



4

Mobility, Transport and Older People's Well-Being in Sub-Saharan Africa: Review and Prospect

Gina Porter, Amleset Tewodros and Mark Gorman

Introduction

Mobility, or lack of it, is likely to be implicated in many facets of older people's lives. Research on this theme has been gathering pace rapidly over the last few years in response to demographic change associated with the ageing of populations (Schwanen and Paez 2010; Li et al. 2012). While a majority of work to date is focused on Western contexts,

G. Porter (✉)

Department of Anthropology, Durham University, Durham, UK
e-mail: r.e.porter@durham.ac.uk

A. Tewodros

HelpAge International Africa Region, Nairobi, Kenya
e-mail: amleset.tewodros@helpage.org

M. Gorman

HelpAge International, London, UK
e-mail: mgorman@helpage.org

© The Author(s) 2018

A. Curl and C. Musselwhite (eds.), *Geographies of Transport and Ageing*,
https://doi.org/10.1007/978-3-319-76360-6_4

the pace of population ageing is faster in developing than in developed countries and attention is thus now growing across the globe (Frye 2013), with recent work, for instance, in Taiwan (Liu and Tung 2014), China (Feng et al. 2013) and the Philippines (Pettersen and Schmocker 2010), mostly with reference to urban contexts. In sub-Saharan Africa, where mobilities research focused on vulnerable user groups to date has concentrated principally on women's transport constraints, together with some work on children (mostly specifically on road safety), older people's mobility and transport needs are just beginning to attract attention. As in the Global North, older people now form a substantial proportion of the population: in many African contexts, however, their role in society has been made especially significant because of HIV and AIDS (Velkoff and Kowal 2006). Grandparents have been left supporting and caring for grandchildren, in the context of a significantly reduced or incapacitated middle generation resulting from parental deaths and ill health. The transport context also tends to be very different from that in richer countries, with very low private vehicle ownership, inadequate public transport systems, poor infrastructure and consequently much greater recourse, of necessity, to pedestrian travel. The implications for older people's well-being are considerable.

The first section of this chapter reviews the very limited research on older people's mobility and transport which has been conducted to date, with a particular focus on Anglophone countries in sub-Saharan Africa (notably Nigeria and South Africa). This is followed by reflections on recent mixed-methods research conducted through an NGO–academic collaboration with older people in rural Tanzania. Three themes given particular emphasis are, firstly, the particular significance of relationality in mobilities research with older people—other family and community members may substantially contribute to the shaping of older people's mobile lives; secondly, the importance of exploring potential new connectivities associated with increasing mobile phone and motorcycle-taxi usage among older people; and thirdly, the value of qualitative research, especially a co-investigation approach, to research with older community members. The final portion of the chapter is concerned with identification of significant research gaps where mobilities/transport-focused research with older people in sub-Saharan Africa is urgently needed.

Literature Review: Older People's Mobility and Transport in Africa

Studies of transport disadvantage and social exclusion in Africa are still relatively rare (Porter 2002; Lucas 2011); studies specifically addressing older people's mobility constraints and transport needs are particularly sparse. In terms of the spatial distribution of this research, urban-focused research to date appears to be limited to Nigeria (Odufuwa 2006; Ipingbemi 2010; Olawole and Aloba 2014) and rural research to a series of linked studies in Tanzania (Porter 2016; Porter et al. 2013a, b, 2014), discussed in the third main section of the paper. No studies specifically focused on older people's mobility and transport issues in urban areas have been identified for either eastern or southern Africa, except with respect to wider consideration of vulnerable populations (as, for example, Maart et al. 2007 on disabled people) and one countrywide transport review with a strong focus on older people. This is Venter's (2011) analysis of transport expenditure and affordability in South Africa drawing on data from the 2003 National Household Travel Survey.

Drawing on this literature, the following sub-sections review four key issues that affect older people's travel and transport: health and disability; transport availability and affordability; fear of harassment and crime; relationality, including the impact of caring responsibilities. In each component, we review the few studies specifically addressing older people's mobility constraints and transport needs and, additionally, consider some material beyond the transport/social exclusion domain that is relevant to that discussion.

Health and Disability Impacts on Mobility

Older people's mobility is often increasingly constrained by health/disability factors, especially as they move into their 70s and 80s. However, it would seem that in low- and middle-income countries, as in higher-income countries, active travel (walking and cycling) is beneficial to health and that this is often higher in poorer households than wealthier ones. A study by Laverly et al. (2015), drawing on data from

a WHO report on Global Ageing and Adult Health (SAGE) for six middle-income countries (including Ghana and South Africa), found that there was wide variation in older adults (aged 50+) use of active travel for ≥ 150 min per week, with the lowest at 21% in South Africa and the highest at 58% in Ghana. Older people were less likely to use active travel for 150 min per week, as were women and those with higher levels of household wealth. They observe that high use of active travel was associated with reduced risks of being overweight, having a high waist-to-hip ratio, as well as a lower waist circumference, BMI and systolic blood pressure. Moderate use of active travel was associated with reduced risks of having a high waist-to-hip ratio and lower waist circumference and systolic blood pressure. This would suggest that although poorer older people usually have far less access to motorised transport than their wealthier counterparts, they may thereby gain health benefits.

On the negative side, however, the risk of falls while walking or cycling tends to be higher among older people than among youth and become a significant cause of morbidity and mortality with age. Moreover, the impact of falls can be to reduce mobility through the psychological consequences associated with fear of falling (Kalula et al. 2016). Unfortunately, there is little evidence, as yet, regarding risk factors for falls in the older population of sub-Saharan African countries; a study by Kalula et al. in Cape Town appears to be the first in South Africa (ibid.). Interestingly, people living in the predominantly black location studied reported fewer falls than those in white or mixed-ancestry neighbourhoods, which Kalula et al. suggest may relate to being engaged mostly in physically demanding occupations which give an advantage in terms of muscle reserve capacity and function and better maintenance of gait and balance. However, widespread hazards across much of Africa, such as poor infrastructure for pedestrians (uneven pavements, uncovered storm drains, etc.) and uneven roads and poorly regulated traffic for cyclists, may well increase danger levels for older people, especially those with poor eyesight, hearing or balance problems.

Despite potential constraints on older people's mobility, as they move into older age, the need for mobility to access health services tends to

expand. In low- and middle-income countries in Africa, it is usually entirely incumbent on the patient to make their own way to the health centre, which can bring particular challenges for older people with poor physical strength and limited financial resources. A study of older people's access to health care in Uganda (Wandera et al. 2015), drawing on a nationally representative sample, thus suggested that four variables were significantly associated with healthcare access: age group, household poverty status, ownership of a bicycle as a means of transport and household major source of earnings. Older age (70+) and household poverty were associated with reduced access to healthcare in the last 30 days for older persons, while household ownership of a bicycle and earning of wages increased access to healthcare in the last 30 days. Issues of transport availability and affordability linked to the latter point are considered in the next section.

Transport Availability, Affordability and Ease of Use

Venter's (2011) analysis of transport expenditure and affordability in South Africa is particularly pertinent to this section. Drawing on data from the 2003 National Household Travel Survey, he focuses specifically on low income and mobility-constrained people, noting that approximately half of older people over 65 years ($N = 4522$) in that South African survey do not travel (i.e. did not leave their homes at all on the survey day), which is approximately twice that of the population as a whole. Analysis of transport problems (categorised into access problems, i.e. no available/suitable transport, affordability and service quality) by settlement type for older people throws further light on key issues. Venter shows that around one-third, or slightly more, older people in urban areas refer to access problems, as opposed to around two-thirds in rural areas; service quality is mentioned as a problem by around one-third of older adults in both rural and urban areas; affordability presents as a problem to 48% of poor rural older adults, but only 21% of poor urban older adults. It is interesting to note that the affordability issue is raised by a substantially higher proportion of rural poor older adults than the rural poor in general (36%), whereas in urban areas affordability figures for

poor urban older adults are very similar to the poor urban population as a whole (23%). However, the biggest problem in rural areas for all groups is clearly access, with very similar figures (around two-thirds) for both older adults and the population at large, and with little variation according to wealth. Venter (p. 138) suggests that older adults who want to travel seem to be the worst off, because they often do not qualify for subsidies (currently mainly available to workers). He argues that *if there is a case to be made for expanding concessionary fares*, it could be made for older people, and this would add little to the cost of public transport subsidy. However, transport subsidies present a contentious issue in most country contexts, developing and developed.

Over the last decade, there have also been three Nigeria-focused transport studies based on urban household surveys with older people, all of which draw some attention to the inadequacy of current transport provision in terms of cost and availability, especially in contexts where older people must continue to travel for livelihood sustenance in the absence of social security. Odufuwa (2006), drawing on a large (3556) sample of people aged 60+ from household surveys in four Nigerian cities (including the former and current capital cities), presents a broad argument regarding urban older people's poor access to transport with particular reference to long waiting hours at bus stops, unfair charges, hostile behaviour of operators and inaccessible location of bus stops. Even so, he finds over 90% of respondents making use of public transport 1–2 times a week for medical- and work-related trips; this principally comprises taxis (with little usage of motorcycles or auto-rickshaws, which are considered too dangerous). Across the sites, the most important problems identified, in ranked order, were as follows: difficulty in boarding vehicles (31%), difficulty in alighting (28%), lengthy waiting time (15%), unfriendly attitude of operators and others (12%), poor/inaccessible bus stops (6%) and high fares (5%). The relatively low ranking of fare cost in this study is particularly intriguing (and not replicated in the two studies which follow): it may reflect the sampling procedure, for which no information is presented.

Ipingbemi's (2010) study of older people's mobility and travel characteristics draws on a smaller survey (290 people aged 60+) conducted across just one major south-west Nigerian city, Ibadan. As with the

Odufuwa's research, this study emphasises transport costs in the context of older people's need for continuing engagement in economic activities, in the absence of social security. Unsurprisingly, nearly 30% of their journeys were associated with livelihood activities (followed closely by health-related journeys). Key transport constraints observed varied between different city locations and, in addition to high transport fares, included reckless driving (especially by motorcycle operators), poor facilities (no shelter or seats), long waits at bus stops (sometimes due to drivers ignoring them and failing to stop unless there are other passengers) and the design of vehicles (steps too high) used for public transport. There was also reference to abuse by other passengers and by drivers (discussed further below).

Finally, Olawole and Aloba (2014) conducted a small household survey of 250 people aged 60+, sampled purposively in three residential zones of Osogbo, a state capital in south-west Nigeria. Interestingly, this survey puts traffic congestion as the greatest travel constraint for older people, but followed by other problems similar to those identified by Odufuwa and Ipingbemi (though again, as with Ipingbemi, with seemingly relatively higher ranking of transport cost issues than in Odufuwa's research).

Fear of Harassment and Crime

Older people (along with other age groups) can find journeys, whether involving walking alone or including public transport, daunting from a security perspective. However, data relating specifically to older age groups are very sparse.

In a rare example, Ipingbemi (2010) noted, in his study of older people in Ibadan, Nigeria, that there were reports of fear of abuse by other passengers and by drivers, including the impatience of transport operators dealing with them when they were alighting from the vehicle (especially when carrying loads), and pushing and shoving from other passengers in congested vehicles (for which see also Frye 2013: 18 on Jamaican cities).

Lloyd-Sherlock et al. (2016), using the same WHO (SAGE) data on global ageing and adult health for six middle-income countries as

in Laverly et al. (2015), offer another perspective, in this case regarding pedestrian travel: the specific question on street safety included in the WHO survey is 'How safe do you feel when walking down your street alone after dark?'. These data reveal large national variations in reported crime fear, including between the two African countries in the survey, South Africa and Ghana; 65% of older South Africans felt unsafe on the street, compared to only 9% of older Ghanaians. However, in both countries, rates were much higher for older women than for men: among older women, street fear ranged from 10.1% in Ghana (compared to 7.4% men) to 68.3% in South Africa (versus 65.2 for men). In South Africa, being in a higher wealth quintile was associated with lower rates of fear (home and street), whereas in Ghana the opposite was found, with wealthier groups expressing higher rates of fear. Living in a rural area was associated with significantly lower rates of street fear in Ghana, but in South Africa rural location was associated with higher rather than lower levels of fear. The authors also note that the effect of sex on socialising outside the home varies by country: in Ghana female sex is associated with reduced socialising, in line with expectations based on gender relations in later life in the country.

The wider impacts on older people's lives can be substantial: in Lloyd-Sherlock et al.'s study, street fear was also found to be associated with less frequent use of outpatient health services, when controlling for self-reported health status, suggesting that older people with street fear are less inclined to leave the home to seek health care, even when they feel unwell. They suggest that it is likely that differences in reported rates of street fear are due to actual variations in fear of crime and violence: very high rates of fear and actual experience reported for South Africa are in line with the findings of other studies. However, they also emphasise that great care must be taken in attributing cause and effect in the relationship between fear and mobility, health and quality of life: while some limited insights about cause and effect can be obtained by looking at interactions between health, frailty and fear, their multivariate analysis suggests that although fear of crime may affect health and quality of life in some cases, the relationship is complex. A key point, however, is that frailty is '*by some distance*' (p. 1103) the most important determinant of fear, irrespective of other factors such as age or sex.

This same point will probably apply equally well with regard to travel on public transport.

Relationality, Including the Impact of Caring Responsibilities

This section emphasises the ways in which older people's mobility in Africa is socially produced, set within particular relations of power between themselves, their families and the wider community in which they live. The importance of relationality as a factor shaping African mobilities was flagged some years ago by Turner and Kwakye (1996), and see also Grieco et al. (1996) but has received little specific attention in subsequent transport/mobilities literature. Rare exceptions include Porter et al. (2013a), discussed below, Van Blerk (2016) on the relational im/mobilities of Ethiopian sex workers, and Porter et al. (2017: 15–17) on potential intergenerational tensions arising from relational im/mobilities from a child's viewpoint.

Turner and Kwakye's work in Accra drew specific attention to the way older people's mobilities in Africa often intersect with those of other family members. In that (and other West African) context(s), family fostering arrangements, whereby children are housed with older family members and expected to assist them, remain a widespread traditional practice.¹ They enable older grandmother traders to continue work by reducing their travel discomfort on Accra's overcrowded, uncomfortable and congested public transport system. Meanwhile, older people's reduced travel enables them to take the role of domestic anchors for larger households where many adults are engaged in activities across the city, since their trading then focuses on neighbourhood selling from the family home.

Another context in which older people's mobility may interlink closely with other family members is care-giving, whether to young (grand)children, where the parents have died or moved to another

¹Though see Aboderin (2004) for reflections on decline in family support to older people in Accra associated with resource constraints and changing values.

location (as in Porter et al. 2013a for rural Tanzania, see below) or as carers of people with serious illness. With reference to the latter case, many older people are carers of people living with HIV and AIDS in resource-poor settings where there is limited access to anti-retroviral therapy. Chepngeno-Langat et al. (2011) emphasise the relatively neglected role of older male carers (50y+) in Nairobi slums and the significantly increased likelihood of disability and severe health problems among them, compared to male non-caregivers. The links between health-carer responsibilities and mobility have not, as yet, received attention in the transport/mobilities literature, but we can hypothesise that any reduction in older people's mobility outside the home, whether this reduces social or economic activities or both, is likely to bring a consequent reduction in well-being of the carer, thus fitting with the conclusions of Chepngeno-Langat et al. (2011) noted above. However, Ssengonzi (2009) to the contrary suggests that the care-giving responsibilities of those older people (especially women) in rural Uganda who have adult children affected by HIV and AIDS may require extensive travel to care for the sick. Clearly, much will depend on the personal/family circumstances of the carer concerned.

Building a Mixed-Methods Research Study Around Transport and Mobilities with Older People in Rural Tanzania

The significance of intergenerational intersectionality for older people's mobility in sub-Saharan Africa, reviewed above, is mirrored in our recent and ongoing research in rural Tanzania² (Porter et al. 2013a; Porter et al. 2014). This study commenced in 2012 in Kibaha district, Pwani Region, where we set out to explore older people's mobility and access to services and associated implications for health-seeking behaviour and livelihoods, following on from prior preliminary identification

²This research was conducted under the DFID-funded Africa Community Access Programme (AFCAP).

of transport unavailability as a significant problem for older people. In Tanzania, continuing access to livelihoods is frequently vital, not just for older people to support themselves, but now also to support young orphans and others in their care.³ The mobility and mobility constraints older people face, which will impact strongly on their ability to act effectively in these—and other—roles, seemed to constitute a major knowledge gap.

As the (principally urban-focused) mobility literature reviewed above indicates, unlike in Western contexts, older people need to be mobile in order to access an income, so long as they are physically able. In rural areas, income from farming is frequently insecure, and multiplex livelihoods and off-farm income often appear to offer the best route to survival (e.g. Bryceson 2002; Gladwin et al. 2001). However, this very often requires travel to the nearest market or service location, causing particular difficulties, for instance, for older women traders. Ill health and infirmity may introduce further problems for older people, in a rural walking world where pedestrian transport dominates among all age groups. Reduced pedestrian mobility, due to infirmity and the unaffordable cost or unavailability of motorised transport, may help to limit older people's access to work and vital health care, thus reinforcing their poverty: thus a vicious circle develops in which mobility restrictions form a key component.

Identifying Hypotheses Around Rural Older People's Mobility for Field Testing

In the absence of detailed information on the rural transport and mobility issues faced by older people, a series of hypotheses were put forward initially for examination in our Kibaha study. These drew on the very limited (and mostly urban-focused) published literature available at that time, but also on our wider understandings and experiences in rural Africa, on HelpAge's extensive experience of working with older people

³Approximately 20% of 3000 child respondents surveyed in 2007/2008 in a child mobility study lived with people other than their parents—in South Africa, Malawi and Ghana, respectively, 14, 9 and 9% live with grandparents (usually grandmother alone); the remainder lived with other relatives/foster parents, many of whom are older people (Porter et al. 2010).

worldwide and through preliminary discussions with older people living in the study district itself.

Health and Disability Impacts on Mobility in Rural Areas

HelpAge's previous work in Kibaha district had emphasised that, as people move into older age, the need for mobility to access health services expands, yet they are hampered by transport-related factors: this was a key reason why the agency wished to explore mobility issues.

Older travellers may face difficulties around specific health problems sometimes associated with old age, such as urinary incontinence among women due to earlier obstetric problems (e.g. obstetric fistula and related conditions). This had not been reported in the urban mobilities literature on older people, but women with such conditions are more likely to be encountered in remoter rural areas where access to obstetric services is poor. Older people are also likely to be at disproportionate risk of road traffic accidents (a major cause of injury and death across Africa) because of age-related physical and cognitive changes.

Another potential health issue identified in other rural locations has been the demands of load carrying on women from childhood and onwards, which *appear* to impact severely on health and quality of life as they enter and experience old age (though we are unaware of any evidence base to support this hypothesis; see Porter et al. 2013b). The implications of Africa's transport gap and consequent dependence on pedestrian head-loading (often designated a female activity) have received remarkably little attention. The particular plight of older women in accessing fuelwood, water and markets needed further investigation.

Transport Availability, Affordability and Ease of Use in Rural Contexts

We hypothesised that, as in urban areas, lack of reliable low-cost transport and restricted mobility was likely to severely affect older people's access to clinics, pension points (where pensions are provided), paid

work, livelihood opportunities, churches, mosques and other faith institutions, participation in social networks, and other facilities and services important to their lives, with negative impacts on their health and well-being. Long walks to access a transport route or to services were likely to present a serious hurdle, particularly to less fit older people and people with a disability, and especially along rural routes crossing difficult terrain, and in the rains. Even where regular transport is available, low incomes and poverty could well limit access: older people, especially women carers, often appear to be among the poorest in communities, thus probably those least able to afford transport fares. Even when older people are able to access public transport, they may face numerous difficulties (as Ipingbemi 2010 suggested in his Ibadan urban study).

Fear of Harassment and Crime in Rural Contexts

Our research pre-dated the availability of publications by Ipingbemi (2010) and Lloyd-Sherlock et al. (2016), but prior work by the lead author with children suggested that some difficulties that older people face in rural areas were likely to be similar to those observed in youth mobility contexts: harassment by transport operators, being cheated on fares by operators (Porter et al. 2010).

Relationality, Including the Impact of Caring Responsibilities, in Rural Contexts

As noted above, older people's mobility in Africa is set within particular relations of power between themselves, their families and the wider community in which they live. We can expect considerable diversity of experience and access to power amongst older people, according to age, gender, ethnicity, socio-economic status, family composition (dependants), occupational history, infirmity/health, personal mobility status, density of service provision, etc. It is important to assess how this diversity impacts on transport usage, suppressed journeys, mobility and access to services and other elements important to older people's well-being. Thus, we hypothesised that very old and infirm people, in particular, may face a lack of power and access to wider decision-making

processes (similar to that experienced by children). Where this is the case, their views are less likely to be heard and their transport and mobility needs even less likely to be met than those of other groups. Consequently, we needed to put a particular focus on working with older people in novel ways to ensure their voices were heard.

In terms of caring responsibilities, older people's role as carers of young children whose parents were dead or working in town was particularly striking in rural Kibaha (as in much of rural Tanzania). This led us to hypothesise the likely interconnectedness of child-adult mobilities, with possible negative and positive impacts. Negative impacts could include a reduction in the educational, health and livelihood opportunities of children and young people in their care, thus reducing overall long-term potential for poverty eradication. For instance, mobility and access constraints would be likely to impact strongly on older people's ability to earn income, with consequent impact on their ability to feed, clothe and educate children in their care. HelpAge International has argued that access to livelihoods had been inadequately considered in an older people's context (they are often treated by government, academics and others as if they are outside the working population). On the other hand, older people might gain access to services not only directly but also indirectly through both adults and children in the community. The relationality between children and older people's lives has been considered in general terms (e.g. Whyte et al. 2004), but needed analysis in a mobility context (as in Turner and Kwakye 1996). Thus, impacts on older people of other household and community members' mobility need to be considered, especially regarding migration, which may affect indirect access to services via family helpers.

Exploring the Potential to Improve Rural Older People's Well-Being Through Improved Connectivities

HelpAge International's institutional mandate encouraged us to explore potential routes to improving older men and women's access to services in rural Kibaha. These were likely to vary from those open to younger

people in their communities and from urban settings. Bicycle usage, for instance, may be impossible for older women who have never had time/opportunity to learn to cycle. Older people with disabilities are particularly disadvantaged, such that even mobile service provision to settlement centres may not serve them adequately.

The crucial importance of connectedness to family for older people in Africa needs to be set within the context of limited work potential, ill health and lack of income security: social bonds are likely to be essential to securing care and financial support in old age. In many African societies, giving money is a way younger kin traditionally pay respect and show affection and care for older relatives, but when the younger generation has migrated elsewhere, it may be difficult for older people to achieve the sustained interaction necessary to maintain such links. Mobility and access to affordable transport are likely to be key factors in sustaining social networks; however, early observation in Kibaha suggested that mobile phones could also play a growing role. The potential for mobile phone use (expanding dramatically across Africa) to substitute virtual for physical mobility to the advantage of older people looked considerable: current and potential uses among older people needed investigation.

The Kibaha Research Project

We selected 10 settlements with varying accessibility to roads and health services for detailed research to investigate the hypotheses noted above, utilising a three-strand research methodology:

1. Community co-investigation with a small group of 12 older people (8 men, 4 women, all aged between 59 and 69), to establish key issues for further investigation and analysis, with planned working in one focus settlement after a one-week training workshop, $N = 74$ transcripts. This first strand of the research was particularly novel.
2. Academic-led qualitative studies, $N = 194$ in-depth interviews using checklists, conducted with older people and other key informants (health workers, transport operators, settlement leaders).

3. Finally, a survey questionnaire to older people, $N = 339$, obtained by selecting households along settlement transects, interviewing those older people aged 60+ in each household and aiming for a minimum of 30 completed questionnaires per settlement.

Activities 2 and 3 were both based on findings and key questions identified from activity 1, but in this case extending to all 10 settlements. Qualitative interview data from the older people's work and the academic-led qualitative interviews were analysed thematically, and information for key themes was triangulated with findings from the SPSS survey data analysis. Full details of the research process are available in Porter et al. (2014).

A further note may be helpful regarding the co-production component of the study. The key difference to note between co-production of knowledge and co-investigation is that co-investigation represents a further move along a continuum of engagement with less powerful participants. While participation and dialogue characterise co-production of knowledge, in *co-investigation* such partners are actively engaged in the research process, as peer researchers (Porter 2016). Some brief reflections on the value of taking a co-investigation approach to research with older community members may be useful here, since we are aware of only one earlier study where co-investigation has involved the recruitment of older people (a HelpAge study by Ibralieva and Mikkonen-Jeanneret 2009). Firstly, our older people peer researchers seem to have enjoyed the research process greatly, and while this may have been partly a reflection of the small payments they received for their work, it is also the case that they were sufficiently engaged in the study to independently decide to continue and work across all ten study villages after their allocated work component was complete. Secondly, as noted above, their findings were crucial to the design of the academic-led components of the study. Subsequently, at the national workshop in Dar es Salaam which followed, where the Kibaha project findings were presented to government and NGO staff, the older people's team participated with great enthusiasm. The success of the project and the co-investigation approach was sufficient to encourage HelpAge Tanzania to undertake further studies, including one focused on intergenerational

relations, with both children and older people trained as peer researchers (Mulongo et al. 2014) and to then follow up with further work on older people's mobility in another region of Tanzania.

Our main transport findings and links back to the initial hypotheses are reported in full in Porter et al. (2013a). Of these, the new connectivities we discovered associated with increasing mobile phone and motorcycle-taxi usage among older people are likely to be of particular significance for the future in rural areas of Africa like Kibaha. Motorcycle taxis (*boda-boda*) are now the main modes of transport in this district, except along the paved road. According to local inhabitants, they have spread rapidly in all the Kibaha study settlements since c. 2007–2009, before which transport was limited mainly to bicycle taxis. Their uptake has been facilitated by the availability of cheap imported Chinese motorcycles and the fact that they offer a major employment opportunity for rural youth. We concluded that *boda-boda* have transformed rural lives in this district, even where older people are concerned: 18% of older women and 31% of older men had used one in the week before the survey ($n = 339$)—they are now ubiquitous. While older people would *prefer* other motorised transport (i.e. buses or minibuses which are cheaper, much safer and more comfortable than *boda-boda*), the only real alternative is usually walking. They are, of course, especially important in health emergencies, but they are also important for livelihoods. The small scale of farming among many older people makes *boda-boda* feasible for transport of farm produce and farm inputs. We found some older people taking goods to market by *boda-boda* and carrying farm inputs home from town by the same means. Moreover, some urban traders were coming into the district by *boda-boda* to purchase at their farms. *Boda-boda* were even important in our one study settlement located on the paved road, because though other vehicles are available here, *boda-boda* are able to take people to their doorstep, and continue to run at night when other transport services have stopped.

Meanwhile, mobile phones are a complementary new connector in Kibaha (Porter 2016). Cell phone expansion has been remarkable in Tanzania as across much of Africa, despite user challenges (airtime cost, network, charging). Airtime costs have led to various adapted (low-cost)

modes of use—‘buzzing’ (i.e. cutting off a call before a recipient answers so they know they should call back), SMS (short messaging), etc. Our Kibaha survey of older people found that mobile phones were owned by 41% of the older men surveyed and 15% of older women. They had often been acquired as a gift from their children living in town. However, phones were also widely available to older people through relatives and friends: sharing of phones was extremely common, such that almost all—both women and men—had access when they needed one. The implications for transport users are considerable, since they can now call transport operators to come to pick them up, which greatly improves access to transport. Transport operators, meanwhile, including boda-boda drivers, find a mobile phone increasingly essential to business (in an increasingly competitive business environment). Boda-boda services are, of course, especially efficient when ordered by mobile phone. Some older people reported having as many as five boda-boda operator numbers on their mobile phone. Thus, mobile phones are now widely used to organise boda-boda transport both in emergencies and every day. Phones have also, however, led to some reported reduction in travel among older people: *I don't have to travel so much nowadays—maybe when there is a funeral or a crucial thing for me to travel, but for minor things I use my brother's phone and we talk* (Woman 66y); *Nowadays I don't travel much to go to my children in town, instead we talk (on the phone) and solve our problems where possible* (Woman 78y).

Mobile phones were also being used to transfer money, such that, in some cases, children in town were now sending money to their older parents instead of bringing it to the village. This has had the benefit of reducing the time and cost incurred in travel and the not inconsiderable risks of a road accident or theft: *I use M-PESA; my children usually send money through my chip (Vodacom-number), then they call my friend through his phone telling how much they have sent through my Vodacom-line, so I just go with my chip to the Vodacom shop to take money* (Man 66y).

There is much evidence, overall, of improved well-being as a result of these phone and boda-boda innovations. In particular, they have brought a substantial improvement in access in remote areas, not least for older people, especially regarding emergency health travel. Moreover, solar phone charging, airtime sales and boda-boda

ownership/rental are now part of the livelihood repertoire of some village elites (including some older people).

The mobile phone certainly supports social interaction in stretched households (where children are in town and grandchildren left with grandparents) and can facilitate remittances, while reported reductions in travel *overall* due to the increasing use of phones—especially benefits remote populations and the infirm. At the same time, of course, there is also a downside if—as some older people observed—they then see very little of family members: *Most older people have phones now. They call their children who are far away. If you don't remind the children they forget you and your needs.* (Man 71y, caring for 5 young orphaned grandchildren). It is possible that reduced face-to-face interaction may eventually leave some older people feeling lonely and isolated.

Key Research Gaps in Mobilities/Transport-Focused Work with Older People in Africa

From the literature review, it is evident that we have not, as yet, progressed far—or deeply—in our understanding of older people's mobility issues across sub-Saharan Africa. This research gap needs urgent attention, given the fact that both absolute numbers and the share of older people are on the increase in Africa, as elsewhere (Schwanen and Paez 2010). The impact of older people's (limited) access to transport and mobility on their livelihood opportunities, health and well-being has particular significance in African contexts where social security is lacking and health services particularly inadequate.

In terms of *areal coverage* across Africa, apart from Venter's South Africa countrywide analysis, there are only a few studies of older people's mobility in urban contexts (West Africa), just the one rural study in Tanzania and occasional passing reference to the potential significance of older people's mobility and access to transport in research focused on other vulnerable groups. Conditions in most of the continent remain essentially unexplored. It is important not to assume that older people's constraints and transport needs are ubiquitous: variations may occur according to topography, population density, climatic

conditions, cultural context, etc., but, as yet, we have little indication what patterns these may take.

Age and gender disaggregation is important in all mobilities research, but is often inadequately considered. Age disaggregation within the ‘older people’ category is clearly vital, since physical mobility tends to decline over time with physiological changes; the mobility characteristics and transport needs of older people over c. 75 years may be quite different from people a decade younger. Additional *disabilities data* will also be extremely important. *Gender*, meanwhile, is likely to continue to shape desired and actual activity patterns and associated mobilities (albeit depending, in part, on cultural context). It is important to note that many older African women have far greater freedom to travel than their pre-menopausal counterparts, so long as they have access to resources and the physical capacity to do so (Porter 2011). However, gender is often a key determinant of financial resources, with older women commonly far less able to afford means of transport or even transport fares than older men.

It is also essential to examine older people’s mobilities within the wider context of the *household composition and intergenerational relations*, and the associated mobilities in which they are enmeshed. The significance of relationality in mobility contexts was strongly emphasised in our Tanzania study, where older people’s livelihood contributions were found to be crucial to many young people in their care, and where young people also often assisted older people with work like carrying firewood and water from locations beyond the homestead, or travelling to the nearest market town to buy vital medicines. Some of the most disadvantaged older people in our Tanzania study were those residing in single-occupancy households⁴ without family living nearby.

Reflections on *mobility changes along the life course*, meanwhile, may draw our attention to the complexity of changing bodily capacities (see Ingold and Vergunst 2008: 17) and their potential wider impacts. Younger people travelling *with* older people may perhaps change the tenor of an older person’s journey—possibly on the one hand bringing

⁴12.1% of women and 10.6% of men lived in single-occupancy households.

companionability and security and on the other hand the stress of keeping pace with a younger, more able, energetic walker. It is important to think of mobility not just in terms of getting from A to B but also in terms of emotion and *affect*. Research on mobilities in Africa has barely started in this field but has the potential to contribute to a much deeper understanding of mobile lives.

The *intersection of virtual with physical mobility* is a rapidly emerging issue, as observed in the Tanzanian context. For older people, there can be potentially enormous advantages in terms of feasible reductions in both financial and physical costs associated with reduced travel. M-Health services are also currently expanding very rapidly in many African countries. Transport researchers are only slowly beginning to recognise the importance of including consideration of virtual mobility in planning for transport and access to services: more joined-up thinking in this arena is essential. However, there are also potential disadvantages, particularly for older people, associated with the decline of face-to-face interactions which may ensue wherever virtual mobility expands—this will need careful monitoring, especially if it is accompanied by contraction in rural service provision. Loneliness and isolation can result when phone contact curtails co-presence, as research in other contexts is beginning to suggest (Hardhill and Olphert 2012).

Insofar as *research methodologies* employed are concerned, we submit that there is a need for more mixed-method studies which will extend survey research of the kind which has been conducted recently in Nigeria by academics working in transport studies into a more grounded analysis. That research has been valuable, in itself, in drawing attention to older people's mobility needs, not least because the numbers produced in surveys are generally deemed by the transport sector an essential pre-requisite for policy and planning. However, mixed-methods approaches are likely to bring to the fore a much stronger view of issues from the grassroots, especially if the starting point is community co-investigation involving older people themselves. When this is then followed up by further qualitative research with key informants such as transport operators, the questions subsequently included in large-scale surveys are more likely to be precisely pertinent to understanding and resolving issues on the ground.

Action research studies, whereby interventions are made in communities and then carefully monitored would be particularly valuable. Information from our Tanzania study suggests this might include Intermediate Means of Transport (IMT) interventions such as specially designed light carts for transporting water and firewood (a major burden in intra-village/neighbourhood transport for many older people), and development and trials of a safety harness for use on motorcycle taxis, or other means whereby boda-boda might be adapted to make it safer and more comfortable to older people and also to examine feasible alternatives, such as a more advanced ambulance trailer/tricycle, especially in the context of travel of sick older people to health centres. More broadly, piloting of a community-run emergency health service with a suitable 3- or 4-wheel vehicle which is easy to board and comfortable, to carry older people and other vulnerable groups such as people with disabilities to the nearest district health facility, with a small fund to provide fares for emergency treatment, could be valuable in some contexts. Community '*Transport to health*' clubs (similar to funeral clubs), where small regular contributions are made by individuals and/or national social assistance funds towards emergency hospital transport, to help vulnerable groups prepare for health emergency expenditures, might well form a useful linked intervention, together with community arrangements to support improved emergency night transport in remoter settlements, based on designated community cell phone links with a small number of local private transport operators. In promoting trials of such interventions, it will be important to emphasise the broader benefits of paying attention to older people's transport needs, given competing demands on constrained resources. As noted above, the mobility of different age groups is complexly intertwined: interventions to assist older people can contribute substantially to wider community development.

Concluding Reflections

Clearly, the research task in view is enormous. Our experience suggests that the best prospect for building a sound evidence base is in collaborative research involving not just academic researchers and NGOs but also

the older people directly affected by transport and mobility constraints. However, while high-quality research is essential to understanding these issues, it is essential to bear in mind that any required interventions are likely to depend, at least in part, on bringing the transport sector—and other sectors such as health—directly into the research nexus. This ideally needs to happen from the start of the research. Transforming evidence into policy and practice is particularly challenging in the transport sector which is dominated by male, middle-aged, middle-class engineers whose principal focus is road construction rather than transport services and where there is still a common reluctance to engage with users or with qualitative data (as has been observed elsewhere with reference to gender issues, see Porter 2008). Olawole and Aloba (2014) observe the total absence of national transport policy on the travel and mobility of older people in Nigeria: the same can probably be said for most African countries (but would be worthy of further investigation).

There is urgent need for government action where older people's mobility is concerned. We have identified a few champions and allies in the transport and health sectors in the course of our Tanzanian research, principally by virtue of our fortuitous inclusion in a wider community access research programme (AFCAP), which is focused principally on road engineering but also includes transport services research in diverse areas, including maternal health. Extending linkages and building on alliances with researchers, policy makers and practitioners in this way, are likely to be crucial in efforts to improve transport and mobility for older people in the longer term.

Acknowledgements Funding: The Africa Community Access Programme [AFCAP] funded our field research in Tanzania.

References

- Aboderin, I. 2004. Decline in Family Material Support for Older People in Urban Ghana. *Journal of Gerontology, Series B* 59 (3): S128–S137.
- Bryceson, D.F. 2002. The Scramble in Africa: Reorienting Rural Livelihoods. *World Development* 30 (5): 725–739.

- Chepngeno-Langat, G., N. Madise, M. Evandrou, and J. Falkingham. 2011. Gender Differentials on the Health Consequences of Care-Giving to People with AIDS-Related Illness Among Older Informal Carers in Two Slums in Nairobi, Kenya. *AIDS Care* 23 (12): 1586–1594.
- Feng, J., M. Dijst, B. Wissink, and J. Prillwitz. 2013. The Impacts of Household Structure on the Travel Behaviour of Seniors and Young Parents in China. *Journal of Transport Geography* 30: 117–126.
- Frye, A. 2013. Disabled and Older Persons and Sustainable Urban Mobility. Thematic Study Prepared for Sustainable Urban Mobility: Global Report on Human Settlements 2. <http://www.unhabitat.org/grhs/2013>.
- Gladwin, C.H., A.M. Thomson, J.S. Peterson, and A.S. Anderson. 2001. Addressing Food Security in Africa via Multiple Livelihood Strategies of Women Farmers. *Food Policy* 26 (2): 177–207.
- Grieco, M., N. Apt, and J. Turner. 1996. *At Christmas and on Rainy Days: Transport, Travel and the Female Traders of Accra*. Aldershot: Ashgate.
- Hardill, I., and C.W. Olphert. 2012. Staying Connected: Exploring Cell Phone Use Amongst Older Adults in the UK. *Geoforum* 43: 1306–1312.
- Ibralieva, K., and E. Mikkonen-Jeanneret. 2009, July. *Constant Crisis: Perceptions of Vulnerability and Social Protection in the Kyrgyz Republic*. HelpAge International.
- Ingold, T., and J.L. Vergunst. (2008). Introduction. In *Ways of Walking: Ethnography and Practice on Foot*, ed. T. Ingold and J.L. Vergunst. Aldershot: Ashgate.
- Ipingbemi, O. 2010. Travel Characteristics and Mobility Constraints of the Elderly in Ibadan Nigeria. *Journal of Transport Geography* 18 (2): 285–291.
- Kalula, S., M. Ferreira, G. Swingler, and M. Badri. 2016. Risk Factors for Falls in Older Adults in a South African Urban Community. *BMC Geriatrics* 16 (51): 1–11.
- Laverty, A., R. Palladino, J. Lee, and C. Millett. 2015. Associations Between Active Travel and Weight, Blood Pressure and Diabetes in Six Middle Income Countries: A Cross-Sectional Study in Older Adults. *International Journal of Behavioral Nutrition and Physical Activity* 12 (65): 1–11.
- Li, H., R. Raeside, T. Chen, and R.W. McQuaid. 2012. Population Ageing, Gender and the Transportation System. *Research in Transportation Economics* 34: 39–47.
- Liu, Y.-C., and Y.-C. Tung. 2014. Risk Analysis of Pedestrians' Road Crossing Decisions: Effects of Age, Time Gap, Time of Day and Vehicle Speed. *Safety Science* 63: 77–82.

- Lloyd-Sherlock, P., S. Agrawal, and N. Minicuci. 2016. Fear of Crime and Older People in Low- and Middle-Income Countries. *Ageing & Society* 36: 1083–1108.
- Lucas, K. 2011. Making the Connections Between Transport Disadvantage and the Social Exclusion of Low Income Populations in the Tshwane Region of South Africa. *Journal of Transport Geography* 19 (6): 1320–1334.
- Maart, S., A.H. Eide, J. Jelsma, M.E. Loeb, and M. Ka Toni. 2007. Environmental Barriers Experienced by Urban and Rural Disabled People in South Africa. *Disability & Society* 22 (4): 357–369.
- Mulongo, G. with A. Tewodros, L. Ndamgoba, A. Heslop, N. Idehen, and J. Milovanovic. 2014. Study Report on Extending Healthy Ageing Through the Life Course: Intergenerational Interventions in Rural Tanzania. Unpublished Paper, HelpAge Tanzania, September.
- Odufuwa, O.B. 2006. Enhancing Mobility of the Elderly in Sub-Saharan Africa Cities Through Improved Public Transportation. *IATSS Research* 30 (1): 60–66.
- Olawole, M.O., and O. Aloba. 2014. Mobility Characteristics of the Elderly and Their Associated Level of Satisfaction with Transport Services in Osogbo, Southwestern Nigeria. *Transport Policy* 35: 105–116.
- Pettersson, P., and J.-D. Schmocker. 2010. Active Ageing in Developing Countries?—Trip Generation and Tour Complexity of Older People in Metro Manila. *Journal of Transport Geography* 18 (5): 613–623.
- Porter, G. 2002. Living in a Walking World: Rural Mobility and Social Equity Issues in Sub-Saharan Africa. *World Development* 30 (2): 285–300.
- Porter, G. 2008. Transport Planning in Sub-Saharan Africa. Progress Report 2. Putting Gender into Mobility and Transport Planning in Africa. *Progress in Development Studies* 8 (3): 281–289.
- Porter, G. 2011. 'I Think a Woman Who Travels a Lot Is Befriending Other Men and That's Why She Travels': Mobility Constraints and Their Implications for Rural Women and Girl Children in Sub-Saharan Africa. *Gender, Place and Culture* 18 (1): 65–81.
- Porter, G. 2016. Mobilities in Rural Africa: New Connections, New Challenges. *Annals of the American Association of Geographers* 106 (2): 434–441.
- Porter, G., A. Heslop, F. Bifandimu, E. Sibale, A. Tewodros, and M. Gorman. 2014. Exploring Intergenerationality and Ageing in Rural Kibaha Tanzania: Methodological Innovation Through Co-investigation with Older People.

- In *Intergenerational Space*, ed. R. Vanderbeck and N. Worth. London: Routledge.
- Porter, G. with K. Hampshire, A. Abane, A. Munthali, E. Robson, and M. Mashiri. 2017. *Young People's Daily Mobilities in Sub-Saharan Africa. Moving Young Lives*. London: Palgrave Macmillan.
- Porter, G., K. Hampshire, A. Abane, E. Robson, A. Munthali, M. Mashiri, and Augustine Tanle. 2010. Moving Young Lives: Mobility, Immobility and Urban 'Youthscapes' in Sub-Saharan Africa. *Geoforum* 41: 796–804.
- Porter, G., A. Tewodros, F. Bifandimu, M. Gorman, A. Heslop, E. Sibale, A. Awadh, and L. Kiswaga. 2013a. Transport and Mobility Constraints in an Aging Population: Health and Livelihood Implications in Rural Tanzania. *Journal of Transport Geography* 30: 161–169.
- Porter, G., K. Hampshire, C. Dunn, R. Hall, M. Levesley, K. Burton, S. Robson, A. Abane, M. Blell, and J. Panther. 2013b. Health Impacts of Pedestrian Head-Loading: A Review of the Evidence with Particular Reference to Women and Children in Sub-Saharan Africa. *Social Science and Medicine* 88: 90–97.
- Schwanen, T., and A. Paez. 2010. The Mobility of Older People—An Introduction. *Journal of Transport Geography* 18 (5): 591–668.
- Ssengonzi, R. 2009. The Impact of HIV/AIDS on the Living Arrangements and Well-Being of Elderly Caregivers in Rural Uganda. *AIDS Care* 21 (3): 309–314.
- Turner, J., and E. Kwakye. 1996. Transport and Survival Strategies in a Developing Economy: Case Study Evidence from Accra, Ghana. *Journal of Transport Geography* 4 (3): 161–168.
- Van Blerk, L. 2016. Livelihoods as Relational Im/Mobilities: Exploring the Everyday Practices of Young Female Sex Workers in Ethiopia. *Annals of the American Association of Geographers* 106 (2): 413–421.
- Velkoff, V.A., and P.R. Kowal. 2006. Ageing in Sub-Saharan Africa: The Changing Demography of the Region. In *Ageing in Sub-Saharan Africa: Recommendations for Furthering Research*, ed. B. Cohen and J. Menken, 55–81. Washington, DC: National Academy of Sciences.
- Venter, C. 2011. Transport Expenditure and Affordability: The Cost of Being Mobile. *Development Southern Africa* 28 (1): 121–140.
- Wandera, S.O., B. Kwagala, and J. Ntozi. 2015. Determinants of Access to Healthcare by Older Persons in Uganda: A Cross-Sectional Study. *International Journal for Equity in Health* 14 (26): 1–10.
- Whyte, S.R., E. Alber, and P.W. Geissler. 2004. Lifetimes Intertwined: African Grandparents and Grandchildren. *Africa* 74 (1): 1–5.