

Social capital and the decline in HIV transmission – A case study in three villages in the Kagera region of Tanzania

Gasto Frumence, Japhet Killewo, Gideon Kwesigabo, Lennarth Nyström, Malin Eriksson, Maria Emmelin

Abstract

We present data from an exploratory case study characterising the social capital in three case villages situated in areas of varying HIV prevalence in the Kagera region of Tanzania. Focus group discussions and key informant interviews revealed a range of experiences by community members, leaders of organisations and social groups. We found that the formation of social groups during the early 1990s was partly a result of poverty and the many deaths caused by AIDS. They built on a tradition to support those in need and provided social and economic support to members by providing loans. Their strict rules of conduct helped to create new norms, values and trust, important for HIV prevention. Members of different networks ultimately became role models for healthy protective behaviour. Formal organisations also worked together with social groups to facilitate networking and to provide avenues for exchange of information. We conclude that social capital contributed in changing HIV related risk behaviour that supported a decline of HIV infection in the high prevalence zone and maintained a low prevalence in the other zones.

Keywords: HIV, social capital, interventions, behavioural change.

Résumé

Nous présentons ici les données d'une étude de cas exploratoire caractérisant le capital social dans trois villages de la région de Kagera en Tanzanie. Ces villages sont situés dans des zones aux taux de prévalence du VIH disparates. Des groupes de discussion et des entretiens avec des personnes ressources ont permis de collecter un éventail de témoignages des membres de la communauté, des dirigeants d'organisations et de groupes sociaux. Nous avons constaté que la formation de groupes sociaux au début des années 1990 a été en partie le résultat de la pauvreté et des nombreux décès causés par le SIDA. Ces groupes sociaux se sont bâtis sur une tradition de soutien à ceux qui sont dans le besoin. Ils ont notamment fourni une assistance économique et sociale aux membres de la communauté en accordant des prêts. Leurs règles de conduite strictes ont contribué à créer de nouvelles normes et valeurs, et de la confiance, des ingrédients importants pour prévenir le VIH. Au bout du compte, les membres des différents réseaux sont devenus des rôles modèles en termes de bonne conduite en matière de santé. Les organisations institutionnalisées ont aussi travaillé main dans la main avec les groupes sociaux pour faciliter la mise en réseau et fournir des moyens pour échanger des informations. Nous concluons que le capital social a contribué à changer les comportements à risque liés au VIH, en permettant une diminution des infections dans la zone à fort taux de prévalence et en maintenant un taux faible dans les autres zones.

Mots clés: VIH, capital social, interventions, changement de comportement.

Introduction

Social capital has raised considerable academic and policy interest in recent years, particularly within the area of public health. This paper focuses on how we can conceptualise social capital in terms of individual and community relations and social interactions, and discusses the influence on health in general and the transmission of HIV and AIDS in particular. We present data from an exploratory case study characterising various forms of social capital that may have influenced the observed decline of HIV prevalence in the Kagera region of Tanzania.

The transmission of HIV and AIDS in Tanzania

Tanzania is one of the sub-Saharan African countries greatly affected by the HIV epidemic. The first three HIV cases in the country were discovered in 1983 in the Kagera region. Ten years later HIV had reached all regions of Tanzania (Kwesigabo, 2001), including the rural areas, thereby increasing the previously low rural prevalence to more than 10% (TACAIDS, 2006). In the past decade Iringa (18%), Mbeya (16%) and Dar es Salaam (11%) regions have witnessed the fastest growing HIV prevalence in the country (TACAIDS, 2008). During the same period there has been

Gasto Frumence, Department of Development Studies, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania.

Japhet Killewo and Gideon Kwesigabo, Department of Biostatistics and Epidemiology, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania.

Lennarth Nyström, Malin Eriksson and Maria Emmelin, Department of Public Health and Clinical Medicine, Epidemiology and Global Health, Umeå University, Umeå, Sweden.

Correspondence to: gasto.frumence@epiph.umu.se or gfrumence@muhas.ac.tz

a decline in prevalence in the Kagera region from 9.6% in 1987 to 3.4% in 2008. Repeated cross-sectional studies from an urban area situated in the highest prevalence zone showed a decline from 24% in 1987, to 18% in 1993, 13% in 1996, and 8.2 % in 2004. In a peri-urban medium prevalence zone a decline from 10% in 1987, to 6.8% in 1996, and 4.3% in 1999 was observed; and in a rural low prevalence zone HIV declined from 4.5, % in 1987 to 2.6% in 1999. In all three zones the decline was more pronounced among women, illustrated by figures from Bukoba urban where the prevalence among women went down from 29% in 1987, 19% in 1993, 15% in 1996, and 8.7% in 2004. The corresponding figures for men were 17% in 1987, 17% in 1993, 10% in 1996, and 7.3% in 2004. (Killewo *et al.*, 1990; Killewo, Sandstrom, Bredberg-Raden, Mhalu, Biberfeld & Wall, 1993; Kwesigabo, 2001; TACAIDS, 2008).

The declining HIV prevalence trend has largely been explained by efforts of both governmental and non-governmental organisations (NGOs), such as health education, promotion of condom use, and voluntary HIV counselling and testing (VCT). Studies in Kagera have shown an increase in condom use from 23% in 1993 to 30% in 1996 (Kwesigabo, 2001). Socio-anthropological studies have shown an increased awareness and knowledge about HIV/AIDS causes, prevention and interventions, and an increased openness that may have decreased the stigma previously associated with the disease (Lugalla *et al.*, 2004). However, the explanations of factors contributing to the decline of prevalence have so far not explored how community members organise themselves in various social groups or associations, and how this may have influenced people's health behaviour.

Public health researchers have recognised "social capital" as an important theoretical and practical tool to explain the effects of health interventions (Campbell, 2000; Kawachi, Kenedy, Louchner & Prothrow-Stith, 1997). However, social capital has to be contextualised to understand its influence on community health. There is a need to characterise what constitutes social capital in the studied settings. By focussing on social structures and social interactions we may better understand what actually influences community behaviour. With this point of departure we used three case villages to map out and characterise various forms of social capital and related activities that may have influenced HIV transmission in Kagera.

Social capital

According to Bourdieu (1986, p.248), social capital is "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition". Coleman (1988, p.6) defines social capital by its function stating that "It is not a single entity, but a variety of different entities having two characteristics in common: they all consist of some aspect of social structures, and they facilitate certain actions of individuals who are within that structure". Putnam (1995, p 67) defines social capital as "*features of social organizations, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefits*". Fine and Lapavitsas (2004) develop the concept further by differentiating between social capital created at family, neighbourhood, community, organisational and political level.

Individual social capital

Bourdieu (1986) argues that social capital includes resources accrued by individuals as a result of their involvement in social networks. Individual benefits are the result of relationships with other individuals through networking. In line with Bourdieu, Lin (2001, p.73) defines social capital as "resources embedded in one's social network, resources that can be mobilized through ties in networks". Furthermore, Flap (2004) suggests that social networks create important capital that an individual can utilise to achieve his/her intended goals.

Collective social capital

Coleman (1988) and Woolcock (1998) regard social capital as a collective property resulting from members' involvement and participation in various formal and informal associations. The main concern is that members of these associations or networks mutually benefit from collective actions, which conforms with Putnam's definition of social capital as described above. According to Lochner, Kawachi and Kennedy (1999) this collective approach implies that social capital is not an individual property. However, even if it has a collective feature, the effects can be evaluated at the individual level (Hyypä & Maki, 2003).

Integrative approaches to social capital

Rothstein and Stolle (2003) claim that social capital can be defined both at individual and collective level. At individual level it can be operationalised as the number of contacts a person has in the society, and the degree to which these contacts trust each another. At the collective level the emphasis is on aggregated measurements of average social contacts and networks, and the level of trust embedded in them. This integrative approach shows that social capital is basically featured by existing individual social ties being the foundation for collective social capital. Through reciprocal relations each individual may benefit by accessing resources that end up in forming large social structures providing mutual benefits to groups rather than individuals.

We agree with Rothstein and Stolle that individuals may join social networks in order to gain access to social support, but that it is the collective efforts that bring mutual benefits to which individual network member get access.

Classifications of social capital

Structural social capital concerns the density and extent to which individuals or members participate in various formal and informal associations and any other social activity (Harpham, Grant & Thomas, 2002, Uphoff & Wijayaratra, 2000). It builds cooperation and facilitates mutual benefits through collective actions (Hitt, Lee & Yucel, 2002). Cognitive social capital includes values, attitudes, beliefs, norms and reciprocity which can be seen as a resource held between individuals interacting within the social networks. The cognitive component also includes perceptions of support, sharing and trust. It predisposes people towards mutually beneficial collective actions (Krishna & Uphoff, 2002; Uphoff, 1999).

Structural social capital can be further sub-classified into bonding, bridging and linking (Putnam 2000; Woolcock, 2001). Naraya and

Pritchett (1997) define bonding social capital as relations formed by social networks between homogeneous groups. It basically involves people who are closely linked through networking. This type of social capital includes both formal and informal groups, associations and clubs. In bridging social capital the connected bonds are formed beyond the boundaries of various social groups (Putnam, 2000). Bridging social capital extends to individuals, organisations and social groups that cut across different communities and individuals, and have vertical ties (Naraya & Pritchett, 1997; Wallis, Crocker & Schlechter, 1998). Linking social capital is defined as the existing relationships between individuals and groups with dissimilar situations and from different societies, which enables members to access a wider range of resources, ideas and information (Woolcock, 2001).

We have adopted Putnam's definition of social capital, referring to both structural and cognitive social capital focusing on networks, norms and trust, as well as the distinction between structural capital into bonding, bridging and linking.

Social capital and HIV transmission

Social capital is assumed to influence individual behaviour and thereby the transmission of HIV infection in the population (Berkman & Kawachi, 2001; Campbell, Williams & Gilgen, 2002). Mann and Tarantola (1996) suggest that interactions within high risk groups such as sex workers largely contribute to increased HIV transmission; while cohesive community social groups, as well as social and material resources accessible to members, can play a protective role. Strong social networks may for example result in social and cultural pressure that may discourage high-risk sexual behavior (Pronyk *et al.*, 2008b). Such networks may also provide avenues for exchange of information, which may help in shaping community norms and become role models for healthy behaviour. A study by Gaede, Majeke, Modeste, Naidoo, Titus and Uys (2006) found an association between good social support, increased use of condoms and vitamin intake.

The overall objective of this study was to explore the existing forms of social capital in three case villages representing different HIV prevalence zones, and discuss their possible influence on HIV transmission in the Kagera region, Tanzania. The specific objectives were to: map out types, number and activities of formal organisations and informal networks; create a village score for the activities performed; and characterise the organisations and networks in respect of cognitive and structural social capital.

Methodology

Study area

Kagera is located on the western side of Lake Victoria. There are seven administrative districts in the region (Bukoba urban,

Bukoba rural, Muleba, Karagwe, Ngara, Biharamulo and Chato). These districts are further divided into divisions, wards, and villages or streets. Villages, mainly found in rural areas, are further subdivided into hamlets (*"vitongoji"*), which are the smallest administrative units consisting of 25-200 households. In urban areas the smallest administrative unit is the street also consisting of 25-200 households. According to the 2002 population projections, the region has a population of two million (TBS, 2002).

Study design and sampling procedures

Study design

Key informant interviews and focus group discussions (FGDs) were performed in three case villages selected to represent high, medium and low prevalence zones, based on estimates from the 1987 survey (Kwesigabo *et al.*, 2005). The study was performed in one ward in each of the identified zones. Within the wards one village was purposively selected in collaboration with the Ward Executive Officers (WEO). They were asked to identify all NGOs, faith-based organisations (FBOs) and social groups operating in their wards, to facilitate the research group selecting a village where all types of groups were represented and could be seen as a "typical village" by having an average number of organisations and social groups.

A total of 29 key informants were purposively selected for interviews, to represent village leadership, existing organisations and networks, about their views on the characteristics and activities related to social capital (Table 1). Out of 29 key informants, five were ward and village leaders, six were FBO leaders, and the remaining 18 were leaders of informal organisations. Three key informants had college level education; seven had secondary education, while the remaining 19 had primary level education. In total 120 community members were purposively selected to participate in FGDs, with the aim of capturing the range of experiences among community members of the organisations and social groups identified by the ward and village leaders (Table 1).

Data collection

The collection of data took place during September-October 2008 and was performed by the first author with assistance of two local research assistants. The interview guides were based on various themes (Table 2). All guidelines were translated into Swahili to minimise language barriers. Most interviews and discussions were held in the ward or village leader's offices, but without the presence of the leadership, and lasted 1-2 hours. All interviews and discussions were tape recorded, transcribed verbatim and translated into English, to facilitate joint analysis by the research group.

The FGDs were held in homogenous groups regarding sex and age, to facilitate open communication. The participants were asked

Table 1. Number of key informants and focus group participants by case village

HIV prevalence zone	Village	Number of		
		Key informants	Focus groups	Focus group participants
High	I	11	4	32
Medium	II	9	7	55
Low	III	9	4	33
Total		29	15	120

Table 2. Guide for key informants and focus group discussions

Type of guide	Themes	Sub-themes
Key informant interviews for non-governmental and faith based organisations	HIV and AIDS activities	<ul style="list-style-type: none"> • Counselling • Education • Treatment • Procurement, promotion and distribution of condoms • Material support to vulnerable population • Duration and intensity of the HIV and AIDS activities
Key informant interviews for social groups and networks	<p>Strategies used to build trust and reputation</p> <p>Number of organisations and social groups in the village and their activities</p> <p>Possible influence of social capital in the transmission of HIV and AIDS</p> <p>Institutional and organisational trust and reputation</p>	<ul style="list-style-type: none"> • Care of the sick • Protection of vulnerable populations • Support to bereavement • Economic livelihood
Focus group discussions	Number of organisations and social groups in the village and their activities	<ul style="list-style-type: none"> • General activities of organisations, social groups and networks • Specific activities targeting HIV prevention • Ranking HIV related activities according to their importance in changing sexual behaviour • Memberships in social groups • Care of the sick • Protection of vulnerable populations • Support to bereavement • Economic livelihood

to list HIV intervention activities in their areas and rank them according to their importance for changing sexual behaviour. The number of FGDs conducted was based on an emergent design, where the results from the first group determined the need for further data collection.

Ethical considerations

The study had ethical approval from the research committee of the Muhimbili University of Health and Allied Sciences. Permission to conduct the study was also obtained at regional, district, ward and village level in Kagera. Individual informed verbal consent was obtained from all participants. They were informed about anonymity and confidentiality issues, and that they could withdraw from the study at anytime.

Data analysis

A case study analysis was performed using several sources of information appropriate for describing a phenomenon in-depth focusing on “what” characterised social capital (Creswell, 1998, Dahlgren, Emmelin & Winkvist, 2004). The listing of activities in Table 3 aimed at operationalising social capital, in terms of activities that promote interaction in social groups for expected returns, according to Putnam’s definition. This list was used to develop a scoring system for categorising the studied villages according to level of social capital (Table 4). Each activity was given one score. Thus the village’s total score was based on the number of activities that the organisations and social groups performed. The higher the scores that the village obtained, the higher the interactions among community members, and the higher the level of social capital. Efforts were made to establish the duration of each organisation and social groups in all three villages. However,

since our informants had difficulty in recalling when many of the organisations and social groups began their operation, it became impossible to score activities retrospectively.

Findings

The type, number and list of activities performed by organisations and social groups in the studied villages, the activity score for each of these associations, as well as the total score used as a proxy for social capital, are presented in Table 3 and 4. Below is a detailed account for the case villages, followed by a presentation of how social capital was characterised into structural (bonding, bridging and linking) and cognitive social capital.

Case village I – high prevalence zone Organisations

Most of the organizations in this village had emerged as a result of the threat posed by the HIV/AIDS epidemic. They were involved in various social welfare activities, including rehabilitating infrastructures like health facilities and supporting vulnerable populations such as orphans, by paying their school fees, and for stationery and uniforms. The key informants emphasised the organisations’ role in building community capacity by empowering the community economically:

We educate people on how to alleviate poverty through joining into small groups and start up a village bank using their own contributions. We also teach them how to save money and use it to give loans to each other [Key informant 10]

The organisations were also implementing HIV related activities such as providing VCT, psychosocial support and home-based

Table 3. Type of activities performed by organisations, social groups and networks

Area of activity	Type of activity	Organisations	Social groups and networks	Performed in village		
				I	II	III
Education	To provide HIV education	X		X	X	X
	To provide health education	X		X	X	X
	To provide spiritual education	X	X	X	X	
	To provide entrepreneurial skills and knowledge	X	X	X	X	
	To provide agricultural skills	X	X		X	X
Care and treatment	To promote antiretroviral treatment	X		X	X	
	To provide treatment of sexually transmitted infections	X		X	X	
	To provide home based care	X		X	X	
	To treat other illnesses	X		X	X	
	To provide preventive mother to child transmission	X			X	
Counselling	To provide voluntary, testing and counselling services	X		X	X	
	To provide psychosocial support	X		X	X	
Preventive support	To encourage abstinence among youth	X	X	X	X	X
	To encourage people for HIV test		X	X	X	X
	To discourage adultery		X	X	X	X
	To discourage excessive alcohol intake		X	X	X	X
	To discourage night discos		X		X	X
	To promote condom use	X	X	X	X	X
	To procure/purchase condoms	X			X	
	To distribute condoms	X				
Economic support	To construct health facilities and houses	X	X		X	X
	To provide loans	X		X	X	X
	To support children's school fees	X	X	X	X	X
	To support vulnerable populations	X	X	X	X	X
	To support economic projects by providing seed capital to community groups	X		X	X	X
	To provide household utensils to members	X	X	X		
	To provide economic support during bereavement	X	X	X	X	
Legal support	To support rights of vulnerable populations	X		X	X	
	To provide human rights education			X	X	X
Social support	To provide emotional and material support for sick members			X	X	X
	To provide emotional and material support during bereavement			X	X	X
	To provide material support during weddings and other celebrations			X	X	X

care, supporting people living with HIV/AIDS (PLWHA) by giving them basic needs such as food and medicine, and providing health education through seminars, distribution of posters, and fliers so as to change sexual behaviours of the community members.

Social groups

Twenty social groups were identified, 12 of which were women's groups. All social groups were not formally registered as NGOs and FBOs, but the community leadership was aware of their existence and their activities. They were engaged in provision of loans, contribution during bereavement, and involvement in celebrations. Loans were given mainly to members but occasionally also to non-members, but then with higher interest rates. During bereavement the group members contributed firewood, food and money to the deceased member's family. During the burial ceremony women members prepared food and men helped in distributing it to the guests. The groups supported sick members by giving them money for food and drinks, and visited them in hospital or at home for comfort:

We also support celebrations, such as weddings and baptism through contribution of money and gifts to the bride, bridegroom or the baptized baby [Adult female FGD]

Almost all social groups had strict membership conditions, which may have indirectly influenced HIV prevention. For instance, people who were at risk of HIV infection such as heavy drinkers and adulterers could not easily be accepted as members in certain social groups. Members who misbehaved were subjected to severe punishment, such as fines and expulsion, which indicated that those who wanted to become a member needed to act in a respectful way. One of our informants reported that a member was expelled from the group because she had sexual relations with another member's husband:

This situation caused a big conflict within the group and the perpetrator was finally expelled from the group. A perpetrator of this kind cannot remain in the group because she humiliates the group [Key informant 3]

The number of members in the social groups varied from 15 to 50. The groups were usually based on members within the same neighbourhood, with only one group accepting members from neighbouring districts. This meant that the groups consisted of people who knew each other well in terms of behaviour and characteristics. Thus, they could for example exclude people who could not keep group secrets, were drunkards, quarrelsome, in

Table 4. Scoring of activities performed by non-governmental and faith-based organisations and social groups in the case villages

HIV pre- valence zone	Village	Type of organisa- tion/groups	Number of organisations	Coverage	Type of activity							Total score per activity
					Education	Care and treatment	Counseling	Preventive support	Economic support	Legal support	Social support	
High	I	<i>Organisations</i>										
		FBOs	3	District	0.89*	0.42	0.67	0.33	0.44	0.50	0.92	1.15
		Community	2	District	0.17	0.50	0.33	0.17	0.25		1.0	1.17
		Government	1	District					0.17		1.0	1.14
		NGO	1	District	0.67	0.25			0.67		1.0	1.3
		Total	7		1.7	1.2	1.0	0.50	1.5	0.50	3.67	5.2
		FBOs	6	District	0.89	0.29	0.50	0.17	0.56	0.33	0.66	0.93
Medium	II	Community	2	District	0.17	0.50	0.33	0.25		1.0	1.4	
		Government	2	District	0.17			0.17	0.17		0.51	
		NGO	1	District	0.33				0.17		0.50	
		Total	11		1.6	0.79	0.83	0.51	1.2	0.33	5.1	
		FBOs	1	District					0.33		0.33	
Low	III	Government	2	District				0.17		1.0	1.17	
		Total	3					0.50		0.50		
		<i>Social groups</i>										
		Adult women	12	Village			0.06	0.17			0.92	1.15
High	I	Adult men & women	5	Village			0.03	0.14		1.0	1.17	
		Adult men	1	Village				0.14		1.0	1.14	
		Youth men & women	1	Village				0.14		1.0	1.14	
		Youth men	1	Village					1.0		1.0	
		Total	20				0.09	0.59		4.92	5.6	
Medium	II	Adult women	18	Village	0.02		0.09	0.19		0.98	1.3	
		Adult men & women	11	Village	0.06		0.08	0.23		0.69	1.0	
		Adult men	2	Village			0.21	0.43		1.0	1.6	
		Youth men & women	2	Village			0.14	0.14		1.0	1.3	
Low	III	Total	33		0.08		0.52	0.99		3.67	5.2	
		Adult women	3	Village			0.04	0.23		0.66	0.93	
		Adult men & women	12	Village			0.16	0.24		0.64	1.0	
		Youth men & women	1	Village				0.28		1.0	0.28	
		Workers men & women	1	Ward				0.14		1.0	1.1	
Total	17				0.20	0.89		2.3	3.3			

*Calculated by taking actual number of activities performed by all organisations divided by the total number of activities that could have been performed by all organisations.

debt to others, non-cooperative, untrustworthy or inactive in social activities:

If a person is from another group, we must investigate to know why she/he decided to leave that group. If accepted she/he has to agree to abide with our rules and regulations [Adult female FGD]

Most women's groups had additional requirements, for instance that of being well behaved and respectful (particularly not indulging in love affairs with other women's husbands). Those who misbehaved could be fined 500-5000Tsh (US\$ 0.5-4) or dismissed from the group. These requirements, and the risk of being excluded, formed values and norms that were important for the integrity and sustainability of the groups.

Social groups devised various ways of generating money to support those in need. Most groups had entry fees and monthly contributions from their members. Some groups also required special contributions for generating capital for future short-term loans for small-scale business ventures for members. These loans in turn generated additional funds through interest rates. There were groups that had established a "village bank" where they deposited surplus from their small scale businesses. The bank was a small wooden box with three padlocks whose keys were kept by three different members. The savings and other contributions deposited were given to members and non-members as loans. Other groups generated income by buying small items such as soap, salt, matchboxes and sugar at wholesale prices, and then selling them to members at a retail price for profit. Most of the social groups met once per month, while a few groups met as often as once per week. The main agenda at their meetings included collecting contributions, issuing loans, and receiving returns of the members with current loans.

Structural social capital

Bonding

The social groups created strong ties, cooperation and interaction between community members of the same neighbourhood, which was also facilitated by the indigenous and homogeneous character of people living in the area. Our informants reported that they experienced many deaths due to AIDS, and were no longer capable of supporting burial of deceased relatives without getting emotional, material and economic support from neighbours. They also stated that poverty had contributed to the formation of additional social groups, as they were regarded as sources of accessing capital to members. This meant that neighbours who knew and trusted each other formed social groups or networks to generate capital for members and to provide loans:

By joining into groups we pull our efforts together which help us to bring development at family level and help to eradicate poverty through loans and small business which we do together [Young female FGD]

Bonding social capital thus enhanced reciprocal relations. The loan schemes also had an empowering component for members, as illustrated by the women's social group that had established a village bank, which was a new kind of credit and savings society.

Since the bank was managed by the members themselves they had to get skills and knowledge on how to run it. This had empowered women to alleviate poverty both at the individual and family level, by a slow development as narrated by one of the women members:

At the beginning, I was unable to pay even a monthly contribution of Tsh 50. I did not know how to save money but now I am very keen. ...My husband is now calling me a rich woman because I started with very small business, now I am selling bananas and planning to open a store to sell household items [Key informant 12]

Bridging

Bridging social capital was weak since there was only one social group in this village that recruited members from a neighbouring district. These members were not interacting much since they could not attend weekly or monthly meetings, but had to rely on being represented by other members. However, a more limited bridging social capital was observed among those social groups who extended their membership to people from neighbouring streets.

Linking

Linking social capital was weak since there was only one social group with a direct linkage to an organisation, which enabled this social group to access resources from a more powerful organisation, especially by receiving information and training on issues like entrepreneurship and HIV and AIDS.

Cognitive social capital

Almost all social groups had established strict conditions or rules for membership, where members who misbehaved were subjected to severe punishment. This enhanced cohesiveness and close ties among members, while at the same time isolating outsiders. Most importantly the social groups generated shared trust, values, reciprocity, beliefs and norms among members, which shaped collective actions for mutual benefit. Trust was observed as the main pillar of the cognitive social capital, and increased the reputation of the social groups, which attracted more members.

NGOs and government based organisations focused on empowering communities in various socio-economic aspects, including building schools and roads. They mobilised communities to volunteer their labour as a prerequisite for providing equipment and raw materials. These activities created solidarity among the community members and made them make collective decisions and perform collective actions for their own benefits. Even the failure to complete government based projects was seen as an advantage, in that the community was mobilised to act themselves:

The organisation has abandoned the project incomplete....but it showed us a way and mobilised us to take responsibility to repair the road ourselves [Male FGD]

Case village II – medium prevalence zone Organisations

Like in village I, some of the organisations had emerged after the threat of HIV/AIDS and rampant poverty. They were

implementing various socio-economic activities (Table 2), the most common being rehabilitating health and water facilities, supporting economic projects by providing seed capital to community groups, and supporting orphans and poor children by providing them with bedding and paying for school fees, stationery, and uniforms, building or repairing houses for poor people and orphans, encouraging and supporting the formation of social groups, and providing human rights education to the community. Activities related to HIV interventions included providing health education in general and HIV/AIDS education in particular, providing food, medication and transport to people living with HIV/AIDS (PLWHA), provision of VCT services, psychosocial support and home based care, providing treatment of sexually transmitted infections, promoting use of antiretroviral treatment, and provision of spiritual education to the community. Capacity building through sensitising the community to understand their rights, including women's sexual rights was also regarded as important HIV-related intervention:

We build capacity by taking legal services to the community so that they know their rights and make them ready to raise their voice about their feelings and demand to be empowered [Key informant 15]

In capacity building programmes, FBOs paid school fees for orphans and other vulnerable young people. They also provided working equipment to some of the orphans for generating their own employment, thus avoiding engaging in sexually risk behaviours.

Social groups

Out of the 33 social groups, 18 were women's groups, two were male groups and the remainder were mixed groups. They were engaged in similar activities to the groups identified in village I, but had additional income generating projects directly supporting survival such as keeping goats, pigs, cows and poultry:

In my group, we have a small farm where we plant tomatoes, sweet potatoes, and cassava. Since we meet twice a week for farming activity, it help us to know each others' condition and through selling farm products, we generate additional income for our group [Key informant 17]

The prerequisites for membership were also similar to village I, with the exception that most groups accepted members from neighbouring villages. Monthly fees, interest rates and defaulters' fines and penalties were the main sources of generating money for the groups.

Structural social capital

Bonding

We observed high levels of cooperation and interactions among people of the same neighbourhood. Some of these groups were formed by five to seven families, which enhanced ties among them. Poverty and many deaths due to AIDS, as in village I, had increased the level of bonding social capital due to families' dependency on support from neighbours. This dependency and the connected trust also facilitated the formation of social groups for generating capital for members to get loans, which in turn

enhanced bonding social capital. Bonding social capital enhanced reciprocal relations by a give and take system where special contributions aimed directly at economic empowerment were more common than in village I. Furthermore, in village II, FBOs had a more prominent role in enhancing bonding social capital by encouraging the formation of social groups and to a greater extent providing them with money, cows or goats.

Bridging

Bridging social capital was as weak as in village I, since there were few social groups who extended membership to the whole ward. Only one group recruited members from two wards, but they experienced a fragile relationship due to distance and by having members scattered.

Linking

The linking social capital was higher than in village I. There were higher levels of collaboration between organisations, particularly FBOs and social groups. The FBOs brought together different stakeholders, including leaders of social groups, community leaders and religious leaders, to discuss how to solve existing social problems with their technical and financial support.

The linkage between social groups and powerful organisations, particularly FBOs, was central in linking social capital, encouraging community members from different socio-economic backgrounds to form small groups, and also providing support to them:

The FBOs provide projects to people who cooperate, those who know each other and agree to form groups. They are given projects so as to alleviate themselves from poverty [Female FGD]

FBOs here were more directed than in village I towards mobilising and motivating both their believers and non-believers to volunteer in community activities such as helping the poor to renovate their houses and providing them with basic needs. Thus, FBOs became an important linking social capital, connecting those with ability to the vulnerable populations such as widows, orphans and poor people:

When we build a house for vulnerable one, we mobilise and ask the neighbours regardless of their religious affiliation to help in fetching water or carrying the bricks or collecting the stones for building [Key informant 4]

Cognitive social capital

Like in village I, social groups set forth strict membership criteria and rules, as well as norms and values of operations, aimed at shaping behaviour. Excessive alcohol consumption and adultery were discouraged, but here gossiping outside the group was also seen as violating membership norms. Punishments such as fines and expulsion from the group were also applicable. These norms, rules, values and trust generated a common behaviour code for all members, and therefore facilitated their collective actions and benefits. The FBOs created more solidarity among the community members than in village I, by encouraging joint socio-economic activities to support vulnerable groups.

Village III – low prevalence zone

Organisations

The governmental organisations were engaged in educating farmers on how to improve farming methods and supporting the community in building classrooms for secondary schools. The FBOs mainly supported orphans by providing them with bedding, school fees and stationery.

Social groups

Like in village II, social groups were engaged in providing loans to members, contributing money and food items to the family of a diseased member as well as hospitalised members, providing money and labour during celebrations, and giving support for building schools. The emotional support to sick members was more emphasised in this village than in village I and II.

Criteria for membership and rules and regulations governing the operation of these groups were similar to those of village I and II. However, there was no FBO that had supported the formation of social groups in this village. Like in village I and II, monthly fees, fines and penalties for defaulters and interest rates from loan scheme were the main sources for generating money. A main difference between social groups in this village and village I and II was the obligation of members to take short-term loans to generate income for the group fund, locally known as uzalishaji. Not being able to contribute to the group fund was a reason for being excluded as a member:

In our group, borrowing is compulsory for every member so that he/she does something productive to generate additional income to the group through loan interest [Adult men FGD]

There were also some efforts by the social groups to sensitise members towards reducing risk for HIV infection:

We educate group members about the impact of HIV and AIDS. We also motivate people to be faithful in their marriages and advise youth to abstain from sex until they marry [Male FGD]

Structural social capital

Bonding

The most common form of structural social capital in this village was the bonding, since most of the social groups recruited members from the same hamlet. Unlike in village I and II, some groups were formed by clans (people who had blood relationship) with the purpose of supporting each other during sickness and bereavement, as well as empowering clan members economically.

In addition, these groups aimed at solving conflicts among clan members and rectify misbehaviour. This kind of relationship enhanced the strength of the bonding social capital in village III.

Bridging

Some of the social groups, particularly women's and youth groups, formed bridging social capital by recruiting members from relatively distant areas. One of them, locally known as *Sungusungu* (meaning traditional guards) had been established by the community to protect cattle and other property. Another group was a choir established to sensitise the community to socio-economic issues including HIV prevention. Since these groups recruited heterogeneous members, they were characterised by weak ties, resulting in difficulties to achieve their objectives. The *Sungusungu* group was split after misunderstandings between the youth football team and its elderly members:

By mixing old and young members in our group, old people did not understand youth interests, which caused misunderstandings [Youth male FGD]

Linking

Compared to village I and II, linking social capital was not observed in this village, since most of the organisations were working more in urban and semi-urban areas where village I and II were situated. The FBO working in this village provided material support to orphans and other vulnerable children, but had no linkage with any of the social groups.

Cognitive social capital

Like in village I and II, social groups in this village stipulated membership criteria and rules, as well as norms and values governing their operations, including how members should behave. As in village I and II defaulters were subjected to fines and expulsion from the groups. The cognitive social capital shaped members in a way that facilitated collective decisions and actions, thereby achieving common goals.

As summarised in Figure 1, the study showed that social capital in terms of associations and networks differed between villages. Case village I, situated in the high HIV prevalence zone, was found to rank highest for social capital. There were more interactions and reciprocal relations among community members, which were substantiated by having a high number of activities and support provided both by organisations and social groups. Case village II, in the medium HIV prevalence zone, scored second in terms of social capital with fewer activities and interactions among the community members. Case village III, in the low HIV prevalence

Table 5. Summary of existing forms of social capital in the high (I), medium (II) and low (III) prevalence village (+++ = High, ++ = Medium, + = Low)

Form of social capital	Village		
	I	II	III
Structural			
Bonding	+++	+++	+++
Bridging	+	+	++
Linking	+	++	
Cognitive	++	+++	+++

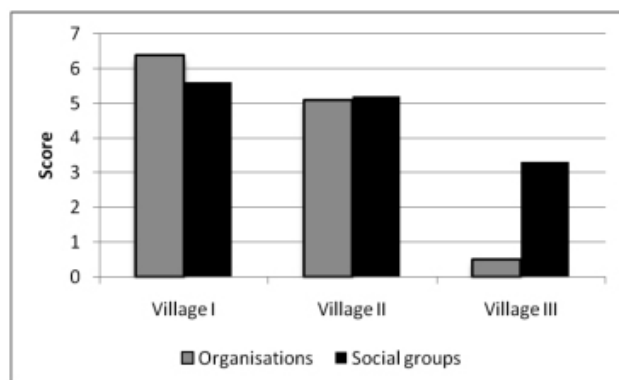


Fig. 1. Activity score for organisations and social groups in the high (I), medium (II), and low (III) prevalence village.

zone, was ranked third, indicating fewer interactions and solidarity among community members. However, activities and interactions observed in all three villages reinforced ties among members of the social groups, and between powerful organisations and less powerful social groups, which in turn created varying levels of cognitive social capital and structural social capital in the form of bonding, bridging and linking (Table 5). Linking social capital was more common in village II, with more collaboration in the implementation of socio-economic activities between organisations and members of social groups.

Strengths and limitations

To increase the validity of the study we used methodological triangulation, by using key informant interviews complemented with FGDs and document reviews. Pilot interviews improved the topic guide as well as the interview and moderating skills. Prolonging the data collection period allowed the research team time for reflection between field visits, and to perform a preliminary analysis to guide the data collection. The final data analysis was facilitated by peer-debriefing sessions within the interdisciplinary research team. The work to establish the activity score for each organisation and social group, as well as the contextualised information also supported our interpretation of the results. A limitation was that the information on the organisations and social groups was incomplete, since our informants had difficulties recalling when they had started their operations.

Discussion

We have shown that the extensive number of organisations and social groups in the three case villages in the Kagera region constitute an important contribution to social capital. Bonding, bridging, linking (structural) and cognitive social capital was most pronounced in the villages with high and medium HIV prevalence, compared to the village in the low prevalence zone, where especially linking social capital was less pronounced. We introduced an activity score to be able to rank the social capital, and showed that the more activities, the more interactions and higher levels of social capital. Thus, in the Kagera context, social capital may have had an important influence on the observed decline in HIV prevalence. Many of the organisations and social groups were initiated in the mid 1990s when poverty and the increasing number of deaths due to HIV/AIDS had a great impact on the community. This was also the time when HIV/AIDS

started to be seen as a collective responsibility, as indicated by Mutembei, Emmelin, Lugalla and Dahlgren (2002), who observed a change in the local language used when describing AIDS as being "our thing". Formal organisations had started to work more directly with social groups to educate the community about risky health-related behaviour for HIV infection, thereby becoming sources of HIV protective cognitive social capital. Social groups and networks both stipulated strict conditions on membership behaviour and also started to put HIV on their meeting agendas, to ensure that members understood the impact of HIV and AIDS. Trusted members of social groups were often elected to attend various seminars on HIV and AIDS held by organisations, and to bring feedback to fellow group members. In a South African study family members with high levels of cognitive social capital were found to be better in communicating about sexual issues, giving them tools for negotiating sexual matters (Pronyk *et al.*, 2008a).

In the Kagera context, FBOs in particular seemed to constitute the link between community members, by bringing together those with various demographic and socio-economic characteristics. They utilised their power built on beliefs, values and norms to motivate both members and non-members to volunteer in community activities, and became sources of linking social capital, connecting those with influence to vulnerable groups such as widows, orphans and the poor. A study from Peru reported similar findings where organisations formed the connecting link between powerful and less powerful community members (De Silva, Harpham, Huttly, Bartolini & Penny, 2007). The role of religious organisations in building social capital is also supported by Adler and Kwon (2004), who argued that formal institutions and rules helped to shape network structures through their emphasis on beliefs and norms.

The contribution of social groups to social capital differs between rural and urban settings. In the urban and semi-urban villages I and II, women's groups were common, whereas the social groups in the more rural setting consisted of both women and men. However, an increasing female empowerment and involvement in community activities was observed in all villages, and the social groups had since become a major source of income generation. Almost all women were members of one or more social groups. Every group had an income generating activity and provided loans to its members as a way of empowering them economically. We also noticed changes in the traditional gender relations, which previously put women at a lower socio-economic status. Women, who used to stay at home and care for children and do household activities were stimulated, which empowered them to financial responsibilities. By providing loans and entrepreneurial skills to women, the social groups raised their socio-economic conditions both at household and community levels. Similar findings were reported in Bangladesh, where members of micro-credit groups were more powerful to make decisions, had more autonomy and smooth consultation with their spouses compared to non-members (Amin, Becker & Bayes, 1998). A change in gender roles was also observed in Peru, where women's organisations empowered them and thereby increased their contribution and access to social capital (De Silva *et al.*, 2007).

We suggest that women's empowerment has positive influence in the reduction of HIV transmission, by making women less dependent on men or commercial sex. In addition women's empowerment enhances confidence, which is important for sexual negotiating, including condom use. That women's empowerment and other interventions that address the socio-economic vulnerability of women may contribute to reductions in HIV risk behaviour is also emphasised in a study from South Africa (Pronyk *et al.*, 2008c). In the US context economic empowerment programmes enabling women to earn income, resulted in reduction in sexual partners and as well as commercial sex (Sherman, German, Cheng, Marks & Bailey-Kloche, 2006).

In the 1990s HIV and AIDS was recognised and experienced as a threat to the communities in Kagera. Thus, both existing and new social groups situated in the high HIV prevalence zone became agents of sexual behavioural change. HIV and AIDS caused many deaths, and given the low economic level of people, the majority of them were not capable either of supporting the burial ceremonies of their relatives nor the orphans left in their care. This increased the number of social groups aimed at providing support during bereavement and empowering people economically. These groups established strict rules, norms and values, which guided members' behaviour by, for example, excluding adulterers and heavy drinkers from membership and benefits. Since the majority of community members needed the support provided by social groups, there were several incentives for behavioural change. This change in behaviour indicates that social capital may have contributed to the declining trends of HIV prevalence in the urban setting, and helped to maintain low HIV prevalence in the more rural settings. This coincides with experiences from San Francisco, where the HIV decline among gay men was linked to rapid behavioural change caused by effective mobilisation and a socially active community provided with adequate resources (Wohfeiler, 2002).

Our results also indicate that strict behavioural membership rules may deny some community members access to certain forms of social capital. This may lead to the formation of new groups with less strict rules or to groups of "outsiders", which become potential risk groups for HIV. Campbell, Williams and Gilgen (2002) report similar findings from the South Africa mining community, where members of associations such as *stokvels* were more likely to drink alcohol and were found to have casual sexual partners, which increased their risk for HIV. The emphasis on regular contribution of money in our case villages put a strong pressure on poor people, sometimes beyond their ability. They then had to join groups with lower contribution demands, increasing the gap between rich and poor groups in the villages. This supports Bourdieu's (1986) statement that social capital may exclude members with lower resources from joining more resourceful networks, since social capital also can be used as a mechanism for ensuring transmission of resources among rich groups.

Conclusion

We argue that in the Kagera region, highly trusted organisations such as FBOs that focused on developing social relations and economic empowerment among community members have had the greatest impact on HIV transmission. We also claim that

people's participation in social groups (structural social capital) and the rules, values, norms, trust, and solidarity (cognitive social capital) that were developed by these groups influenced HIV transmission through changing risk behaviour. However, to understand the actual mechanisms for this influence we need further studies exploring people's own experiences of what involvement in organisations and social groups means for their health behaviour.

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