

Household composition and dynamics in KwaZulu Natal, South Africa: Mirroring social reality in longitudinal data collection

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Introduction

Households are an important unit of analysis for the study of demographic, social, health and economic processes. People typically live in domestic groups (households) whose members share characteristics including the resources they can access and the authority hierarchy that they acknowledge. Consequently, information about households is a ubiquitous part of data collection exercises ranging from medical case notes to national censuses. However, although household data are widely available, the definition of a household has exercised anthropologists, sociologists, demographers and economists for decades [Keilman, 1995 #69; Bender, 1967 #61; Saradamoni, 1992 #30].

This paper describes new methods for conceptualising and collecting data about households, household membership, residency, and intra- and inter-household relationships that have been developed for the Africa Centre Demographic Information System (ACDIS). ACDIS is a demographic surveillance system (DSS) in rural KwaZulu Natal, South Africa that started field operations in January 2000. The most distinctive feature of ACDIS is its approach to defining households and social relationships.

Three main scientific reasons exist for the modification of classical survey and census approaches by ACDIS: First, South Africa's political and economic history has resulted in highly mobile urban and rural populations, coupled with complex, fluid households. The social relevance of standard models of household formation and composition is therefore open to question. Against this social context, the rapidly progressing HIV/AIDS epidemic requires improved social data in order to understand the determinants and consequences of the epidemic for households and communities. Third, the collection and analysis of longitudinal data places greater demands on demographic surveillance systems to ensure temporal, spatial and conceptual consistency. Thus, whilst longitudinal data collection presents many challenges it allows exploration of the dynamics of households and their related social processes. Such data can be critically compared with the 'static notion of the household' [Spiegel, 1986 #4] necessarily used by one-off survey and censuses, to aid the interpretation of household data.

Defining households

Part of the difficulty of defining households in large demographic surveys is inherent in attempts to pre-define something that is essentially subjective, relating to a person's own sense of who they belong with. While this feeling of belonging is often rooted in the members' relationships through birth or marriage, kinship alone does not define a household. Fuzziness and fluidity are part of the nature of social relationships. Relationships that one may struggle to define unambiguously using objective criteria, such as that with a boyfriend or relative, can be recognised readily when seen in everyday life. In trying to consistently measure complex and subtle aspects of social organisation researchers seek to define and categorise social phenomena as discrete entities or events (e.g. households, marriage, household headship). An illustration of one contentious representation of social reality is the definition of households as co-residential units, a definition used in many surveys and censuses.

In its 1996 October Household Survey, Statistics South Africa defined households as consisting:

'...of a person or a group of persons who:

1. eat together and share resources; and
2. normally resides at least four nights a week at the specific visiting point;
3. For the purposes of this survey, a live-in domestic worker is considered to belong to a separate household.' [Budlender, 2000 #63]

The approach of the other large national surveys in South Africa (e.g. 1993 Project for Statistics on Living Standards and Development and the 1998 Demographic and Health Survey) has been similar. Findings from our previous research in the Hlabisa district [Hosegood, 2001 #70], as well as those of other researchers in South Africa, Lesotho and Botswana and the Transkei, suggest that a definition of household based on co-residence is both at variance with the social context of rural areas of Southern Africa. The residential household is an inadequate unit of analysis with which to explore many social and economic processes [O'Laughlin, 1998 #72; Murray, 1981 #53; Spiegel, 1986 #4; Townsend, 1997 #46].

The political and economic history of South Africa and its neighbouring countries has led to frequent physical separation of household members. The legacy of the Apartheid Group Areas Act and the labour migration system mean that a lot of the members of many rural households spend considerable periods of time residing elsewhere, typically in order to be closer to their place of work, to accompany other labour migrants, to obtain care and support, or to attend school [Berry, 1993 #10; Jones, 1993 #111; Izzard, 1985 #15; Leliveld, 1997 #38; Mazur, 1998 #25; Mayer, 1980 #44; Murray, 1976 #71; Murray, 1978 #55; Murray, 1980 #54]. Our earlier qualitative study of households in the Hlabisa district identified three important features of households in the area: first, non-residents are considered to be members of rural households; second, individuals may concurrently belong to more than one household; third, some individuals live with households that they do not belong to fully but, equally, they do not function as separate households either [Hosegood, 2001 #67].

If surveys use only co-residence to define households, the resulting lack of information on non-resident members of a household can place many important limitations on demographic and health research:

- Non-resident members have relationships with other household members. They may be the head of the household, a spouse, a parent or a child. Failure to enumerate all members of the household means that an incomplete or unrepresentative profile of household composition is recorded. For example, in households in which a male migrant is considered by the household to be the head, fieldworkers collecting survey data will arbitrarily assign headship to another resident member (often his spouse).
- The health and welfare of resident and non-resident household members can be closely interrelated. Issues range from remittances from labour migrants to their rural households [Leliveld, 1997 #38; Spiegel, 1980 #33] to the well-being of children of migrant mothers cared for by another household member [Izzard, 1985 #15]. The movement of people between households has been shown to an important means by which households have been shown to cope in resource poor situations [Murray, 1981 #53; Murray, 1985 #52; Spiegel, 1987 #201]. The enumeration only of resident members limits the exploration of intra-household relationships and transfers.

- Understanding patterns of HIV/AIDS transmission within rural areas requires knowledge about patterns of circulation and about sexual contacts between residents and their non-resident partners. Circular migration has been identified as an important determinant of the rapidly progressing HIV epidemic in rural areas of Africa [Lurie, 1997 #8]. Many of the ACDIS research projects relate to HIV/AIDS. Anonymous antenatal screening in one Hlabisa district clinic in 1998 found that 41% of all pregnant women were HIV seropositive [Karim, 1999 #19].
- Non-resident household members are potential users of local services. However, they may have very different usage patterns from residents. For example, many female labour migrants return late in pregnancy and deliver at a rural facility. In addition, disabled or ill migrants will often return to be cared for by other household members and will also use rural health services.

With specific reference to the design of DSS, two additional assumptions may underlie the decision to enumerate only people resident in an area (equivalent to resident household members). The first is that non-residents are not exposed to the conditions within the Demographic Surveillance Area (DSA), and the second that they are not at risk of having a vital event in the DSA. However, both assumptions are contentious in areas where return visits are frequent and/or prolonged, and the in-and out-migration rate is high. In the Hlabisa household study, 50% of all non-resident adults returned at least one night per month, and most visited for month-long annual holidays. In addition many non-residents visited or in-migrated due to pregnancy, childbirth, or illness.

Overview of ACDIS and the surveillance area

The Africa Centre Demographic Information System (ACDIS) covers all individuals who are members of households based at homesteads or facilities within a defined geographical area referred to as the DSA. The information is updated every 4 months through fieldworker visits. Events that are recorded include: individual events (death, migration, pregnancies, deliveries, marriage), household events (household formation, migration, change of household head), and events affecting homesteads (start of a new building, change of a building's main purpose or its owner). Additional data are collected in standard modules (e.g.

annual household socio-economic questionnaire) or special modules (a child grant questionnaire). The data collection procedures are described in detail elsewhere. (ACDIS, 2000) All information is recorded in the ACDIS relational database. This also stores data on registered subjects that have been collected by other studies of the same population.

The study area

The DSA covers part of two rural districts of KwaZulu Natal, 250km north of Durban. The study area includes tribal authority land and a former black township. The population is predominantly Zulu. Although it is a largely rural area, few people are involved in subsistence agriculture. The primary sources of income for most households are waged labour and pensions [Marcus, 1998 #21]. Most employment opportunities are located outside the area in neighbouring towns and Durban and in commercial farms, forestry and nature conservation. The 435 km² DSA is heterogeneous with respect to topography, density of settlement, and infrastructure. Unlike most other rural areas of southern Africa, Zulu homesteads are scattered across tribal land with no identifiable villages. In much of the tribal land infrastructure is poor, with less than 14% of households having access to private or public piped water and half having no toilet or pit latrine[Curtis, 2001 #64]. In contrast, the town is serviced with water, sanitation, electricity, refuse collection and roads.

Households and their members - ACDIS concepts

Eligibility criteria in ACDIS

In ACDIS, three primary subjects are observed longitudinally: physical structures (bounded structures), households and individuals. The conceptual framework for ACDIS is based upon the definitions, eligibility criteria, and relationships between these subjects. The concepts are illustrated schematically in Figure 1. Membership and residency, two features of individuals and households, are key concepts used to organize and maintain the temporal integrity of the longitudinal data.

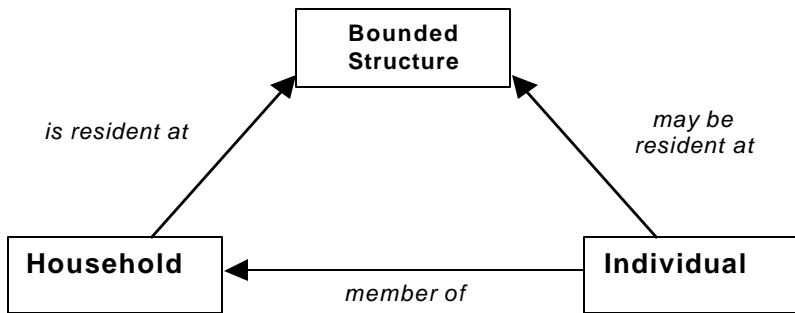


Figure 1. Membership and residency criteria relating the three main ACDIS subjects

Bounded structures

DSSs observe demographic patterns in a population within a physically defined area, called the DSA in ACDIS. Because people and households are mobile, following them over time requires that they have been linked to physical places that can be revisited. Given the complex social dynamics and mobility of the population in areas such as rural KwaZulu Natal, it is important to distinguish between a physical place (homestead/facility) and the social group (household) that is resident at that place. This distinction is also recognised by local communities with a household being called *umndeni* in Zulu and a homestead being called *umuzi*.

ACDIS defines two types of physical place: homesteads whose intended main purpose is to provide accommodation, and facilities (schools, clinics, shops, churches) that provide services. The term 'bounded structure' is used to refer to both. The concept '*main purpose*' is used because schools, clinics, churches and shops can have accommodation for staff within their grounds. The caveat '*intended*' is required because buildings under construction or in disrepair can be registered. Such buildings are regularly visited and any in-migrating households are identified.

Each eligible bounded structure is registered and mapped. To distinguish one bounded structure from another; the boundary of a structure encompasses the area around the buildings belonging to a single owner. Where more than one household shares a homestead (or facility), each household is linked to the same bounded structure record in the database.

Additional records are made of the buildings' *'state'* (e.g. useable or under construction) and its *'functionality'* (e.g. whether the clinic or school is functioning).

<i>Eligibility criteria for Bounded Structures:</i>
1. Must have the intended main purpose to provide either residential accommodation (homestead) or provide a number of selected services e.g. health, education, petrol.
2. The land plot must be under a single owner.

Households

All bounded structures are visited and data are collected about previously registered households, as well as new households that have either in-migrated or newly formed. A household is eligible for registration if it is resident at a bounded structure (where it must have at least one resident member). Changes in households' composition (members), place of residence (migration), and headship are updated at each round. Respondents are asked to list all the people that they consider to be members of their household. This includes any members who have died or otherwise ceased to be members in the four months prior to the visit. Each household is asked to report the person they consider to be the head of the household. Headship is an important feature of Zulu society, particularly in the tribal areas, and members rarely disagree.

<i>Eligibility criteria for households:</i>
1. The household must have at least one resident member at a bounded structure within the DSA.
2. Must have household head who is acknowledged by the other members and who is also a member of the household.

Individuals and household members

In ACDIS, individuals are eligible for registration provided that they are considered to be a member of a household within the DSA. Residence within the DSA is not a criterion,

although information about residency is recorded. To prevent inflation of the DSS population by those who have not returned for years, eligible members must have spent at least one night in residence in the 12 months prior to registration². Routine demographic and health data are collected for both resident and non-resident members. The 'one night' rule excludes those with little or no exposure to the household group and consequently those for whom proxy information may be of poor quality.

Household membership may change several times over a person's lifetime. Babies are usually considered to be members of their mother's household though they may also have other social connections, for example with their father's household in the case of unmarried parents. In adult life, individuals may join new households when they change their social allegiances and residence, for example, upon marriage. Household membership may also end without a change in residency, as in the case of a non-resident member who does not maintain contact with the household and is eventually excluded from the social group. By keeping membership and residency distinct, ACDIS can record a change in the status of one attribute independent of the other. Thus, one membership episode may overlap with one, several or no residency episodes. For example, a member can end their residency by out-migrating without also ending their membership of the household. In most other DSS, out-migration would end follow-up and therefore, if a member is non-resident for a time, no information would be available about this period.

Residency episodes for individuals and households are handled in a similar way within ACDIS. A resident individual or household must be resident at a bounded structure within the DSA. Household members self-report their place of residence. Typically this is the place where they keep their daily belongings and spend most nights. An individual can only be recorded as resident at one bounded structure at any point in time. At each fieldworker visit any change in residency (i.e. in- or out-migration) is recorded, together with information about the origin or destination and the date of the move. Self-defined intention to change residency is used to define the event. This approach differs from that of most other DSS sites, where a set period of presence or absence is required before a migration event is

² Any member who is reported to be the head of the household is exempt from the 'one night' criterion as discussed further in the results.

recorded. In order to generate consistent population estimates, any reported intention to change residency that is not realised within four months is reversed in the next round.

<i>Eligibility criteria for individuals:</i>
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1. Must be considered to be a member of a household that is resident at a registered bounded structure within the DSA.
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2. Has spent at least one night with the household in the previous 12 months.

Multiple household membership

In ACDIS any individual who is a member of several households within the DSA simultaneously is recorded as a member of all of them. The rationale for this design is that this social phenomenon has been reported by ethnographic studies in both the Hlabisa district [Hosegood, 2001 #67] and other parts of South Africa [Van der Waal, 1996 #3; Ross, 1996 #6; Spiegel, 1986 #4; Murray, 1980 #54; Murray, 1981 #53]. Multiple memberships often arise in 'stretched household' arrangements where members reside in different places [Spiegel, 1996 #93]. Such individuals include rural-to-urban labour migrants, who continue to be members of rural households whilst forming or joining other households in an urban area. However, people can also have multiple household memberships within a relatively small area such as the DSA.

Two types of multiple members are commonly observed in ACDIS. The first is polygynously married men whose wives maintain separate households either in the same homestead or in different locations. In the DSS the husband is registered once as an individual but recorded as belonging to two or more households. A second group is children with parents who are unmarried and not cohabiting. Such children may be considered members of both their maternal and paternal households and often move from one homestead to the other in response to changing childcare or financial arrangements. ACDIS reflects this by linking the child to both households and recording their residency patterns at each homestead over time.

The ACDIS design differs from other community surveys and DSSs in which individuals can only be assigned to one household at any point in time [Binka, 1999 #11; Garenne, 1997 #18]. Linking polygynous men to only one household would substantially alter the reported composition of their other households because these men could not be listed as either a member or as the household's head. Allowing the representation of multiple memberships in demographic data can improve our understanding of the complexity of the social environment to which such individuals are exposed. A child with multiple memberships may be buffered from adversity in one household by the resources of the other. Alternatively, belonging to more than one household may be a marker of instability and a risk factor for poor health and education outcomes.

Different types of household members

A further refinement to the definition of households used by ACDIS is to distinguish between two types of household members. *Full members* are those considered by the household and themselves to be a member. They may be resident or non-resident with the household. *Affiliated members* are individuals who, although are not considered to be a member of the household, reside with the household and are involved intimately with it. Affiliated membership is a concept developed in response to the difficulty of applying more standard survey and DSS definitions to some situations observed in a formative household study in the Hlabisa district [Hosegood, 2001 #67]. People were observed who, although resident with a household for extensive periods of time, were not considered to be a member by others in the household. Often the social distance appeared to be due to either their employer/employee relationship or lack of close kinship. One such group is herd boys. These children graze the household's livestock and often receive no income but do receive shelter, food and perhaps other support. For some herd-boys this arrangement is long-term and may continue into adulthood.

Two approaches used in other surveys and censuses were considered as alternatives to the one adopted by ACDIS. The first would be to classify such individuals as a separate household. This would have presented a misleading impression of independence and autonomy from the household with which they live. It would also result in an exaggeration of the numbers of single-person, child-only and child-headed households. A second method

would be to classify these individuals as members of the household with which they are living. Clearly though, this would be at odds with the perception of both the individual and the household. The resulting household data would not reflect the inter-relationship but social distinction between them.

In ACDIS therefore, the fieldworker discusses such situations with both the individual and the household before classifying the person as an affiliated member or a separate household. The primary consideration is their independence from the main household. The eligibility criteria for affiliated members require that they are resident with the household. If the person migrates, ACDIS ends their affiliated membership since their social connections to the household may be weaker than those between full members and the quality of proxy reporting is likely to be poor once they are not in daily contact with full household members.

Results

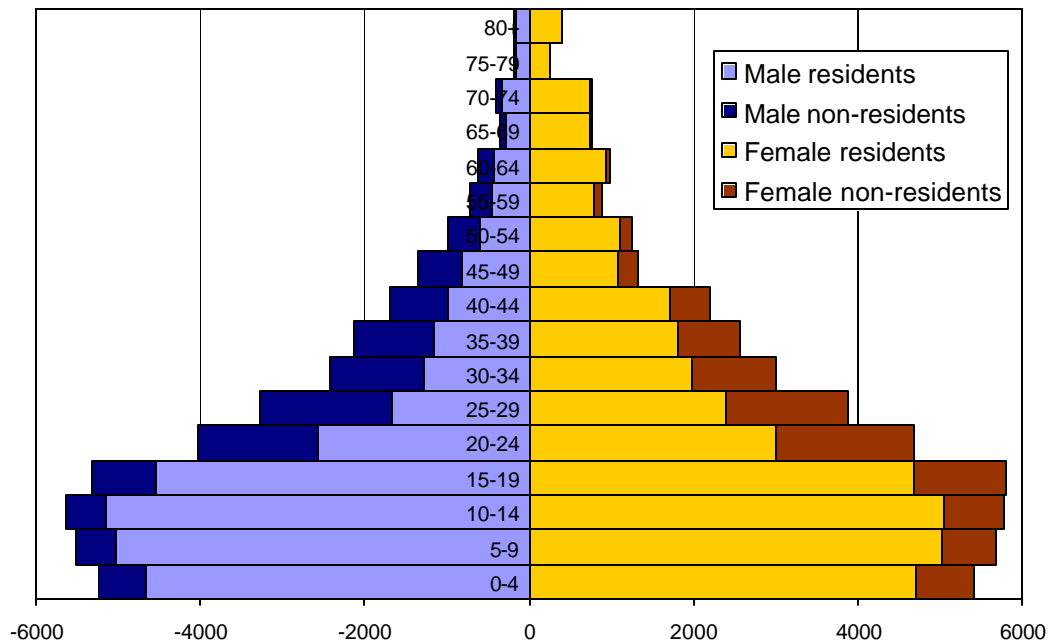
This section presents the ACDIS population and household profile of 11,314 households and their members registered on the 1st Jan 2001.

Population profile

On the 1st Jan 2001 86,469 individuals were registered in ACDIS. The population profile for men and women by residency status is shown in Figure 2. The inner bars are the percentage of each age group that are resident, and the outer bars those that are non-resident. Some 77% (66,607) of all individuals were resident in the DSA and about 23% (19,862) were non-resident.

Figure 2. Age and sex profile of the ACDIS population by residency, 1st Jan 2001³

³ Figure 1 presents data on individuals rather than household members. ACDIS registers each individual only once even though they may have multiple household memberships. Therefore, a non-resident individual is a person who is not resident at any household within the DSA.



The household population profile demonstrates the advantages of the ACDIS model in representing a rural South African population:

1. Household respondents clearly do not define membership on the basis of residency status: 23% of all individuals are non-resident. The inclusion of non-resident individuals generates a population structure that is distributed more normally by age and sex than that which would have been obtained through a *de facto* enumeration.
2. Non-residency is not only an adult phenomenon. A large number of children are also non-resident, namely 12% of boys age less than 18 years and 13% of girls. Sex differentials in residency status are most evident in adulthood: 41% of adult men are non-resident, compared with 26% of women.

Household membership types

On the 1st Jan 2001 there were 89,132 members of registered households. ACDIS distinguishes two types of household members: full and affiliated. 1,147 affiliated members were identified, around 1.3% of all household members. Affiliated members, while few in number, can have an important influence on household data. If ACDIS had adopted the more typical approach of registering such people as separate households, the number of

registered households would have increased by 1,147, raising the proportion of single-person households from 7% to 17%.

The largest proportions of male and female affiliated members are aged 10-34 years. The earlier qualitative research suggests that many of them are herd boys/men, domestic/farm workers or boarding children [Hosegood, 1998 #20]. The relationship to the household head of affiliated members divides fairly equally between relatives (27%), domestic/agricultural workers (28%), and other non-relatives (28%). Sex differentials in the frequency of affiliated members is most pronounced in young adult ages with (2.2%) of women aged 15-29 being affiliated members compared with (1.6%) for men. A large numbers of young women work as domestic workers but it may also reflect problems faced by working women who live alone in rented accommodation.

Multiple membership of households

2,553 individuals (3%) were members of more than one household within the DSA on 1st Jan 2001. Most (97%) are members of two households. In total they account for 5,216 household membership episodes. As with affiliated members, multiple members are a small but very important group of people for maintaining data quality as well as understanding social processes. Given the existence of multiple household members and high residential mobility, double counting is clearly a possible source of errors in ACDIS. Building the identification of multiple memberships into the data collection and database provides a method for identifying 'double members'. Linking multiple memberships in the database also helps to track migration because people will often move between households with which they are socially connected. When a non-resident multiple member in-migrates, field and database staff will not register them as a 'new' individual, maintaining continuity of longitudinal records and data integrity. Even with the considerable effort ACDIS expends in tracking multiple members, however, many are missed and are identified only when the person out-migrates or dies.

Figure 3 presents the age and sex distribution of the individuals who are multiple household members. Multiple membership is most common in older men and younger women. In older men this reflects the fact that 56% of men aged 60 years and older are polygously married. For young women, factors that may lead to membership of several households

include: marriage, labour migration, financial insecurity, personal security, housing, and child care assistance. Affiliated members are also more likely to have concurrent memberships of other households within the DSA than full members: 14% of affiliated members are also members of have at least one other household within the DSA.

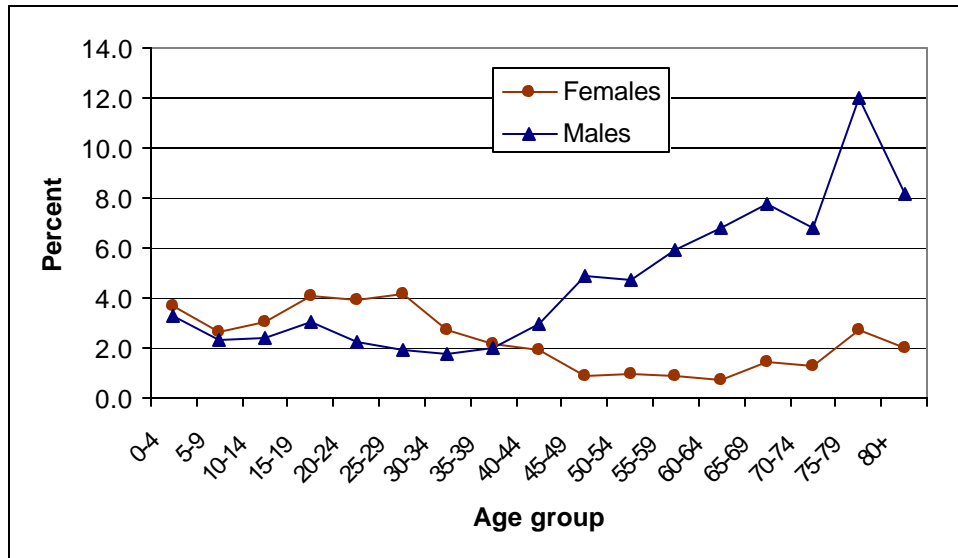


Figure 3. Proportion of individuals who are multiple household members by age group and sex

The patterns of affiliated and multiple household membership demonstrate the challenge for conceptualising households and social arrangements in rural South Africa.

Conceptualisations of household and family need to be able to record situations as diverse as the separate households of polygynous men and their families and the highly fluid arrangements of distantly related people living together in tenant rooms in order to be close to work or school.

Household profile

Selected characteristics of the households resident within the DSA on 1st Jan 2001 (n=11,314) are presented in Table 1. The average household size is 7.9 members. Rural KwaZulu Natal households are larger than those in other sub-Saharan countries (average household size 5.3) [Bongaarts, 2001 #62].

Table 1. Characteristics of ACDIS households (1st Jan 2001)

Household characteristics	Summary statistics
Household size	7.9 (4.7) 1,43
No. (%) of single person households	743 (7%)
Male headed households	8216 (73%)
% of households heads who are resident	72%
Mean age of head	49.0 (14.6) 15,100

These household level data are compared in the next section with the 1996 national census results for the same district.

Comparison of the ACDIS and 1996 national census household data

The 1996 national census data enumerated all *de facto* resident members of households and recorded which of the listed members was the head of household. Census data for the township and the Mpukonyoni tribal area have been prepared by administrative area [Curtis, 2001 #64]. The census data selected matches well with ACDIS since the DSA includes the township and approximately x% of the population of Mpukonyoni tribal area.

Substantially different household profiles are obtained by the ACDIS and national census even for the same local area. The inclusion of non-resident household members by ACDIS increases the average household size to 7.9 compared with 7.3 in the 1996 census. Another household attribute that changes depending on the methodology used is that of household headship. The census reported that women head 55% of all households; in contrast, ACDIS reports that only half that number (27%) of the households are female-headed.

This two-fold difference in the results obtained by the two methods illustrates how the use of a co-residential definition of households by the census distorts the community's own perceptions of social phenomena such as authority and decision-making. Although the respondent is asked to identify the household head, if the 'real' head is not resident the census enumerator has to disregard the answer and allocate headship to another member of the household. To explore which person the enumerators might list as head of household when the 'real' head is not resident, we use ACDIS data to estimate the proportion of self-reported male household heads that are non-resident. Of the 8,216 male heads, 35% are non-resident. An obvious 'replacement' head for these households is a resident spouse: 1780 of the non-resident male heads have at least one resident spouse or partner. If all non-resident male heads had been replaced by their resident partners then the proportion of female-headed households would increase from 27% to 43% ($3,098 + 1,780 = 4,878$). This elevated proportion is more comparable with the Census estimate of 55%.

These differences in patterns of headship identified by the different methods have importance for research studies and programmes that seek to use female-headed households as a proxy for vulnerability. Table 2 presents ACDIS data on selected characteristics for male- and female-headed households. Substantial differences exist in a wide range of demographic and social indicators including household size, residency status of the head, and co-occupancy of homesteads with other households. These findings support those of other studies showing that health and economic differentials are associated with household heads' characteristics [Posel, 2001 #73; Preston-Whyte, 1988 #74]. The greater 'vulnerability' of female-headed households might be masked in Census and survey data because they get included with households that have been arbitrarily assigned a female head. Another alternative method proposed for areas with high residential mobility is to distinguish between *de jure* heads and *de facto* household heads, including women whose husbands are migrants [Budlender, 2000 #63; O'Laughlin, 1998 #72].

The ways in which definitions and fieldwork procedures shape the presentation of social processes extends far further than headship profiles. By excluding non-resident household members, the census also limits our view on the relationships within the household. This is

illustrated in Figure 4 by four examples of household arrangements in which the Census data would classify a child as living in a single-parent household. However, from the social, economic and demographic perspectives these four situations may have very different implications for the health and development of the child.

This comparison of ACDIS and census data also highlights the difficulties that emerge when researchers try to set criteria or rules for the definition of social entities such as household headship. ACDIS itself created a tension in the first round by trying to use self-reported headship while at the same time having an eligibility rule whereby household members must have spent at least one night in the 12 months with the household. Fieldworkers reported problems in recording headship in households where heads had not spent nights with the household but had exercised their role as head through visits, communication and contact with members elsewhere. In several cases these heads were polygynously married men who maintained several separate households. Given that the research interest was to record households' own perception of social authority, ACDIS removed the 'one night' eligibility rule for members who are heads of household.

Table 2. Characteristics of male and female-headed households

Household characteristic	Head of household		
	All households	Male headed	Female headed
Household size	7.9 (4.7) 1,43	8.1 (4.8) 1,43	7.3 (4.5) 1,42
Average age of head	49.2 (14.6) 15, 100	47.8 (14.0) 15, 100	52.8 (15.5) 15,98
Head is resident	71.5%	64.7%	89.5%
Average number of children <18 years	3.7 (2.8) 0,27	3.8 (2.9) 0,27	3.4 (2.7) 0,19
Average number of children whose mothers are members of the same household	2.7 (2.4) 0,22	2.8 (2.4) 0,22	2.4 (2.3) 0,14
Average number of children whose fathers are members of the same household	1.4 (2.0) 0,24	1.8 (2.1) 0,24	0.4 (1.0) 0,11
Average number of children whose mother is a non-resident member of the same household	2.1 (2.2) 0,20	2.2 (2.2) 0,20	1.7 (2.0) 0,13
Average number of children whose father is a non-resident member of the	0.7 (1.5) 0,13	1.0 (0.6) 0,10	0.7 (1.5) 0,13

same household			
Average number of households living at the same homestead	1.8 (4.7) 1,61	1.7 (4.2) 1,61	2.1 (5.6) 1,61

* Married heads that are separated are not included in this estimate.

To summarise this section, in the introduction we discussed the limitations of defining households as co-resident units. Although for certain types of surveys and censuses such definitions a resident-only population is unavoidable, this comparison demonstrates that there are implications for the data about other social entities such as household headship, that are consequent on the way in which households are defined. If household headship defaults to the oldest, resident member in the household, then it can be coded reliably during analysis of the data. If, on the other hand, researchers seek to record social perceptions, then care needs to be taken in understanding the way in which definitions and interview approaches shape the resulting findings.

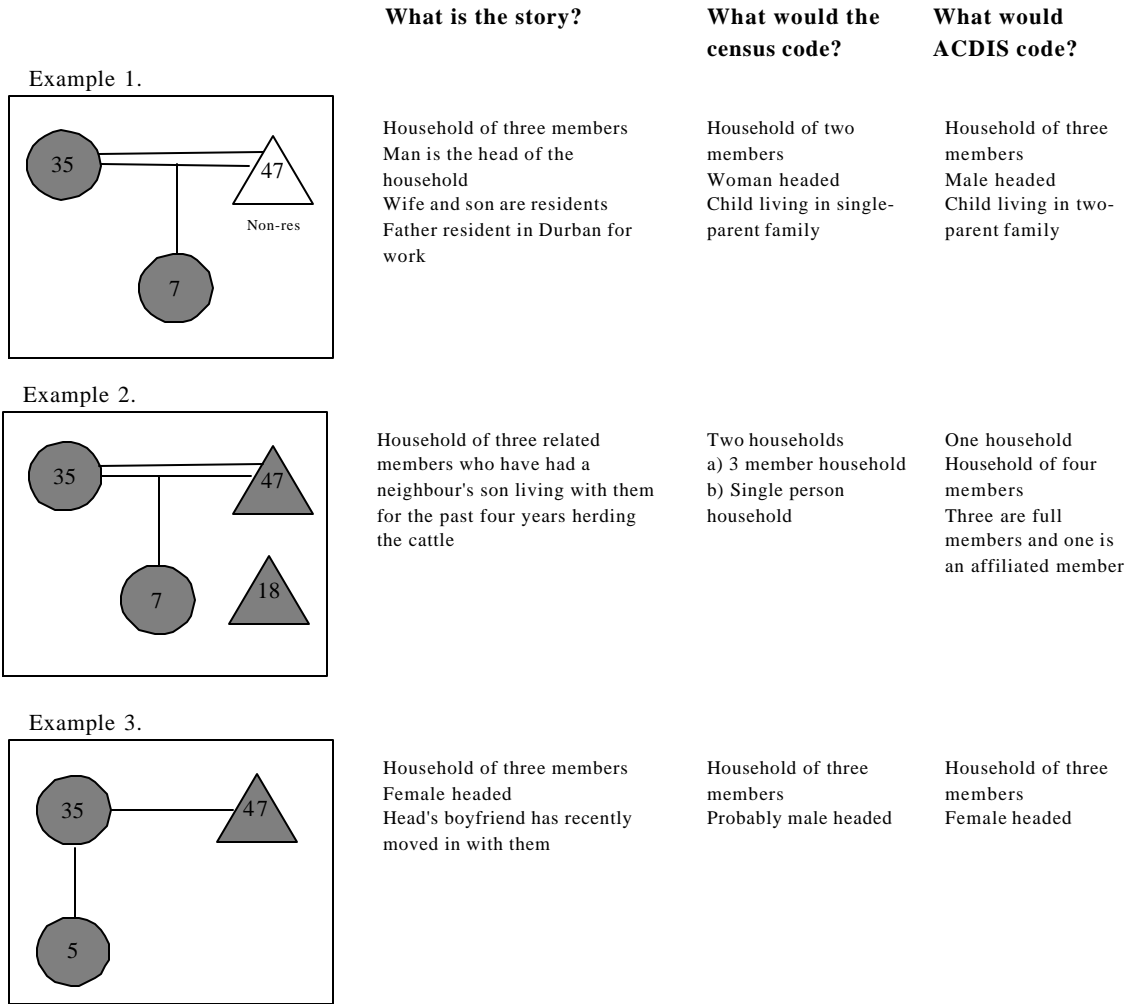


Figure 4. Examples illustrating differences in household classification in census and ACDIS approaches

Discussion

This paper describes new approaches to conceptualising and collecting longitudinal data on households in rural KwaZulu Natal. The initial results presented here demonstrate that it is possible to operationalize concepts such as self-definition of households, membership of multiple households and affiliated household members. Additionally, the availability of ACDIS and census household data from the same local area permits an examination of the consequences of differences in definitions of households and their members for population and social data.

Data on household dynamics, population mobility, inter- and intra-household relationships and social networks enhance knowledge of rural populations. One of the most important features of the ACDIS household data is that they are based on self-reported membership and headship. Most demographic and health surveys have continued to use a co-resident definition of the household even though sociologists and anthropologists working in Southern Africa have long challenged its appropriateness. Spiegel *et al.* (1996) found that their informants in the Cape Town area of South Africa did not use a definition of 'eating from the same pot' when listing the members of their household. Ethnographic research in Lesotho and Botswana, based on self-reported household composition, has also found that migrants who were not co-resident with the majority of other members are important members of the household [Townsend, 1997 #46; Murray, 1981 #53; Spiegel, 1986 #4; Spiegel, 1980 #33]. Formative research with households in the Hlabisa district about the nature of the household boundary and inclusion/exclusion criteria used for household membership confirms that co-residency is not a discriminator between membership of the household and the wider kinship network [Hosegood, 2001 #67]. Instead, respondents report aspects of kinship, shared responsibilities and authority, and historical relationships as important inclusion criteria.

Once one accepts that households can contain non-resident members this logically implies that individuals can belong to more than one household. Moreover, once ACDIS had opted for a more *emic* concept of social structure and process, it was a natural step to also collect data on affiliated members. The ability to identify affiliated members as distinct from both

full members and independent households can improve our understanding of livelihoods. For example, living alone, living with other non-relatives, or living with close kin may be very different risk factors for the well being of orphaned children.

Many of the events, activities and relationships studied by demography, for example birth, death, breastfeeding and parenthood, have a biological as well as a social aspect. This provides both a rationale and a basis for imposing universal definitions of the object of study on the diverse understandings of different cultures. Other relationships of interest to demography, such as marriage and households, exist solely on the social plane. Like other institutionalised relationships, households exist in part in the daily activities that constitute their existence. In addition, they are constituted from the shared memories and attitudes to one another of household members and in their beliefs and values concerning the nature of households in general. The social anthropologist, Edmund Leach, once described marriage as 'several distinguishable sub-types of institution ... concerned with the allocation of a number of distinguishable classes of rights' [Leach, 1955 #70]. His point was that, although marriage may be universal, no single sufficient (or indeed necessary) right or duty exists that defines all forms of marriage in every society. Much the same is true of households and this is particularly apparent in southern Africa. Household members do not have to be kin, to sleep in the same dwelling, to eat together, to share their incomes, or provide each other with personal care. They are likely, however, to have several of these characteristics or to have possessed them in the past.

The opportunity to compare the *de facto* census population data with the ACDIS data has allowed us to consider the characteristics of individuals who are not enumerated by the census and how their omission affects the profile of rural households in the district. Potentially important findings include the extent to which the census over-estimates the rate of female headship and under-estimates of the size of households. The census is the only large data set available in many African countries but the implications of limitations and biases in census concepts of the household are seldom discussed in reports of household-level analyses.

If one makes allowance for definitional differences, the ACDIS household data from rural KwaZulu Natal appear comparable with qualitative data from other rural populations in South Africa [Mazur, 1998 #25; Ross, 1996 #6; Spiegel, 1986 #4; Van der Waal, 1996 #3]. These other studies also report high levels of population mobility, stretched households, and multiple membership in a variety of Southern African communities. Consequently, the findings presented here are of general interest. Information about non-resident household members can contribute to understanding the role of migrants in determining the demographic, health and economic outcomes in rural populations. This alone warrants the collection of data on non-residents. Moreover, HIV/AIDS is a crucial public health priority in many African communities and many existing survey and census datasets fail to provide the kind of data needed to examine issues such as: the role of migration in the transmission of HIV, the impact of HIV/AIDS on labour migrants and the livelihoods of their rural households, and the additional burden of rural health services imposed by returning non-residents – a group that is not budgeted for as part of the service population.

The conceptual framework used in ACDIS has its limitations. Self-reporting of the household boundary is usually consistent over time at the household level but is not necessarily consistent between households. While this reflects the nature of social organization, it means that households may report different information about, for example, a resident domestic worker. One may list her as a member, another as an affiliated member, and a third may consider her as a separate household. The domestic worker herself may have a conflicting perception of her social situation. To some researchers, this level of ambiguity in the classification of household membership and the boundaries of households may be problematic. However, the data collected routinely by ACDIS is sufficiently detailed to enable the analyst to construct indicators of residency, *de facto* population, co-resident household composition etc. that can be compared with those from other surveys or the census.

Trying to capture the whirl of people and households initially appears beyond the capability of a DSS. However, precisely because the population is highly mobile, the potential follow-up and data management problems would be aggravated by using a standard DSS design developed for use in a more residentially stable and less rapidly changing population [Binka,

1999 #11; Garenne, 1997 #18; ICDDR, 1994 #9]. The temptation in any field research is to try to collect ever finer detail about complex social dynamics. A point arises, however, when the validity of the data obtained becomes too limited for it to be of much value for research. Although it involves keeping detailed track of over 11,000 households, the initial results suggest that ACDIS has not reached this point. Moreover, by providing a view of the three main subjects that are followed that reflects the population's understanding of its own organisation, it is possible to use the dataset as a sampling frame from which to draw households or individuals for more in-depth studies. However, it remains to be seen whether maintaining the system continues to be feasible in the long-term. Since the number of events, episodes and relationships will increase over time, ensuring the quality and integrity of the data is a considerable challenge.

We are not arguing that ACDIS is a system that should be used widely to collect household level data. DSSs are conducted primarily to collect data prospectively on vital events (births, deaths, migration and marriages). They are expensive and require considerable inputs of professional expertise, together with a large field and data centre staff. Implementation of the concepts used in ACDIS involved the development of a customised relational database to record the linkages between subjects, events and episodes. In addition, a special tracking team with both database and field skills had to be established and trained in order to collect data successfully on intentions to migrate and multiple household memberships. However, it is possible to adapt many of the ideas that have been discussed in this paper for use in other household surveys or censuses in this region. The methods that these use at present have limitations that could be overcome in at least part by using concepts more appropriate to the southern African context.

To conclude, development of an improved understanding of demographic, economic and health issues in rural South Africa requires data collection methods that capture some of the complexities of the households in which South Africans live. These include fluid household composition, high levels of individual and household mobility, non-resident household members, and multiple household memberships. This paper has sought to show both that this is possible and that the data it generates opens up a wide range of new research questions for investigation.

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References