47 | 64.0 | 84.0 | 0.11 |
| Ghana | 73.6 | 76.6 | 0.65 | 71.9 | 74.6 | 0.27 |
| Nicaragua | 55.7 | 63.7 | 0.02 | 55.8 | 55.7 | 0.99 |

Only in Nicaragua are they significantly less likely to attend school. There is no significant difference in the enrolment rates of children with disabilities by gender other than Andhra Pradesh, where girls are far less likely to attend school. The general lack of discrimination against children with disabilities appears surprising, and perhaps reflects the availability of special education facilities for, for example, sight-impaired children. This is one issue deserving of further research.

### *Older people*

Older people are defined as individuals of 60 years or older. With the exception of Bulgaria, where they comprise one-quarter of the whole population, the elderly represent between 5% and 10% of the total population. Table 8 presents the breakdown by living arrangements. The first three categories of living arrangements constitute EHH: (1) older people living alone, (2) living only with other older people, and (3) living only with children aged younger than 15 (and possibly other older people). EHH are the most common form of living arrangement in Bulgaria, where close to two-thirds of older people live in such households. In Ghana they are around 30%, and in Nicaragua and Vietnam less than 20%.

Income poverty is discussed here as the welfare measure. For nutrition we could have used nutritional status utilizing a reference population for body mass index. However, there are problems in the comparability of international reference populations, with little work on the use of these standards among older people. Sources of income for older people are remittances and earned income. Remittances take the form of transfers in cash or in kind from relatives or community members. Earned income can result from a paid job or, more frequently, from work on own farm or sometimes other activities such as brewing beer in sub-Saharan African countries. Additionally, older people can finance expenditure by living off

Table 8. Household structure for older people

| | | Percentage of older people | | | |
|---|---|---|---|---|---|
| Country | Older people as percentage of total population | Living alone | Living with other elderly | Living only with children aged under 15 years | All Other elderly |
| Ghana, 1993 | 6.0 | 16.2 | 4.9 | 8.4 | 70.5 |
| Ghana, 1998 | 7.3 | 15.3 | 5.3 | 8.8 | 70.6 |
| Bulgaria, 1995 | 24.3 | 21.3 | 40.3 | 0.4 | 37.5 |
| Bulgaria, 1997 | 24.7 | 19.2 | 41.2 | 0.2 | 39.4 |
| Nicaragua, 1993 | 5.6 | 6.1 | 7.4 | 4.4 | 82.1 |
| Nicaragua, 1998 | 5.8 | 5.0 | 4.4 | 4.2 | 86.5 |
| Vietnam, 1993 | 8.5 | 3.7 | 10.5 | 1.1 | 84.7 |
| Vietnam, 1998 | 10.0 | 4.8 | 12.5 | 1.4 | 81.2 |

their assets, which in developing countries may mean renting out land, or entering a sharecropping arrangement, or selling off goods.

Poverty measurements based on per-capita expenditure understate poverty among older people living alone or with children, compared with poverty of other households, as comparisons of income poverty need to take account of the size and composition of the household (see White and Masset, 2003). To avoid this bias, expenditure data need to be adjusted to account for different consumption needs of household members and for economies of scale. The data on Bulgaria, Nicaragua and Vietnam use equivalence scales and economies of scale coefficients estimated from the data using Rothbart's methodology (Deaton, 1997). Average child costs were found to be 0.20 of an adult in Bulgaria, 0.50 in Nicaragua and 0.45 in Vietnam. Economies of scale coefficients are 0.15, 0.37 and 0.36, respectively. Data on Ghana use nutritional equivalence scales used by Coulombe and McKay (1995) and assume an economy of scale coefficient of 0.2.[6] In accordance with standard practice in the literature, no adjustment is made for differing consumption needs of older people. If their consumption needs are lower then poverty for this group will be over-estimated.

Tables 9 and 10 show poverty levels and changes over time for different groups of older people. Among older people living alone, with other older people or with children, poverty levels are higher or similar to those of the non-elderly. Poverty changes over time take place in the same direction for

TABLE 9. Percentage of older people living alone and living below the poverty line

| | Poverty rate among those living alone | | | | | |
|---|---|---|---|---|---|---|
| | Elderly | Non-elderly | *p* value (elderly versus non-elderly) | Elderly male | Elderly female | *p* value (male versus female) |
| Bulgaria | | | | | | |
| 1995 | 18.4 | 8.4 | 0.000 | 12.4 | 20.9 | 0.059 |
| 1997 | 62.8 | 44.9 | 0.000 | 57.3 | 64.7 | 0.233 |
| % change | 44.4 | 36.5 | 0.002 | 44.9 | 43.8 | 0.000 |
| Ghana | | | | | | |
| 1993 | 13.1 | 33.7 | 0.000 | 15.1 | 11.6 | 0.469 |
| 1998 | 12.9 | 24.7 | 0.000 | 15.6 | 12.8 | 0.357 |
| % change | −0.2 | −9.0 | 0.000 | 0.5 | 1.2 | 0.130 |
| Nicaragua | | | | | | |
| 1993 | 20.5 | 19.0 | 0.372 | 28.2 | 12.8 | 0.093 |
| 1998 | 9.7 | 11.4 | 0.322 | 17.7 | 6.5 | 0.170 |
| % change | −10.8 | −7.6 | 0.192 | −10.5 | −6.3 | 0.210 |
| Vietnam | | | | | | |
| 1993 | 69.3 | 33.0 | 0.000 | 41.7 | 74.6 | 0.006 |
| 1998 | 40.1 | 9.5 | 0.000 | 27.3 | 39.7 | 0.272 |
| % change | −29.2 | −23.5 | 0.086 | −14.4 | −34.9 | 0.000 |

*Source*: Calculated from survey data.

TABLE 10. Percentage of older people in elderly-headed households living below the poverty line

| | Elderly | Non-elderly | *p* value (elderly versus non-elderly) | EHH headed by male | EHH headed by female | *p* value (male versus female) |
|---|---|---|---|---|---|---|
| Bulgaria | | | | | | |
| 1995 | 15.4 | 7.8 | 0.303 | 13.0 | 21.3 | 0.004 |
| 1997 | 60.6 | 43.1 | 0.237 | 60.0 | 65.2 | 0.101 |
| % change | 45.2 | 35.3 | 0.344 | 47.0 | 43.9 | 0.000 |
| Ghana | | | | | | |
| 1993 | 34.2 | 33.4 | 0.432 | 34.2 | 33.4 | 0.495 |
| 1998 | 23.3 | 24.6 | 0.346 | 21.0 | 25.0 | 0.668 |
| % change | −10.9 | −8.8 | 0.341 | −13.2 | −8.4 | 0.996 |
| Nicaragua | | | | | | |
| 1993 | 17.5 | 19.0 | 0.383 | 22.0 | 14.6 | 0.258 |
| 1998 | 24.6 | 14.6 | 0.043 | 20.6 | 20.3 | 0.972 |
| % change | −7.1 | −4.4 | 0.180 | −1.4 | 5.7 | 0.002 |
| Vietnam | | | | | | |
| 1993 | 55.9 | 32.8 | 0.015 | 51.5 | 68.7 | 0.006 |
| 1998 | 23.7 | 9.3 | 0.015 | 19.7 | 26.7 | 0.011 |
| % change | −32.2 | −71.6 | 0.116 | −31.8 | −42.0 | 0.000 |

*Note*: EHH are defined as those containing only older people (aged 60 years and older) and children aged 15 years or younger.
*Source*: Calculated from survey data.

the elderly and the non-elderly in all countries, except Nicaragua, where poverty has increased for older people living with no adults but decreased for the non-elderly (Table 10). Particularly in Bulgaria and Vietnam, poverty changes are more pronounced for older people.

For the older people living alone, poverty levels are higher than for the non-elderly living alone, except in Ghana (see Table 9), where poverty seems to persist more for older people than for other groups, so that poverty levels have come a little closer together. Bulgaria is the only country where poverty has worsened over the period, and particularly for older people. However, both elderly and non-elderly have experienced very large declines in income and it is more likely that the non-elderly enjoy a share of the growing black market income not captured in the surveys.

In Bulgaria and Vietnam, female-headed EHH are significantly more likely to be poor than are men in a similar situation, although the gap is not significant in Bulgaria for the later period following the sharp increase in poverty among male-headed EHH.

The case of Bulgaria is explained by the erosion of the real value of pensions that fell by 65% between 1990 and 1996. In 1997 inflation reached nearly 1000%, dramatically reducing the value of all state benefits (White *et al.*, 2000a). In Eastern Europe as a whole, the real value of pensions fell by around 50% during the 1990s, taking many pensioners below the poverty line. Although the pension is pegged to a minimum living standard, delays

in inflation adjustment and payment arrears can drive actual pensions below this minimum. Moreover, revisions to eligibility criteria have caused previously eligible households to fall outside the safety net. Pensioners dependent solely on their pensions are thus, by definition, poor. This fact is also evident from the disability age profile pyramid for Bulgaria in Figure 2(a), illustrating that the probability of being poor, conditional upon being disabled, increases greatly with age, since disabled people are more likely to be solely dependent upon their pension.

Vietnam has enjoyed substantial growth-driven poverty reduction, reinforced by sustained state expenditure on service delivery. There is also a considerable system of state transfers, although this tends to be poorly targeted and benefits mainly former state-employees in urban areas. The vast majority of older people in Vietnam live with younger adults, and most of the remainder live with other older people. There are very few older people who live by themselves or with only children. This suggests a strong system of social support. Evidence of social support is also shown by the rapid decrease in poverty among older people living alone, especially females. The most puzzling finding is that older people living alone in Ghana are less poor than average. There may be a selection issue at work here: only the relatively well off can live alone, and those who are not well off either die or seek refuge in other households. This hypothesis appears plausible, but requires further analysis with panel data.

## Conclusion

It has been demonstrated that existing under-utilized data sources can be used to examine the welfare of groups of chronically poor people (see Table 11 for a summary of the results).

The analysis of the present data suggests two sets of conclusions: one that relates chronic poverty to the MDGs, and another that addresses survey designs and research agenda.

First, in this paper, some initial steps are taken towards comparing progress on MDG indicators. In particular, the three groups identified as being poor indeed tend to be worse off with respect to the chosen indicators. Older people are generally making less progress with respect to the MDGs. However, orphans who are benefiting from both the expansion of school enrolments and improved nutrition. Data were not available on people with disabilities to make comparisons over time. But the problem identified by our analysis of 'missing disabled' shows that interventions for children with disabilities need to be part of a strategy to reduce under-five mortality.

The analysis in this paper is purely descriptive but invites a substantial research agenda for examining the livelihood strategies of these groups to determine how they may better be included in development achievements. It may be observed that each of these groups is part of the dependent poor (similar conclusions were reached by White *et al.*, 2000a). In other words, their welfare is in large part dependent on the support they receive from others — be it through the informal channels of traditional social structures or from state systems. However, these systems weaken over time and cannot

Table 11. Summary of results

| | Orphans | Disabled | Elderly | Unsupported female-headed household |
|---|---|---|---|---|
| Indicator | Enrolment | Consumption | Consumption | Consumption |
| Andhra Pradesh | | Poorer | | |
| Bulgaria | Lower than average but increasing more rapidly | Poorer | Poorer, but consumption decreasing less rapidly | Poorer, experiencing greater increase |
| Ghana | Lower than average and falling more rapidly | Poorer | Not so poor, but poverty declining less rapidly | Not so poor, but gap narrowed |
| Nicaragua | Lower than average but increasing more rapidly | Less poor | Poorer and increasingly so for those living with children | No difference |
| Vietnam | Lower than average but increasing more rapidly | Poorer | Poorer and poverty decreasing less rapidly | No difference |
| Summary/ comment | Lower but gap narrowing where enrolments are rising | Generally poorer and evidence of excess mortality of disabled children in poor households | Poorer and gap widening in most cases | No evidence of disadvantage and relative position not worsening |

cope with large shocks. Research suggests that the provision of formal transfers, such as pension schemes, is feasible even in low-income countries, and can have welfare benefits beyond older people to other members of their families (Wilson, 2001). The analysis suggests that many of the MDGs will not be met without utilizing such redistributive mechanisms.

Second, the survey design and the research agenda warrant some attention. Agencies conducting large-scale household surveys such as DHS and LSMS could usefully design questionnaires to cover institutions such as orphanages, long-stay hospitals (e.g. for psychiatric care) and residential facilities for the disabled. These questionnaires would not only collect reliable data on currently missing groups, but give a more accurate picture for the country as a whole. Furthermore, only a few questions are needed to collect data on disability and orphans. It would be useful to standardize the questions on disability. Before doing so, some research might be undertaken on the reliability of self-reporting. About 10% of households have disabled household members, and orphans also constitute close to 10% of the child population in Africa (this figure is slightly lower in other countries). This indicates that it is not a case of minority population groups that can be ignored.

Further research needs to address the livelihood strategies of the identified groups. The extent to which they are indeed dependent on transfers, as determined by use of LSMS data, needs to be determined first, although these data will not allow the source of the transfers to be identified.

Also, analysis of panel data sets would be helpful in studying the trajectory of families as their members become older, or if they suffer disability. Work is needed to identify data sets suitable for this purpose. While much remains to be done, this paper has tried to demonstrate that useful poverty analysis is possible for these important groups of the poor with the hope that they will not continue to be ignored in future poverty analysis and policies.

## Notes

1 We are thus using the term *chronic poor* differently to how it is used in the poverty dynamics literature (i.e. people who remain below the poverty line for several consecutive time periods), although we suspect these groups do have greatly reduced chances of escaping poverty.
2 DHS data are available to all researchers from the Macro International website. Availability of LSMS data varies by country.
3 The proportion of children for whom both parents are dead is small in all cases, weakening tests of statistical significance.
4 This statement is not to say that there may be such 'difficult groups', notably street children, which will include some orphans.
5 Although anthropometric data are also available, the height measurements of children with disabilities are likely to be subject to a large margin of error.
6 Econometric estimation did not yield meaningful results with the Ghanaian data.

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