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ARTICLE

A cross-cultural investigation of the conceptualisation of frailty in northern Tanzania

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Abstract
Frailty prevalence is higher in low- and middle-income countries (LMICs) compared with high-income countries when measured by biomedical frailty models, the most widely used being the frailty phenotype. Frailty in older people is becoming of global public health interest as a means of promoting health in old age in LMICs. As yet, little work has been done to establish to what extent the concept of frailty, as conceived according to 'western' biomedicine, has cross-cultural resonance for a low-income rural African setting. This study aimed to investigate the meaning of frailty contextually, using the biomedical concept of the frailty phenotype as a framework. Qualitative interviews were conducted with a purposive sample of older adults, their care-givers and community representatives in rural northern Tanzania. Thirty interview transcripts were transcribed, translated from Kiswahili to English and thematically analysed. Results reveal that despite superficial similarities in the understanding of frailty, to a great extent the physical changes highlighted by the frailty phenotype were naturalised, except when these were felt to be due to a scarcity of resources. Frailty was conceptualised as less of a physical problem of the individual, but rather, as a social problem of the community, suggesting that the frailty construct may be usefully applied cross-culturally when taking a social equity focus to the health of older people in LMICs.

Keywords: ageing; frailty; global health; low- and middle-income countries (LMICs); sub-Saharan Africa

Introduction

The proportion and number of older people is increasing worldwide, and this rise in the older population is occurring most rapidly in sub-Saharan Africa (SSA) (World Health Organization, 2015). Frailty, while not universal in old age, increases with age and has been called an emerging global public health issue (Buckinx *et al.*,

2015; Cesari *et al.*, 2016). The concept of frailty is described in high-income country (HIC) biomedical literature by two major models: the phenotype and deficit accumulation models, thought to be distinct, yet complimentary concepts (Cesari *et al.*, 2014). The phenotype model is based on a theory of cyclical deterioration in the body's physiology and can be detected by identifying a syndrome of weakness (measured by hand-grip strength), slowness (captured by walking speed), unintentional weight loss (defined as ⩾5% over the prior year by serial weight measurement), self-reported exhaustion and low physical activity (Fried *et al.*, 2001). The deficit accumulation model quantifies frailty as a ratio of the number of health- and age-associated 'deficits' from those counted (Rockwood and Mitnitski, 2007). These 'deficits' are loosely defined as any symptom, sign, disability or diagnosis across a range of modalities, often including cognitive impairment and mood (Rockwood and Mitnitski, 2007; Searle *et al.*, 2008). The multi-dimensional nature of frailty is increasingly being recognised, acknowledging the importance of psychological and social aspects in the construct of frailty (Rodriguez-Manas *et al.*, 2013; Gwyther *et al.*, 2018; Shaw *et al.*, 2018). Nevertheless, this article will concentrate on the frailty phenotype: while the frailty phenotype has been critiqued for its narrow focus on physical components (Gobbens *et al.*, 2010), perhaps due to its relative simplicity, it has been widely adapted and is the most commonly applied frailty measure globally (Nguyen *et al.*, 2015; Gray *et al.*, 2016; Siriwardhana *et al.*, 2018).

Community frailty prevalence is higher in low- and middle-income countries (LMICs) as compared with HICs according to both models (Nguyen *et al.*, 2015; Gray *et al.*, 2016; Siriwardhana *et al.*, 2018). Additionally, across both HICs and LMICs, frailty is unequally distributed according to socio-economic gradients (Lang *et al.*, 2009; Biritwum *et al.*, 2016, Hoogendijk *et al.*, 2018). A recent review of the literature sought to examine whether this is primarily due to genetic or socio-economic factors by comparing the frailty trajectories of ethnic minority migrants with white majority populations of HICs. Improved integration, citizenship and better access to health care were found potentially to reduce frailty risk in migrant groups, with the authors concluding that: 'Ethnicity may play some part in frailty pathways but, so far, the evidence suggests frailty is a manifestation of lifetime environmental exposure to adversity and risk accumulation' (Majid *et al.*, 2020: 33). There is a growing interest in applying biomedical frailty models, such as the frailty phenotype, in SSA research (Payne *et al.*, 2017), with the broad global health goals of promoting healthy ageing (Beard *et al.*, 2016). Previous research in the same geographical location of Tanzania found a community prevalence of 11.2 per cent using the frailty phenotype, but faced challenges in its cross-cultural adaptation (Lewis *et al.*, 2018*a*). Moreover, there has been little attempt to investigate whether these constructs resonate cross-culturally, or indeed how the frairlty construct might help improve health for older people in rural SSA. This qualitative study aimed to investigate the conceptualisation of frailty by lay individuals in rural Tanzania and to examine the extent to which this concurred with a dominant 'western' and biomedical construct: the frailty phenotype.

Wishing to avoid cultural essentialism, and acknowledging that comparisons between HICs and rural SSA contexts may easily fall into simplistic contrasting of extremes, the following sections will introduce some important concepts relating to frailty from the social sciences literature. An introduction to the

conceptualisation of frailty as conceived in 'western'[1] HICs will be introduced, followed by a review of the relevant anthropological literature from several settings in southern and eastern Africa.

Conceptualising frailty and the 'fourth age'

Frailty is inherently socially produced and culturally dependent, but the universality of the dominant western HIC view is often assumed. Higgs and Gilleard (2014) conceive of frailty as the defining attribute of the modern 'fourth age'. Peter Laslett originally proposed a theory of the lifestages in response to the development of the welfare state and retirement from physically demanding employment in industrialised nations (Laslett, 1996). The 'third age' according to Laslett, was the period after retirement where one could enjoy the rewards of a productive working life and work towards the goal of self-actualisation (Laslett, 1996). After this 'crown of life' followed the 'fourth age', the inevitable time of decline and decrepitude, occurring chronologically after the 'third age' and prior to death (Laslett, 1996).

These concepts have been developed, so that the 'third age' has since been described as both a generational and cultural phenomenon occurring within the generation of 'baby-boomers' born after the Second World War, and living in relative prosperity in European or North American countries (Gilleard and Higgs, 2000, 2002). This generation shares the common values of freedom of opportunity and choice. Combined with a welfare state and period of economic growth, they are retiring in a culture of consumption and consumerism (Gilleard and Higgs, 2002). Culturally, this 'third age' is a rejection of 'agedness' (Higgs and Gilleard, 2014).

'The brighter the lights of the third age, the darker the shadows they cast over this underbelly of aging – the fourth age' (Gilleard and Higgs, 2013: 372); according to this theory, the fourth age exists in western societies as a fearful 'social imaginary'.[2] Frailty according to this fourth age social imaginary is a form of 'social death' signalled by entry into institutional living, and represents a loss of valued independence and freedom, termed 'ageing without agency' (Gilleard and Higgs, 2011; Higgs and Gilleard, 2014). Older people participate in this social imaginary by resisting frailty and the 'social imaginary' of the fourth age, for example, by emphasising the ways in which they are autonomous, thus not 'ageing without agency', even in the face of increasing physical frailty (Becker, 1994).

African conceptions of ageing and frailty

Anthropological work suggests that social old age in rural African communities is created when economic dependency due to physical limitations reduces one's productivity and ability to contribute to the family (Guillette, 1990). Observational and interview data from rural Botswana have described dependent and socially old or 'homebound' older people as returning to a 'childlike' state (Guillette, 1990). These older people were childlike in that they have given up all their household responsibilities, and were expected to 'receive and obey commands' (Guillette, 1990: 201). A revealing comparison was made between a child at play and the frail older person's attempts at busying themselves with small household works: 'In some countries, a sandbox is provided for the child. Similarly, the garden

plot is provided to the old Tswana woman. It appears that just as sandcastles are expected to disintegrate, so is the garden' (Guillette, 1990: 201).

In open-ended discussions with members of the Meru tribe in Kenya about the characteristics of old age, the majority of respondents described old age as a time of reduced labour outputs (Thomas, 1995). Fewer, but still more than half, mentioned physical characteristics, particularly relating to mobility: old age possessing the characteristics of walking slowly, for short distances and using a stick (Thomas, 1995). Traditionally, this community would have relied on 'age sets' (cohorts who would move through the social stages of the lifecourse together) with ritual ceremonies to mark the ageing and maturing process. These age sets previously controlled both reproductive and social power, enabling participation in particular community activities or elevation of status, *e.g.* the 'ruling elder' age set gained the responsibilities of socio-political decision making, which were given up after progressing to become a 'ritual elder' who held the rights to lead religious ceremonies and sacrifices (Thomas, 1995). Yet, the impacts of modernisation with its reliance on the cash economy led to a new valuing and emphasis on one's physical capabilities to work productively (Thomas, 1995).

Cattell conducted anthropological work focused on older Samia people in western Kenya, and wrote about ageing and its relationship work. Given the challenges of rural subsistence life, work was seen as vital in producing the social role of adulthood: 'A responsible adult is one who works hard and feeds others' (Cattell, 2002: 161). It was observed that 'work … validates an individual's personhood and place in family and community' while conversely 'old people don't work they just sit and eat' (Cattell, 2002: 161). According to the Samia, the frail old, who are no longer capable of self-reliance and the physical work this entails, should be cared for by their children, based on values of intergenerational reciprocity (Cattell, 1990). The image of a successful old age in this context was being able to 'sit and eat', of being able to rest and wait to be served by one's children. In this context, not being responsible for feeding others, and waiting to receive food, meant taking on a childlike social role. But, as Cattell remarked, this was idealised, rather than feared, as in the western fourth age social imaginary. The vision of physical frailty was 'of basking in the sun or sitting before a fire and waiting for food' (Cattell, 1990: 382).

In a grounded theory study of older people in Malawi, hard physical work was necessary for subsistence and survival, and was again discussed as a means of attaining the status of a socially valid 'adult' (Freeman, 2018). Additionally, this work was conceptualised as a form of care, given that work was not only for the individual's subsistence, but an act of care-taking for the family and wider community (Freeman, 2018). That is, care, through productive physical work for the subsistence of one's dependants, was what constituted a social 'adult'. Differing from Cattell's findings, older people resisted returning to a 'childlike' identity by emphasising their bodies' past productivity, and by doing as much as their bodies would allow them to do (Freeman, 2018). This finding echoes that of Becker (1994) in an investigation of older people with frailty in the United States of America, and is a common finding in HIC qualitative work, where the label of frailty is often rejected or resisted by older people (Grenier, 2006; Lloyd *et al.*, 2014; Warmoth *et al.*, 2016).

In summary, across the anthropological research of ageing in rural African settings, old age has often been separated into the active 'adult' aged and dependent 'childlike' aged. While it is implied that this dependency state represents frailty in old age, there has been little interrogation of the meaning and value placed on the physical changes seen in frailty. Using the frailty phenotype as a construct that has described some of the physical aspects of frailty, this study seeks to investigate the extent to which this construct is helpful in the cross-cultural study of ageing.

Methods

Field work was conducted in Hai District, Kilimanjaro region between 16 February and 5 August 2017. Focus group discussions and semi-structured interviews were conducted in Kiswahili with a Tanzanian colleague facilitating the interview (JK or JR). These were audio-recorded, transcribed and translated, taking care over the meanings lost, changed and produced during the translation process. While attention was paid to the role of language, discourse analysis was not chosen as an analytical approach because the focus of interest rested not on the detail of language practice, but rather on the idea that there was no positivist 'accurate' translation. Translation and subsequent data analysis and interpretation were co-constructed between the participant(s), researcher(s) and translator(s) (Brämberg and Dahlberg, 2013). Reflexive thematic analysis methods were used in the analysis of 30 transcripts (using NVivo Pro 11 software for processing) (Braun and Clarke, 2006). This particular form of thematic analysis proved appropriate owing to the importance of foregrounding and reflecting on the research team's 'outsider' status (Irvine *et al.*, 2008). The analysis process started with data familiarisation, which occurred during the data transcription and translation process. EGL systematically conducted initial coding for several interviews carried out in the first months of the study, and while living in Tanzania. This allowed for face-to-face meetings with transcript translators and Tanzanian research colleagues in order to discuss word choices and interpretation of participants' expressions, and in order to identify patterns within the codes and develop initial themes. These preliminary codes helped to inform the purposive selection of future participants. While coding and development of themes was conducted by EGL, refinement and review of themes was carried out through regular discussions with Tanzanian and United Kingdom (UK)-based colleagues, either in person or via email or video conferencing after EGL returned to the UK. Table 1 describes the participant characteristics by interview transcript, with the rationale for participant selection.

No formal participant observation methods were used, yet focus groups and semi-structured interviews were held over a period of six months, while EGL simultaneously participated in a quantitative survey investigating frailty, the methods of which are published elsewhere (Lewis *et al.*, 2018*a*, 2018*b*). The quantitative data collection involved visiting several hundred participants' homes, an experience which provided EGL with an awareness of patterns and norms in older people's living circumstances. Over a greater period of two years conducting research in the same region (studies investigating palliative care and delirium), EGL had developed a greater cross-cultural competence (Liamputtong, 2008), learning Kiswahili, and developing friendships and close working relationships with Tanzanian colleagues.

Table 1. Participant characteristics and rationale for selection

Interview participants and location	Interview date and duration	Rationale for participant selection	Participant characteristics (age, sex/ relationship, religious affiliation, highest educational attainment)
Seven ten-cell leaders; low-land village close to the region's main town	13 May 2017; 35 minutes	These ten-cell leaders volunteered to participate in a focus group after an announcement was made at a meeting for all the ten-cell leaders. These were self-selecting individuals with a particular interest in older people's welfare. Many took an interest because of their personal experience taking care of older relatives, *e.g.* their parents or parents-in-law.	• 67, man, Lutheran, completed primary school, tailor • 53, woman, Lutheran, completed secondary school, hamlet secretary • 61, woman, Catholic, completed primary school • 53, woman, Muslim, completed primary school • 60, man, Lutheran, completed primary school • 71, man, Lutheran, completed primary school, hamlet leader • 57, man, Muslim, completed primary school
Five ten-cell leaders; low-land village, held outside the village office	23 May 2017; 54 minutes	Low-land village, participants in this focus group were all self-selecting after a ten-cell leader meeting to cross-check the focused census of older people in the village. Most had personal experience of providing care for older people, and were interested in issues relating to older people.	• 35, man, Muslim, completed primary school • 57, man, Catholic, completed secondary school • 82, man, Catholic, some primary school • 48, woman, Muslim, completed primary school • 58, woman, Catholic, completed primary school
Six health committee members; low-land village close to the region's main town	10 June 2017; 1 hour 6 minutes	Six individuals each represented a hamlet of the village and were members of the village health committee. Some had received training and attended *ad hoc* seminars on topics such	• 62, woman, Muslim, completed primary school • 47, woman, Muslim, completed primary school

		as malnutrition or sanitation, while others had more personal experience to draw from, *e.g.* taking parents-in-law to hospital.	• 38, woman, Catholic, completed secondary school, security guard • 58, man, Muslim, some primary school • 43, man, Lutheran, completed primary school • 44, man, Catholic, completed secondary school, carpenter and small business owner
Older son whose mother has dementia; middle-zone village, interviewed at his home where his mother also lived	13 June 2017; 46 minutes	This participant was purposively selected in order to investigate the conceptualisation of frailty in dementia.	• 66, son, Lutheran, completed primary school, clerk at hessian bag company
Five ten-cell leaders; middle-zone village held at the village office	13 June 2017; 58 minutes	This middle-zone village is close to an urban centre. Many of these ten-cell leaders volunteered because of their personal experiences of caring for older relatives. One older man had looked after his grandparents as a young boy of 12 years, while another was caring for their parents currently.	• 55, woman, Lutheran, some secondary school, nursery school assistant • 65, man, Catholic, no formal education • 48, man, Muslim, completed primary school • 65, man, Catholic, completed primary school • 36, man, Lutheran, completed primary school, eight years as a ten-cell leader (interviewed twice, also a health committee member)
Four health committee members; low-land village	3 July 2017; 1 hour 7 minutes	The health committee for this low-land village was large, so split into two focus groups. All members had attended at least one seminar delivered at the district hospital. Topics included family planning, child and maternal health, sanitation and hygiene, 'children living marginal lives' and promotion of the	• 68, man, Catholic, some primary school, health committee member since 1983 • 63, woman Catholic, completed primary school, hamlet leader with 17 years' experience

(*Continued*)

Table 1. (*Continued.*)

Interview participants and location	Interview date and duration	Rationale for participant selection	Participant characteristics (age, sex/ relationship, religious affiliation, highest educational attainment)
		'community health fund' and health-care exemption scheme for older adults. This committee seemed more established and informed than most, but their activities were still all on a voluntary basis, *e.g.* one member described how they had gone house-to-house in their hamlet encouraging people to build good-quality latrines and encouraging hand washing.	• 46, man, Catholic, completed primary school, volunteers to check the drugs arriving at the dispensary • 47, woman, Catholic, completed primary school
Four health committee members; low-land village	3 July 2017; 1 hour 7 minutes	In order to facilitate discussion and better participation by all members, the health committee was interviewed in two smaller groups. Seminars delivered by the district health committee at the local district hospital were funded variously by the government, or by research projects and charities. Most followed topics of traditional public health interest, *e.g.* child and maternal health, and sanitation. Several of the hamlet leaders had been involved in signing forms or letters to allow older people's health-care costs to be waived at the dispensary or district hospital.	• 48, woman, Catholic, completed primary school • 51, woman, Muslim, completed primary school • 55, man, Muslim, completed secondary school, hamlet leader • 62, man, Catholic, completed primary school, hamlet leader
An older married couple; low-land village	3 July 2017; 38 minutes	This older couple were selected because they were less physically frail and were reliant on subsistence farming. They had ten children who also sent remittances to help them.	• 74, husband, Catholic, some primary school, cook at a chapel • 70, wife, Catholic, no formal education, subsistence farming
	4 July 2017; 1 hour 8 minutes	This health committee focus group included the village executive officer, a government	• 54, woman, Muslim, completed secondary school

Four health committee members; middle-zone village, held at the village office		employee for over 20 years who had been involved in organising school vaccination schedules and health clinics.	• 59, man, Catholic, completed primary school, brick layer • 60, woman, Lutheran, some primary school • 29, man, Lutheran, some primary school, truck driver
Father and daughter-in-law; middle-zone village, the father's compound	4 July 2017; 38 minutes	This participant was chosen in order to investigate the experience of being an older widowed man. Unusually, he had received the certificate of exemption from paying for health care for the over sixties, however, he told us they had been unable to access free health care in reality, and they had been forced to pay for his wife's health-care costs in her final illness.	• 93, father, Lutheran, some primary school, subsistence farming • 48, daughter-in-law, Lutheran, completed primary school, subsistence farming
Father and son; middle-zone village, the son's compound	4 July 2017; 42 minutes	These participants were selected because the enumerator had heard that there were concerns that the father was being neglected by the son and his family.	• 80, father, Lutheran, no formal education, subsistence farming and cattle herding • 40, son, Lutheran, completed primary school, motorbike taxi driver
Six members of the village health committee; high-land village with commercial flower farm and members of a coffee co-operative	5 July 2017; 1 hour 2 minutes	This high-land village health committee was held at a dispensary that was used as a hub by the quantitative side of the project. This focus group helped to build relationships with the dispensary staff and with community volunteers. These participants had all attended a seminar promoting membership of the Community Health Fund, a government scheme for affordable health insurance from 30,000Tsh (US $13 based on August 2020 exchange rates) per year.	• 51, woman, Lutheran, completed primary school, • 70, man, Lutheran, completed primary school, attended seminar about latrine building • 69, man, Lutheran, completed primary school • 40, woman, Catholic, higher education certificate • 67, woman, Lutheran, completed primary school • 67, woman, Lutheran, some primary school, small business owner

(*Continued*)

Table 1. (*Continued.*)

Interview participants and location	Interview date and duration	Rationale for participant selection	Participant characteristics (age, sex/ relationship, religious affiliation, highest educational attainment)
Mother (widowed) and youngest daughter; high-land village	5 July 2017; 32 minutes	These participants were selected as an example of an older mother being cared for; she was widowed and was being looked after by her youngest daughter.	• 75, mother, Lutheran, some primary school • 47, daughter, Lutheran, completed primary school
Older married couple living with frailty; high-land village	5 July 2017; 39 minutes	The couple was selected largely out of convenience, given that the village enumerator thought they would be found at home easily, and they were close to the village dispensary.	• 75, wife, Lutheran, some primary school, subsistence farming • 82, husband, Lutheran, some primary school, subsistence farming
Six health committee members; low-land village, focus group held in the local dispensary building	13 July 2017; 1 hour 18 minutes	The health committee was volunteers who met regularly and carried out advocacy work for older people. One of the participants of this discussion was a person of status at the dispensary, therefore participants may not have felt freely able to criticise the local health-care services.	• 46, man, Lutheran, completed primary school, hamlet leader and church leader • 27, man, Lutheran, completed college • 48, woman, Muslim, completed primary school • 56, man, Christian, some primary school • 61, man, Catholic, completed secondary school • 65, man, Muslim, completed primary school
Older couple and their daughter-in-law; low-land village	13 July 2017; 33 minutes	This older couple were selected because of living within a multi-generational Masaai *boma* (a traditional Masaai housing arrangement which includes a cattle enclosure).	• 81, husband, Lutheran, no formal education • 74, wife, Lutheran, no formal education • 39, daughter-in-law, Lutheran, completed primary school

Six ten-cell leaders; low-land village with more reliance on cattle-rearing, focus group held in a participant's yard	14 July 2017; 1 hour 14 minutes	The enumerator for the village organised a meeting away from the village dispensary to ensure participants could speak more freely and critically about the local health-care provision for older people.	• 64, man, Catholic, completed primary school • 50, woman, Lutheran, completed primary school • 54, man, Lutheran, completed primary school • 66, man, Lutheran, some primary school • 36, man, Catholic, completed primary school • 50, man, Lutheran, no formal education
Older Muslim couple interviewed in their compound; low-land village, close to the Mosque	14 July 2017; 43 minutes	These participants were selected because they were known (to the village enumerator) to be struggling financially.	• 87, husband, Muslim, Islamic madrasa • 76, wife, Muslim, some primary school
Older widow interviewed alone in her home; low-land village	21 July 2017; 42 minutes	This participant was purposively selected as an older woman who was financially independent.	• 60, woman, Muslim, some primary school, small business owner
Older single woman; low-land village	21 July 2017; 38 minutes	This individual was selected because the enumerator told us she was facing accusations of witchcraft from members of their village.	• 90s, widow, Lutheran, no formal education, traditional birth attendant
Five health committee members; low-land village	28 July 2017; 1 hour 17 minutes	One participant was a government employee at the village dispensary, the others all volunteered and were interested in the welfare and health of their community.	• 36, woman, Lutheran, completed primary school • 68, woman, Catholic, completed primary school, sells medicines in a shop • 58, man, Lutheran, completed secondary school, works in construction • 60, woman, Assemblies of God, completed primary school

(*Continued*)

Table 1. (*Continued.*)

Interview participants and location	Interview date and duration	Rationale for participant selection	Participant characteristics (age, sex/ relationship, religious affiliation, highest educational attainment)
			• 26, woman, Lutheran, diploma in higher education
Grandfather and grandson; low-land village	28 July 2017; 41 minutes	These participants were selected because this was a 'skipped generation' household where the grandchild was orphaned.	• Age unknown, grandfather, Catholic, some primary school, labourer • 39, grandson, Catholic, completed primary school, subsistence farming
Mother and daughter-in-law; low-land village	28 July 2017; 32 minutes	These participants were selected for convenience as the family were well known to the village enumerator.	• Age unknown, mother, Catholic, no formal education, subsistence farming • 55, daughter, Lutheran, completed primary school, small business and subsistence farming
Four ten-cell leaders; low-land village	29 July 2017; 1 hour 23 minutes	Self-selecting ten-cell leaders that volunteered to participate. One ten-cell leader stated that his interest had come about due to being involved in setting up a group to help organise burials for the destitute.	• 59, man, Catholic, completed primary school • 62, man, Muslim, some secondary school, village secretary and small shop owner • 54, woman, Muslim, completed primary school • 60, man, Catholic, completed primary school
Mother and daughter; high-land village	1 August 2017; 32 minutes	These participants were selected based on the grandmother's extreme old age, in order to explore how this was viewed and experienced. The older mother was widowed, her husband's	• 62, daughter, Catholic, some primary school, coffee and subsistence farming

		grave in the garden stated that he was born in 1908. She alleged they were both born in the same year. Her daughter was divorced and moved back to the family home to take care and farm the family *shamba*.	• 109, mother, Catholic, some primary school, coffee farmer
Four health committee members; high-land village with a commercial coffee farm	4 August 2017; 1 hour 3 minutes	This focus group included the village chairman, and a health attendant at the village dispensary. It was picking season, so it was difficult to recruit ten-cell leaders to participate when we were only offering to cover travel expenses. A committee member told us she chose to participate because she wanted to represent their village where there was no TASAF and poor implementation of the health-care exemption for adults over 60 years.	• 62, man, Catholic, completed primary school • 67, man, Catholic, completed primary school, 16 years' experience as a health committee member • 59, woman, Muslim, completed primary school • 59, man, Catholic, completed primary school
Mother and daughter-in-law; high-land village	5 August 2017; 40 minutes	This couple were selected because they were known to the enumerator as a family with an older immobile and frail family member. The older mother was paralysed on one side following a stroke in 2004, but interestingly did not consider herself to be living with frailty as she did not otherwise feel unwell and felt well cared-for. Her oldest son married and stayed to work on the family plot, thus inheriting the house and land and ensuring his older mother was looked after.	• 85, mother-in-law, Catholic, no formal education, coffee farmer • 40, daughter-in-law, Catholic, no formal education, subsistence farming
Widowed man living alone; high-land village	11 August 2017; 29 minutes	This participant was selected after visiting him at home in order to conduct screening for the simultaneous quantitative survey. He came from outside the village and was living in very poor circumstances with a little *ad hoc* care provided by neighbours.	• 95, man, Catholic, no formal education, labourer

(*Continued*)

Table 1. (*Continued.*)

Interview participants and location	Interview date and duration	Rationale for participant selection	Participant characteristics (age, sex/ relationship, religious affiliation, highest educational attainment)
A couple where the husband was living with frailty; low-land village	14 August 2017; 1 hour 13 minutes	This couple was selected because they were identified from the quantitative survey as being older people living with HIV. The region has a relatively low HIV prevalence, however, ageing with HIV infection is becoming more common due to the success of antiretroviral therapy, so the experience of living with both frailty and HIV was of interest.	• 45, woman, Lutheran, completed primary school • 63, man, Lutheran, completed secondary school, retired accountant
Mother and daughter-in-law; low-land village	14 August 2017; 39 minutes	These participants were purposively selected to explore how dementia impacted on the experience and understanding of frailty. The older mother was identified as having probable dementia from the quantitative survey results.	• 55, daughter-in-law, Lutheran, completed primary school • 93, mother-in-law, Lutheran, no formal education, subsistence farming and herding

Note: TASAF: Tanzania Social Action Fund.

Setting and background

Demographic and historical context

The youngest of this study's participants was born in the few years leading up to Tanganyikan independence from British colonial rule in 1961, the unification with Zanzibar and the formation of the United Republic of Tanzania in 1962. However, many of the older participants will be old enough to remember these events, having lived their young adulthood during this period. The first president of Tanzania, Julius Nyerere, was leader from this time until 1985 and his ideas have strongly influenced contemporary Tanzanian identity and values, particularly in rural areas. He is still referred to fondly, particularly by older adults as *Baba wa Taifa* (Father of the Nation) and *Mwalimu* (Teacher).

Nyerere placed rural development at the heart of his policies and ideologies (Brown and Brown, 1995). The *Ujamaa*[3] 'villagisation' policy was Nyerere's attempt to combine the benefits of modern technology for improving agricultural scale and efficiency, with African traditional society (Komba, 1995). Nyerere expressed the view that Africans, by tradition, had been socialists; conceptualising this *Ujamaa* socialist rural development as a process coming from the community's initiative, with external modernising assistance, but essentially led by a self-determining and co-operating community. In spite of the ultimate failure of Nyerere's *Ujamaa* scheme, co-operatives have not died out in rural villages, and the ethos of communal self-help is still important (Komba, 1995).

National and local population characteristics

Tanzania is categorised as a low-income country by the World Bank, and is also in the low human development group (ranked 154th from 189 countries) (United Nations Development Programme (UNDP), 2018). Despite a growing economy in gross domestic product terms, this has not translated into better living standards for the majority of Tanzanians (UNDP, 2015). For example, just 16.9 per cent of the majority rural population have access to electricity, and only half of Tanzanians use improved drinking water sources (UNDP, 2018). Rural Kilimanjaro region is wealthier compared with the majority of Tanzania. Much of this wealth is due to tourism to Mount Kilimanjaro and the national parks, and the good conditions for agriculture (the major commercial crops being coffee, maize and sunflower). The majority of residents farm small family-owned plots, termed *shamba*, for subsistence, with any excess sold at local markets. Farming techniques are largely manual and physically demanding, with tractors and harvesters seasonally hired by some. Social pension coverage is low for adults aged over 65 in Tanzania, with a minority of 3 per cent of the population receiving a contributory pension (HelpAge International, 2016). For the poorest households, which are identified locally through public meetings, a cash transfer scheme exists (Tanzania Social Action Fund, 2020). Otherwise, older people live in a state of precarious income, reliant on informal family financial support once their ability to subsist independently has diminished.

The local rural organisational systems

The population of Hai District, in the Kilimanjaro region, spans 17 wards and 80 villages, distributed across high-, middle- and lower-altitude zones. These villages

are separated administratively into hamlets, which in turn are broken into groups of ten households, or 'cells'. Each ten-cell has an appointed leader, a person chosen by those residents to represent them at village meetings. In the absence of road names, house numbers or post-codes, the ten-cell leader forms a means of locating an individual within the village, as well as a point of contact. These ten-cell leaders are co-ordinated by the hamlet leader, who is under the authority of the village chairman and secretary, both government employees working at village offices, and who lead each village committee. Official communications between the government and village members occur via these appointed representatives. These systems of organisation were put in place shortly after Tanzanian independence as a means of the ruling party maintaining control and communication with the largely rural and illiterate population (Finucane, 1974). The village committees, consisting of around 25 people, select individuals to form sub-committees for health, education, economics, security and infrastructure development (Ingle, 1972).

Ethics

The study was submitted for ethical approval and was approved by Newcastle University Research Ethics Committee, as well as by the Kilimanjaro Christian Medical University College Research Ethics and Review Committee based at the nearest teaching hospital Kilimanjaro Christian Medical Centre, and The National Research Ethics committee for Tanzania, based at the National Institute for Medical Research, Dar es Salaam. Participants were informed about the study objectives and the interview process was explained. Written informed consent was gained in order to conduct and audio-record the interviews. Participants understood that they could refuse to answer any questions or withdraw from the interview at any time. In order not to exclude those with cognitive impairment from participating, written assent was taken, on behalf of the older person, by a close relative. The consent form was read aloud for those who were unable to read, and those who were unable to write their signature were permitted to give a thumbprint instead. This was particularly important as quantitative research in this population demonstrated around a third were illiterate (Lewis *et al.*, 2018*a*). Pseudonyms have been used throughout this article, and detailed place or participant-identifying information has been removed or changed to protect the anonymity of participants. Participants were compensated for their time if visited at home, or reimbursed for transport costs if required to travel to a meeting point to participate. Reimbursements were proportionate and would not have unduly influenced participants' decision to participate. Gifts of sugar or clothes-washing soap (worth around US $2) or cash in an envelope (up to US $3) were given after the interview was completed.

Selection of interviewees

Participants were selected from eight villages that were randomly selected to participate in a broader study estimating the community prevalence of frailty (Lewis *et al.*, 2018*b*). Participants were chosen by a combination of purposive and convenience sampling. The study aimed to include a range of participants and experiences of

living with frailty, but there was also a need to be pragmatic, sometimes taking opportunities as they arose (*e.g.* interviewee selection might have been limited by transport difficulties in reaching some of the more remote high-land villages, particularly during the rainy season). Participants were not selected based on their chronological age, instead the research team took account of participants' status socially. Usually, this meant the selection of older people who were referred to as grandparents using the prefixes *babu/bibi* (grandfather/grandmother) or *mzee* (respectful title for an older man). The research team's curiosity led to the selection of participants with varied experiences of ageing and living with frailty, such as older people living with HIV infection, or being widowed, rather than any sampling framework (*see* Table 1). Sampling was complete when data saturation was reached, whereby no new themes were being generated (Hennink, 2017). A total of 97 individuals, from 13 focus groups and 17 semi-structured interviews, had been included in interviews when data collection was deemed complete. A village enumerator (a trusted senior member of the village health committee) with detailed knowledge of their community, worked closely with the research team and, as field work progressed, was able to help identify interviewees based on their known characteristics or care arrangements.

Cross-cultural and cross-language interviews

There is no direct translation for frailty in Kiswahili. It was often translated as *udhaifu wa wazee*, literally meaning 'the weakness of the elderly'. Taking this translation into account, it is understandable that frailty was often described as a lack of energy, strength or power. To avoid tautology of meaning, we asked broad questions such as 'What do you hope for in your old age?' and 'What are the challenges older people face?', which allowed us to approach the topic of frailty in a more nuanced, indirect manner (*see* Appendix I in the online supplementary material). Another useful interview technique employed included the use of a co-produced 'real-life' vignette describing a fictionalised older individual living with frailty (as defined by the frailty phenotype) in the rural African context (*see* Appendix II in the online supplementary material). The vignette was read aloud to interviewees, and was used to stimulate discussion and reflection. This is a method used to develop rapport quickly, focus engagement and facilitate the development of an 'insider' status for the researcher (Sampson and Johannessen, 2019).

Analysis process

Great care was taken to represent the spoken Kiswahili data authentically, acknowledging that the multiple stages of translation and interpretation led to a co-production of these data (Brämberg and Dahlberg, 2013). The Tanzanian interview facilitator and Tanzanian transcriber/translator were not taken to be 'neutral conveyors', but rather contributors to a probing and interpretation of the expressed meaning (Temple and Edwards, 2016). Instead of aiming for a 'correct' or 'verbatim' translation, the research team strove for authenticity and credibility of voice. Coding of data in Kiswahili prevented a paraphrasing or summarising of participants' words into sanitised or academic versions, and has provided a richness to

the analysis, and depth of meaning (*see* the Notes). Some of the agreed translations have led to use of potentially stigmatising terms, *e.g.* the use of 'elderly'. In this instance, this translation was kept because the term was felt not to hold the same negative associations; 'elderly', in its relation to an 'elder', is a term that implies some degree of respect and authority in this context.

The analysis process was initiated during data collection, however, given that the process of transcription and translation for each transcript took several weeks and many meetings between the research team and translator, this limited the ability to analyse data concurrently. Field notes were kept by EGL, particularly after enlightening discussions with Tanzanian colleagues or on reflecting after conducting an interview. Notes were also made during the translation process, when meaning was clarified in the translation process, or where the interpretation was ambiguous or contested (an example of an annotated transcript has been provided in the online supplementary material). The identification and selection of quotes happened as part of the analytical process described. Key excerpts were highlighted as theme titles, and further quotes were selected as being representative of a broad range of participants, or due to being particularly illustrative or impactful expressions of the theme. Participants have been given pseudonyms to provide anonymity and also to represent their relational and social identities, *e.g. babu/bibi* (grandfather/grandmother) or *mzee* (respectful title for an older man). This emphasising of grandparenthood and performance of respect was necessary in order to gain the confidence and trust of older participants.

Reflexivity

The Tanzanian research colleagues, JK and JR, both assisted in participant selection, communicated with the village enumerators, worked as interview facilitators and interpreters, and contributed to translation of transcripts. They are both relative 'insiders' in that they are both local, belonging to the region's dominant ethnic and religious groups, and are fluent in Kiswahili as well as other local languages. Yet they are also likely to have been seen as representatives of the region's teaching hospital, thus belonging to a higher socio-economic class and a different professional and academic world to that of the study's participants. JR has an BSc in Nursing, an MSc in Epidemiology and Applied Biostatistics, and has completed a PhD using qualitative methods investigating gender-based violence and reproductive health. A retired clinical officer, JK has worked clinically in the local district government hospital, and is well known and respected locally. He has decades of experience of working closely on qualitative and quantitative research projects with UK-based researchers within Hai District. Both colleagues completed a reflexive questionnaire after completion of the field work. This revealed that despite their relative high status, wealth and educational attainment, they considered that they had been well received, and felt that participants were able to talk with them openly.

The first author and lead in the research project (EGL) is a medical doctor, training in older people's medicine in England. Therefore, the author's initial relationship to the research topic was from a positivist biomedical stance. Being a white, British doctor and researcher meant that EGL was an 'outsider' to the research participants and their context (Irvine *et al.*, 2008). These identities

produced a position of privilege and ease of access to the research field and participants overall. Yet, as a younger woman working within a more overtly patriarchal environment, the author relied on a senior male Tanzanian colleague (JK) to gain access to interview older men of authority, *e.g.* village chairmen. These identities are also likely to have been associated with British colonial rule, particularly for older research participants. Working with this legacy of British colonialism may have led to a greater imbalance of power in the researcher–participant relationship, the implications of which have been discussed later.

Results

Five themes were identified from these interview data that describe the conceptualisation of frailty in old age. Each theme will be presented alongside descriptive and contextual background, with notes where required for detail regarding the translation.

'Nguvu zimepungua au zimeisha': the strength is reduced or used up

When discussing the oldest old in the community, those living with frailty were described as having decreased strength or power. While there may have been some circularity of meaning, this younger ten-cell leader, Mzee Godfrey, described his understanding of frailty based on his knowledge of the older people he knew in his locality. In the manner of communal self-help still apparent in Hai District, he told us he helped to identify those 'without strength' who were not able to afford their health care. Particularly, he explained that there was an older person in his hamlet who was in urgent need of health care, so he had made announcements at the hamlet meetings to raise funds for them to receive hospital care. The loss of strength was not always strictly physical. Rather, it was often implied that frailty consisted of both physical weakening and a loss of financial power, both being intimately associated in this context. Mzee Godfrey revealed that those 'without strength' in the village are older people who cannot afford a single meal, so he donates food to them (maize flour and vegetables):

> Elders like elders, for sure to raise[4] them, the focus should be to address their health issues, and if possible the government should set aside a portion. Because the elderly especially those in the villages … about money really it's a disturbance. Death is resulting from elders not having food. That's it. (Mzee Godfrey, 36 years, subsistence farmer, 13 June 2017)

Bibi Abraham was found sitting on her sofa with well-worn foam cushions, in a small dark living room, the walls of which were decorated with newspapers. She identified with the concept of frailty, explaining that having raised seven children she could now *kutulia ndani*[5] (settle down inside). Indeed, bearing children was used to explain how she had used up her strength. It was generally understood to lead to increased frailty in women as compared with older men. Bibi Abraham explained this in the following excerpt of discussion with Tanzanian researcher JR. In summary, where one's power and strength was thought to reside

in the body's blood, the loss of one's 'life blood' during multiple childbirths understandably led to increased frailty in women later in their lives.

Bibi Abraham:	Yes, by then she is powerless. As you know between a man and a woman, it's very different us mothers we must get tired.
JR:	Why do you think women get tired easily as compared to men?
Bibi Abraham:	(laughing) I don't know, maybe my advice is childbirth, you give birth.
JR:	Anhaa maybe because of giving birth, it's the reason as why they get tired?
Bibi Abraham:	Yes, it is because they reduce their blood. (Age unknown, 28 July 2017)

Bibi Abraham, despite not knowing her chronological age, was defined socially as being frail. She and her daughter acknowledged it, as well as members of her village community, including the village enumerator. Through the efforts of her body in bearing and raising seven children she had lost her strength and reached the age of 'settling down inside' and being cared for by her last-born daughter. That is, her physical state in old age was testament to her reproductive and productive adult life of working to feed, clothe and educate her children, and her role as she saw it was to rest and take her turn to be 'raised'.

'Mwili umechoka': the body has become tired

The body becoming tired was an integral component of the description of physical frailty, in addition to the reduction of strength. In order to understand the meaning attributed to the tiring of the body, one must appreciate the importance of the body to an older Tanzanian. In the context of rural subsistence farming using manual techniques, a person's body was foremost a tool for working, and its capital was production on the farm. The experience of the body tiring, and its capabilities for manual work becoming reduced, was key to many individuals' understanding of the problem of 'the weakness of the elderly' or frailty. Babu Obadia lived with his wife, who due to back pain and palpitations could not do any of her usual manual tasks, even lighter tasks such as 'cutting [grass] for' feeding the cattle. A grandchild stayed in their home overnight, and was relied on to help with running errands to the market or helping with household chores. Describing the body as being too tired to work at all, Bibi Ndumaeli spent most of her day resting or sleeping, her daughter-in-law checking on her and waking her up twice daily in order to make sure she had eaten. Her husband, Babu Obadia, said their life was hard ('*maisha magumu!*'), an expression of deep frustration and dissatisfaction, that despite having reached their old age, they were not able to rest and receive care as expected. Babu Obadia struggled to cultivate enough food for themselves because of his fatigue:

> For sure tiredness, it comes from being tired, when I work, I just work for two hours or just one hour, then I come to rest, being tired is in front of it … When I wake up in the morning I pray to God first so as He can give me strength to work. (Babu Obadia, 82 years, subsistence farmer, 5 July 2017)

Babu Shuma, an 87-year-old cattle herder, was also no longer able to work due to being blind and suffering severe joint pains. Despite boasting of his 22 grandchildren and 12 great-grandchildren, he was distressed by his current state of poverty and daily struggle with hunger. He relied on his wife, who was fitter and in her seventies, to provide food for him due to his fatigue, but was ashamed that their house had developed a large crack in one of the walls which he could not fix, a task usually undertaken by men:

> The body is starting to tire mother, especially these heels are painful, these muscles are painful (showing his ribs) … They are tired not because of pulling them … they are tiring, that's it they are weakening. You become like a child you wish to crawl, the body hasn't got much strength. (Babu Shuma, 87 years, 14 July 2017)

This vivid description uses the metaphor of becoming childlike in one's physicality. However, the problematic aspect of developing this extent of physical exhaustion was having to be financially dependent on others. Indeed, such was the poverty of Babu Shuma and his wife, Bibi Zakia, that they were often forced to beg from neighbours, or to receive donations from the local mosque. In both of these older couples, the less-frail partner shouldered the responsibility of providing the majority of the couple's daily sustenance, despite their own increasing fatigue and physical frailty. Both couples also received government cash transfers (from the Tanzania Social Action Fund, known as TASAF), meaning that they had been identified locally as being among the poorest households in their villages (Tanzania Social Action Fund, 2020).

> Yeah, it's just like that, I tire but I go out to search and search[6] and bring [something] to him [her husband], if we all get tired and we all stay sitting what will we do now?! (Bibi Zakia, 70 years, 14 July 2017)

As Bibi Zakia expresses, the struggle against physical fatigue is a struggle for survival and was not a matter of choice, the donations and TASAF cash transfer being insufficient.

'Miguu haitembei': the legs don't walk

Having difficulty walking was particularly troubling considering that walking was the main form of transport for the majority of the study's participants. In fact, almost all daily activities involved walking: 'Cutting [grass] for' feeding cattle, fetching water, collecting firewood, herding cattle, ploughing or digging using a hoe, going to the market to sell or buy food, and going to places of worship, all required walking. This illustrative quotation, shows how a difficulty walking stopped Bibi Felista from participating in community activities:

> Because of the legs I cannot. The legs are refusing. To want, I want, I want even to go church, I want to go but I fail because of the legs. (Bibi Felista, 93 years, 5 July 2017)

Bibi Felista was found sat outside on her porch sorting through dried beans. This was one of the few household tasks that she could still help with. Her family advised

her against cooking in case smoke from the fire harmed her poor eyesight, and she walked slowly and painfully only short distances holding with both hands on to a long stick, so could not usefully help with any other tasks. The usefulness of this task should not be overstated, given that this activity was more akin to the sandbox analogy described by Guillette (1990). Her home was on a steep incline in an upland village of Hai District, and in the rainy season the uneven ground became slippery with mud, adding to her difficulty. Despite these many environmental limitations, the social impact of Bibi Felista's immobility was one of the biggest indicators of her frailty, particularly, not being able to greet neighbours or meet with the community at church meant that she was seen as an *mgonjwa* (a patient or an invalid), and her social interactions were reduced to her daughter's company and the odd visit from a neighbour or church member.

'Kwa sababu ya kukosa lishe na chakula bora': because of missing food and good nutrition

Participants described in stark terms how frailty could be caused by subsisting on one meal per day, or too often going hungry. This 64-year-old ten-cell leader, Mzee Mrema, when asked whether frailty was an expected part of old age, responded:

> It [frailty] is not normal for all elders, because when you are in old age and you only get one meal per day, you become twice older unexpectedly! (Mzee Mrema, 14 July 2017)

Thus, this form of frailty, caused by going hungry and skipping meals, caused a sudden and aberrant form of ageing and frailty. Mzee Mrema, who had held various leadership roles in the village since 1983, had witnessed this form of frailty all too often.

There was also an acknowledgement that a lack of variety and fruits and vegetables in the diet could contribute to frailty, with the poorest and most frail among participants living on a monotonous diet of the staple carbohydrate *ugali* (a stiff porridge) and beans. For Baba Thomas, nutrition and weight loss held important significance: as a person living with HIV, he was concerned that he needed a balanced and nutritious diet in order to survive, expressing how difficult it was to take his antiretroviral medication on an empty stomach. Baba Thomas admitted that his body 'had reduced' because of not getting the right foods, this was a source of stigma for himself and his wife:

> Altogether it's hard to have food, because for a whole month we might only eat *ugali* [stiff porridge] and green vegetables or maybe beans if we have them on that day, but the most important thing is the medicine. (Baba Thomas, 63 years, retired accountant, 14 August 2017)

In the following quotation, Babu Materu cared for or 'raised' by his daughter-in-law, describes becoming frail due to being unable to chew foods properly. This was a common problem due to edentulism.

JK: Now it is just old age bringing you frailty?
Babu Materu: It is old age, and for example these foods here are useless, useless, for example teeth, look here I haven't any! So to chew and chew I cannot! Yes it brings me to reduce myself.[7] (93 years, widower, 4 July 2017)

While the detail of individuals' concerns and experiences differed, all participants reported a connection between physical frailty and undernutrition, highlighting how these inequities may be leading to inequalities in frailty between LMICs and HICs.

'Watoto wako safirini basi anadhoofika': your children are away then you become frail

A lack of family material support, comfort and company often led to older people feeling frail. Bibi Eliaika (109 years) lived with her last-born daughter Mama Kilala, who had returned to the family home after her divorce, but missed the 'close' care of her other children who were travelling.[8] Mama Kilala described her mother's frailty in this way:

JR: Do you think grandmother has become frail?
Mama Kilala: Yes, she has become frail, there is a time if she remembers something, for example perhaps the day her children are travelling then she is weakened and becomes a wretched, wretched person.[9] Or if she wants money and she doesn't have any money in her *kanga*[10] she becomes frail, she says, 'see how I have become so poor I have run out of it this way?' (62 years, subsistence farmer, 1 August 2017)

Mawazo (too many thoughts) has been described as a 'cultural concept of distress' commonly expressed in studies with African participants (Kaiser *et al.*, 2015). The idiom may have some overlap with depression or anxiety, however, the expression does not fit within the narrow categorisations of psychiatric symptoms and diagnoses developed in western HICs. In the following example, it may reflect a suffering associated with the struggle to accept socio-cultural changes, such as the urban migration of adult children. In a review of the idiom, the sequalae of 'thinking too much' were broad, including memory loss, tiredness, exhaustion and weakness (Kaiser *et al.*, 2015). These data suggest that frailty (both psychological and physical) may also be a consequence:

> Yes indeed … you may have thoughts that make you a fool[11] even frail in the body. Due to the things you think about today, the thoughts of today are like what to eat, what the children will eat, or those elders? When an elder sleeps there, thinking 'ooh my children, I was the one who helped you but right now I am tired and what do I have of any such kind?' It's frailty. (Mzee Martin, 65 years, subsistence famer, 13 June 2017)

According to both of these quotations, the frailty brought about by the urban migration of adult children was brought about by material scarcity; from their descriptions of distress at finding they have no money left, or lying awake worrying about their next meal. Whether due to deliberate neglect, or due to the struggle of balancing minimal resources of finances or time, this theme describes a tension which has been felt across a modernising and rapidly changing continent (Aboderin, 2004; Van der Geest, 2018). Yet, this felt lack of care led to an almost existential suffering for older people. Existential, because it caused older people to question the value and purpose of their life's work if it was not acknowledged through the expected reciprocal care of their children.

Discussion

Frailty, when conceptualised as a phenotype, is defined as the presence of three physical attributes from five objectively defined measurements. The phenotype is underpinned by the theoretical framework, the 'cycle of frailty', whereby the frail older person, through a combination of chronic undernutrition and disease, expends less energy, feels fatigued, loses skeletal muscle and, in a cyclical, deteriorating manner, develops worsening frailty, which leads to disability and death (Fried *et al.*, 2001). A cross-cultural comparison of these data reveals that the Tanzanian understanding of frailty in ageing largely naturalised these physical changes but problematised the community and societal response to these changes. Each of the physical attributes described by the frailty phenotype construct will now be discussed in turn with reference to these findings and the wider literature.

Weakness

These data describe a progressive process of the body weakening. Brigit Obrist, in researching the place of care for older people in coastal Tanzania, has considered physical frailty in old age (Obrist, 2018). Frail participants were defined as those who described themselves as '*sina nguvu*' ('I don't have strength'). The author described this as a 'health condition marked by a series of critical moments due to old age, illness and injury, leaving the older men and women frail and no longer able to perform their gendered routines' (Obrist, 2018: 98). While corroborated by Obrist's work, this study found a subtle but important difference. Conveyed in participants' expressions, the lack of strength associated with frailty was described as being gradually depleted, or expended throughout one's life, so that it is used up and finished by old age. Fried's metaphor of a downwards spiral of frailty was therefore less helpful an analogy, as compared to Freeman's work with older Malawians in Balaka. Freeman describes how Malawians thought of body fluids as containing a 'life force' or energy, so that the body's energy may be referred to as 'blood'. The lifecourse was explained as a 'linear trajectory of diminishing blood (power/strength) until death' (Freeman, 2018: 119). The same explanation for frailty was used by many in this study to explain the gender difference in frailty. Indeed, because of this conceptualisation, becoming frail was understood to be a natural and necessary part of the lifecourse. The weakness of the older body (especially

the older female body) was viewed as a consequence of, and as evidence of one's work and contribution to one's family in earlier life.

The Tanzanian (and Malawian) allegory of frailty as a linear decline might be viewed as similar to the deficit accumulation model of frailty in western biomedicine, producing the frailty index (Rockwood and Mitnitski, 2007). As mentioned in the Introduction, this model for frailty describes the process of ageing as one of gradually accumulating 'deficits'. However, the emphasis is very different in these data. An older person's gradual physical decline was not due to a build-up of potentially avoidable 'deficits', and something to be averted by promoting and optimising one's health and activity; rather, the linear decline was an understandable consequence of having spent one's finite energies in the work of raising children and contributing to one's community as an active adult. The cyclical decline theorised by Fried was not evoked by any participants despite each of the physical attributes of the phenotype being discussed.

Exhaustion and reduced physical activity

Exhaustion, according to Fried's frailty phenotype, was measured by self-report using questions taken from the Center for Epidemiological Studies Depression Scale (CES-D) (Orme *et al.*, 1986).[12] In these data, accepting exhaustion was not an option for many older people who were forced by necessity to continue to work or indeed beg for food, regardless of how they felt. We have previously discussed how the 'exhaustion' questions may have been misinterpreted by participants in the quantitative aspect of this study, due to cultural differences (Lewis *et al.*, 2018*a*). These findings suggest that asking '*Mwili umechoka?*' ('Has the body become tired?') would have been better understood in this setting.

As discussed in the Introduction, frailty was characterised by a reduction or ending of the productive 'adult' social role. An associated social and cultural devaluation of a person has been discussed in the context of disability, and its erosion of a person's adult social role in a study of adults living with disability due to polio (Luborsky, 1994). However, it can be argued from these data that no such devaluation occurred, despite an undesirable loss of adult social identity. In fact, there was a socially acceptable time to stop working, and a sense that it was just as undesirable to be forced to work past one's bodily capabilities. As one moved from the responsible, working 'adult' role, and returned to a 'childlike' frail dependent state, one's familial and relational identities (*e.g.* grandfather, grandmother) became more prominent, perhaps preventing the social and cultural devaluation which has been associated with physical disability (Luborsky, 1994).

As further evidence of the naturalisation of this period of dependency, people discussed caring for their older relatives using the verb *kulea* (to raise/to nurture), which was used with reference to caring for both older people with frailty and children. This is a powerful indication that older people who returned to dependency were not resented for losing their 'independence', just as children are not expected to be more 'independent' and self-caring. The neutrality towards the concept was also conveyed in the belief that frailty in advanced age was beyond an individual's choice and control. For example, God was credited with enabling those with exhaustion to work, rather than it being through the individual's efforts. Perhaps

in part because of widespread religious belief, the individual was never blamed for becoming frail. In contrast, one of the more problematic aspects of western frailty conceptions has been the subjectification of older people, implicating older people in self-managing and optimising their health, making an individual's frailty their personal failing (Tomkow, 2020).

These data suggest that older people were often forced by their circumstances to work beyond their comfortable abilities. This produced an aberration from the expected lifecourse and was experienced as a distressing lack of the expected intergenerational reciprocal care provided by either the family or government. Dramatic changes to Tanzanian society, which has moved away from Nyerere's socialist one-party state, to a free-market economy and multi-party democracy (Mmari, 1995), has put pressure on the citizen–government reciprocal relationship. Admissions of frailty and of struggling or living a difficult life in this context could be interpreted as a plea for the government to address the needs of the older generation better. This sentiment was also echoed in nostalgic reminiscences for the *Ujamaa* period in another qualitative study from the rural outskirts of Dar es Salaam (Kamat, 2008). In Kamat's study, older people also exclaimed '*maisha magumu!*' ('life is hard!'), and shared recollections of what they perceived to be better times, when the socialist government provided subsidised food and free health care. Acknowledging their exhaustion and reduced ability to work or provide for the (financially) dependent old within their communities, particularly in the politicised context of this research design (discussed further in the Limitations section), could be interpreted as a call for more government resources and care.

Slowness

Slow walking speed is an integral component of Fried's frailty phenotype (Fried *et al.*, 2001). It was also mentioned as a characteristic of older age by Meru participants interviewed in Kenya (Thomas, 1995). While the frailty phenotype and other western frailty conceptualisations have been criticised for their objectification of older bodies (Grenier, 2007; Tomkow, 2020), here, difficult or slow walking was a key visual representation of an individual's frailty. The legs were often referred to as disobedient. Refusing to obey their owner and function as they should, there was a separation created between the frail body and the self. A meta-synthesis of phenomenological research from HIC settings similarly found that older people's experiences of being in their bodies increased as their bodily limitations became more apparent (van Rhyn *et al.*, 2020). Grenier (2006) discussed how medical models of frailty have focused on the body's functioning, however, the failing body was only one reason for 'feeling' frail. There was often a disconnect and tension between participants' bodies and their identities (Grenier, 2006, 2007). This distinction was also made by frail community-dwelling adults in England, who used a similar strategy of distancing and separating the 'self' from the body, to resist self-identifying as frail (Warmoth *et al.*, 2016).

In this study, one of the important meanings attributed to 'the legs don't walk' is that people's social world shrank to that of their care-giver and any visitors to their home. While there was a recognition that walking would understandably become more difficult with advanced age, the problematic aspect of this was the challenge

of maintaining a connection with the community. One's social space lessened (Obrist, 2018), as one became an *mgonjwa* (a patient or invalid). An experience magnified by the environment of rural Kilimanjaro (with its steep hills and uneven ground) and lack of access to adaptive walking aids or means of transport. This diminishing social space can be viewed in parallel with the western fear of 'social death' in the fourth age upon entry into institutional care (Gilleard and Higgs, 2015). Yet, the more pressing fear expressed by older people and their relatives was of not having at least one close family member who would be able to take care of them. As the older person became less mobile, having mobile and migrating 'children who are travelling' produced an almost existential threat. In addition to this psychological distress is the reality that older people without family provision of financial and other resources had no choice but to 'search and search' by begging or looking for work. This subsequent food insecurity and resource scarcity was understood to increase their frailty.

Weight loss

Unintentional weight loss can be defined as ⩾5 per cent weight loss in the prior year over serial measurements. According to the cycle of frailty, this occurs due to the 'anorexia of ageing', a physiological change in the hormones regulating appetite and satiation with age (Fried *et al*., 2001). According to this hypothesis, chronic undernutrition due to an inadequate intake of protein, energy and micronutrients contributes to the cyclical downward spiral towards increasing frailty, disability and death (Fried *et al*., 2001). However, age-associated reductions in appetite and hunger are widely understood to occur due to interactions between social factors (such as affordability of foods, difficulty preparing meals), psychological factors (low mood, loneliness) and potentially modifiable disease processes (such as thyroid disorders or tooth loss) (Malafarina *et al*., 2013).

In these data, tooth loss, monotony of diet and not being able to afford enough good-quality food were all given as reasons for weight loss. 'Reducing yourself' was a stigma-laden problem which, unlike the other physical changes associated with frailty, was not naturalised because it was seen as occurring due to financial and food insecurity. In this setting, undernutrition was not primarily due to the 'anorexia of ageing', but can be more helpfully understood as an injustice that older people faced that accelerated the expected ageing process, impairing their ability to age successfully. If 'sitting and eating' was symbolic of a desired and successful old age after returning to a 'childlike' frail state, then being forced to miss meals was its antithesis.

To what extent does the frailty phenotype resonate cross-culturally?

This investigation of frailty, or the 'weaknesses of the elderly', has found that the physical features of frailty are recognised in this context, and may indeed be universal changes associated with advanced old age. However, the meaning attributed to these changes in the ageing body cross-culturally differed significantly.

In this rural subsistence-farming region of Tanzania, 'real' old age and frailty began when one stopped being able to work and produce meaningfully, and thus became financially reliant on family. This finding resonates with previous

anthropological work, in that this period of frailty in old age was described as a return to a 'childlike' status (Cattell, 1990, 2002; Guillette, 1990; Freeman, 2018). This conceptualisation of frailty as a return to 'childlike' dependency, to many western perspectives, may seem to be a negative and infantilising stereotype. However, it is important to balance this finding with the caveat that older people included in this study were by no means an homogenous group, with many taking pride in their identities as farmers and wishing to remain in their active and productive 'adult' roles for as long as they were able. Additionally, in the context of resource scarcity and food insecurity, older people who had become financially dependent on others due to physical frailty would add additional strain on households and family finances. Therefore, this characterisation of older people living with frailty as 'childlike' in their dependency was not an expression of negative attitudes *per se*, but rather an assertion of the older person's changing social role within the household, and the challenge that this raised.

Parallels can be made between the productive grandparent and the western 'third age', and correspondingly between the dependent 'childlike' state and the 'fourth age', with key socio-cultural differences; the third age in the 'west' being a time of consumerism and individual autonomy and freedom (Gilleard and Higgs, 2002). In the Tanzanian context the peak of one's productivity and contribution to one's family and community may be reached through leadership roles working for the development and betterment of the rural community, in keeping with Nyerere's pervasive *Ujamaa* ideals (Nyerere, 1973). The fear associated with frailty and the 'childlike' social condition was not, as it is in western contexts, a fear of loss of autonomy and consumerist pleasures and freedoms, rather it was a fear of not having the resources and care available in order to 'rest inside'. Indeed, the framing of frailty as a social community-level issue is congruent with a community socialised in the *Ujamaa* system.

Despite having rooted this investigation of frailty in the physically oriented frailty phenotype, these results have uncovered a multi-dimensional understanding of frailty. In this aspect, the Tanzanian conceptualisation of frailty converged with what can be described as the forming consensus in HIC biomedicine (Gobbens *et al.*, 2010; Rodriguez-Manas *et al.*, 2013; Gwyther *et al.*, 2018). Important inequities in the determinants of healthy ageing have been highlighted, particularly undernutrition and a lack of access to financial resources were both raised as factors leading to and exacerbating frailty in old age. Helpfully, these findings add to the view of frailty as a product of inequity, a standpoint that may lead to public health interventions aimed at addressing these disparities (Hoogendijk *et al.*, 2019).

Limitations

Translating and investigating concepts across language and cultural differences is undoubtedly challenging, producing an inherent risk of mis-communication, and distortion of meaning during the data production process. Nevertheless, the methods used have sought to mitigate this risk and we believe authentically represents the voices of participants. Simultaneously, the insights gained from this study would not have been possible had the investigators not been 'outsiders' with a level of cultural distance from participants (Irvine *et al.*, 2008).

The framing of the research as a comparison with high-income-derived biomedical models of frailty is a fundamental weakness, and one that is rooted in an epistemological imperialism (Benatar, 1998). This framing has meant starting from a position of privileging western knowledge, and using it as the template against which 'other' ways of knowing can be compared. The fact that this research project could happen, but could not be conceived of in reverse, reveals the dominance of the high-income 'west' and assumed primacy of biomedicine. Yet, this form of cross-cultural comparison may be helpful and indeed necessary, in order to communicate findings effectively with an academic audience that is still largely HIC-based, and familiar with western cultural norms and scientific literature.

The authors believe that their reflexive stance has allowed for a depth of reflection and interrogation of these data that has avoided a superficial 'othering'[13] or essentialist exoticising of the 'rural African' understanding of frailty. Care has been taken to highlight similarities and nuance between the HIC perspective and the Tanzanian account, rather than emphasising the clear contrasts. The fundamental conceptualisation of the study as a comparative study which started from the dominant western biomedical perspective may have re-enforced the potentially damaging notion that global health qualitative research is best utilised for providing added 'cultural capital' to western-derived knowledge (Walsh *et al*., 2016). This research was conceived from a paternalistic assumption that western HIC experiences of frailty would lead to a beneficial northern-to-southern flow of knowledge and assistance (Gautier *et al*., 2018). Participatory and ethnographic research methods are likely to be vital in the further investigation of such a culturally dependent and socially produced phenomenon as frailty, and in order to ensure research questions are meaningful and aligned with the needs and priorities of local communities.

In bringing individuals together for focus groups based on their membership of the village health committee, or as part of their ten-cell leadership roles, the research team unwittingly politicised the discussions. This study design may have led to participants taking on a more formal tone, as representatives for their village, addressing the research team as though we were government/authority figures with the power to influence change. Additionally, the data that we generated were influenced by who we were (as discussed in the Reflexivity section). Specifically, this older participant cohort were likely to associate the British research team with British colonial rule. This may have led to high levels of deference among participants, and despite efforts to represent authentic Tanzanian interpretations, may have contributed to a strong social desirability bias in favour of the interpretations of the 'dominant', privileged research group. The research team sought to reduce the impact of this power imbalance by limiting the number of UK-based researchers in focus groups and interviews to one (EGL) (Bergen and Labonte, 2020).

Implications of the findings

This article has argued that the concept of frailty is superficially congruent across cultural settings, with all the physical elements of the Fried frailty phenotype described. However, underpinning values and cultural norms mean that the concept has less resonance, given that these physical changes were largely naturalised and even viewed as evidence of a life well lived. Psychiatric literature investigating

western concepts cross-culturally has warned against the 'category fallacy', which is pertinent in this case: the fallacy 'is the assumption that because phenomena can be identified in differing social settings, they mean the same thing in those settings' (Summerfield, 2004: 238). That is, while the physical changes of ageing may be widely recognised, the meaning attributed to the ageing body is culturally and socially produced. Thus, researchers from the dominant and globalising 'west' must be mindful not to assume that the HIC biomedical understanding of frailty can be simply substituted with 'the weakness of the elderly', now that it has been measured and broadly recognised cross-culturally.

The problematic aspect of an individual's physically frail body in this study's context was its leading to financial insecurity, and other potential scarcities, such as scarcity of care and food. This framing of frailty as primarily a social issue is reminiscent of discourses of frailty in the early days of the UK geriatric medicine, which established as a speciality in 1948 (Pickard, 2014). In this period, frailty was used to refer to individuals who required social, rather than medical care; '[frailty] signalled a decrepitude "natural" to old age that was hence not the domain of medicine' (Pickard, 2014: 554). However, recognising this similarity with the UK's recent past is not to assume that the conceptualisation of frailty will inevitably evolve similarly over time, leading to an increasing objectification and subjectification of the ageing body (Tomkow, 2020).

Indeed, this interpretation of frailty as primarily a social issue may provide a more helpful way forwards, to address the already-established global inequality in frailty distribution along socio-economic gradients (Hoogendijk *et al.*, 2018; Majid *et al.*, 2020). A focus on improving the determinants of health throughout the lifecourse would also be less problematic than a health promotion discourse that puts the onus on individuals, without acknowledging the broader disadvantages and inequity faced by people ageing in LMICs. Public health interventions to promote an active and productive old age would, of course, be welcomed. Yet also allowing older people living with frailty to 'sit and eat' and to 'settle down inside' through measures that increase their financial security and ability to secure care would be a more culturally congruent response to the 'problem' of physical frailty.

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Notes

1 'Western' cultural norms, as referred to in this article, may be best encapsulated through the descriptions of Gilleard and Higgs who describe the cultural context in which their work is situated. When referring to 'western' society, it is the societies of high-income, industrialised countries dominated by secular capitalism which are generally referred to, often in juxtaposition with the Tanzanian context.
2 A 'social imaginary' is defined by these authors as a shared set of beliefs which are reinforced symbolically, institutionally and through popular discourses.
3 The term *Ujamaa* means familyhood. In Nyerere's view, this form of 'African socialism' was required to build on the founding principles of traditional African life.
4 Translated from *-lea*, a verb meaning to raise, to nurture or to care for.
5 Translated from *-tulia*, a verb meaning to quieten down, to calm down or to relax.
6 JR's original translation was 'I go out to work' but the verb *-tafuta* means to look for, to search for or to find out. Working was one way of finding food in this context. Its repetition may be for emphasis, meaning they searched a lot, or can be interpreted as searching repeatedly, *e.g.* daily.
7 The original translation, 'it brings me to reduce myself', refers to unintentional weight loss; *-punguza* is a verb meaning to reduce or to trim. The generally positive associations with weight loss in western HICs was usually in contrast with Tanzanians' views of weight gain as a sign of prosperity and health.
8 In this context, 'travelling' refers to rural-to-urban migration, rather than travelling as a leisure activity.
9 *Mnyonge* is a noun meaning a weak person, 'down-and-out' or wretched person. It is repeated for emphasis. In the original translation of the transcript, it was translated as 'debased' by JR.
10 *Kanga* (noun): 1. *Kanga* cloth; *kanga* wrapper. 2. Guinea fowl. The decorative fabric worn by women across the Great Lakes region of East Africa earnt its name from the spotted background patterns which looked similar to a guinea fowl's pattern. Today it is usually worn wrapped around the waist, over a dress or other loose layer of clothing.
11 *Mjinga* is a noun meaning clown or fool. In this quotation it refers to being made to feel like a fool and disrespected.
12 Using the CES-D questions, the participant is asked to grade how often in the past week did they feel that (a) 'everything I did was an effort' and (b) 'I could not get going'. Subjects answering 'a moderate amount of time' or 'most of the time' to either of these questions were categorised as meeting the criterion for exhaustion.
13 'Othering' has been defined as the process of marking out and naming those thought to be different.

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