



Published in final edited form as:

AIDS Care. 2015 January ; 27(1): 112–122. doi:10.1080/09540121.2014.947236.

The effect of women's property rights on HIV: A search for quantitative evidence

Katherine Tumlinson^{a,*}, James C. Thomas^{a,b}, and Heidi W. Reynolds^b

Katherine Tumlinson: ktumlin@email.unc.edu; James C. Thomas: jim.thomas@unc.edu; Heidi W. Reynolds: heidi_reynolds@unc.edu

^aDepartment of Epidemiology, University of North Carolina at Chapel Hill, 135 Dauer Drive 2101 McGavran-Greenberg CB #7435, Chapel Hill, NC 27599-7435, USA

^bMEASURE Evaluation, University of North Carolina at Chapel Hill, 400 Meadowmont Village Circle, 3rd Floor, Chapel Hill, NC 27517, USA

Abstract

In recent years efforts to reduce HIV transmission have begun to incorporate a structural interventions approach, whereby the social, political, and economic environment in which people live is considered an important determinant of individual behaviors. This approach to HIV prevention is reflected in the growing number of programs designed to address insecure or nonexistent property rights for women living in developing countries. Qualitative and anecdotal evidence suggests that property ownership may allow women to mitigate social, economic, and biological effects of HIV for themselves and others through increased food security and income generation. Even so, the relationship between women's property and inheritance rights (WPIR) and HIV transmission behaviors is not well understood. We explored sources of data that could be used to establish quantitative links between WPIR and HIV. Our search for quantitative evidence included (1) a review of peer-reviewed and "grey" literature reporting on quantitative associations between WPIR and HIV, (2) identification and assessment of existing data sets for their utility in exploring this relationship, and (3) interviews with organizations addressing women's property rights in Kenya and Uganda about the data they collect. We found no quantitative studies linking insecure WPIR to HIV transmission behaviors. Data sets with relevant variables were scarce, and those with both WPIR and HIV variables could only provide superficial evidence of associations. Organizations addressing WPIR in Kenya and Uganda did not collect data that could shed light on the connection between WPIR and HIV, but two had data and community networks that could provide a good foundation for a future study that would include the collection of additional information. Collaboration between groups addressing WPIR and HIV transmission could provide the quantitative evidence needed to determine whether and how a WPIR structural intervention could decrease HIV transmission.

Keywords

ownership; socioeconomic factors; sexism; HIV infections/prevention and control; intervention studies; transmission; widowhood; condoms/utilization; wills; prostitution; food supply; income

*Corresponding author: ktumlin@email.unc.edu.

Many HIV prevention efforts are focused on biomedical technologies and the promotion of individual behavior change. However, a large and growing literature suggests that contextual factors such as the social, political, and economic environments in which people live, also play an important role in HIV transmission (Amon & Kasambala, 2009; J. Auerbach, 2009; Blankenship, Friedman, Dworkin, & Mantell, 2006; Cohen, Scribner, & Farley, 2000; Gupta, Parkhurst, Ogden, Aggleton, & Mahal, 2008; Kippax, 2008; Whelan, 1998). Structural interventions address circumstances beyond an individual's control, with the goal of transforming the living conditions that shape risks, opportunities, and choices (Cohen et al., 2000; Gupta et al., 2008). A recent evaluation of the President's Emergency Plan for AIDS Relief (PEPFAR) conducted by the Institute of Medicine (IOM), encouraged the incorporation and rigorous evaluation of structural interventions designed to prevent sexual transmission of HIV asserting that improved understanding of structural factors and the effects of structural interventions should be an integral part of PEPFAR moving forward (Institute of Medicine (IOM), 2013).

Working to secure the right of women to own and control property in countries where such rights for women remain insecure or non-existent is one example of the growing interest in structural interventions to prevent HIV. As more women become household heads in the wake of armed conflict and HIV-related mortality, ownership of land and property is thought to be an increasingly important component of women's economic security (Human Sciences Research Council, Associates for Development, & International Center for Research on Women, 2008; Sweetman, 2008; United Nations Human Settlements Programme (UN-HABITAT), 2006). Particularly in rural areas, access to land is considered of vital economic importance (Knox & Giovarelli, no date). The International Center for Research on Women, Oxfam International, and other development agencies have begun to call attention to the hypothesized relationship between HIV transmission and women's property and inheritance rights (WPIR) based on the knowledge that increased economic security increases the ability of women to successfully negotiate condom use and avoid transactional sex, and therefore may be a critical step in stopping HIV-related gender inequities (Sweetman, 2008). A study conducted in 2007 in Nicaragua was the first quantitative analysis to establish a significant association between women's land ownership and physical and sexual violence against women (Grabe, 2010). Given the known association between violence and risk of HIV transmission (Dunkle et al., 2004; Fuentes, 2008; Jewkes, Dunkle, Nduna, & Shai, 2010; Maman et al., 2002; Silverman, Decker, Saggurti, Balaiah, & Raj, 2008; World Health Organization, 2004), Grabe's study lends weight to the hypothesized relationship between WPIR and HIV transmission.

Securing property rights for women means guaranteeing the legal right of women to have a meaningful role in the sale, transfer, or rent of immovable property such as land and houses, as well as the right to maintain control over movable property such as livestock, furniture, kitchen utensils and any personal objects (Joireman, 2007; Sweetman, 2008). Secure property rights have been anecdotally and qualitatively linked to multiple beneficial outcomes including food production, income generation, and social acceptance (Dworkin et al., 2013; Joireman, 2007). Women without land ownership may also have less access to the inputs necessary to make land productive, feeding into a stereotype that women are not "real

farmers”, further limiting their access to land (Deere & Doss, 2006). Several scholars point to a growing body of literature that conceptualizes a relationship between secure property rights and the prevention of HIV infection (Kim, 2008; Nanda, 2008; Strickland, 2004; The Global Coalition on Women and AIDS (GCWA), No date; The International Center for Research on Women (ICRW), 2005).

Anecdotal and qualitative evidence points to the damaging consequences of women’s insecure property rights, namely forced prostitution (Oglethorpe, 2008) and widow inheritance (Okeyo & Allen, 1994). Qualitative research undertaken by the Human Sciences Research Foundation found that WPIRs helped to mitigate the impact of HIV in the rural Iganga district of Uganda, and urban Amajuba district of South Africa (Human Sciences Research Council et al., 2008). Women in Iganga reported using property to lessen the consequences of HIV and AIDS through increased food security and in some cases by renting out land or other property when women were unable to farm due to illness. Within Amajuba, the study found that ownership of property or housing provided a safe place for women suffering from intimate partner violence or the social stigma of HIV (Human Sciences Research Council et al., 2008; Yngstrom, 2002). This study provided qualitative evidence that insecure property rights affect a woman’s ability to alleviate the effect of HIV, but it was unable to link WPIRs with actual prevention of HIV infection.

Many challenges to WPIRs exist in developing countries. Customary tenure institutions typically provide access to land for women through men and it is unusual for women to inherit land from their fathers or to have any real ownership of the land they access through marriage (Knox & Giovarelli, no date). Additionally, even in countries with national legislation protecting WPIRs, cultural beliefs strongly discourage women’s ownership of land, especially in regions where productive land is scarce (Lockhart, 2008). Women may be unaware of their legal rights, may be discouraged from (or lack resources for) claiming their rightful inheritance, or may be subject to isolation and even physical violence if they do claim inheritance (Dworkin, Kambou, Sutherland, Moalla, & Kapoor, 2009). Finally, the privatization of land leaves many women with less access to land because the process for formalizing land ownership tends to favor placing only the name of the male spouse on the title, effectively eliminating rights for women (Ngwira, 2002).

Customary practices in the past ensured widows at least a small measure of security through access to some portion of family property. But these traditional structures of support have deteriorated as a result of the toll of the HIV crisis on local resources (Food and Agriculture Organization (FAO), 2008). As a result, many widows are subjected to property-grabbing, a practice in which relatives of the deceased repossess all marital property (Mendenhall et al., 2007). In such situations, women are often unable to obtain legal protection even when supportive policies are in place (Izumi, 2006). A study in Lusaka, Zambia found that despite legal protection in the form of wills, property grabbing continued to be a common practice (Mendenhall et al., 2007). Likewise, in Namibia, where there are laws against property-grabbing, many women were unaware of this protection, and the government was rarely able to enforce the law (Food and Agriculture Organization (FAO), 2003).

Despite wide-spread support for structural interventions, (Cohen et al., 2000; Gupta et al., 2008; Institute of Medicine (IOM), 2013; Kippax, 2008) such approaches remain under-utilized (Cohen et al., 2000) and their effectiveness has not been well-documented (Gupta et al., 2008; Parker, Easton, & Klein, 2000). This is likely due to challenges inherent to implementing (Blankenship et al., 2006; Parker et al., 2000) and rigorously evaluating policies and programs designed to fundamentally alter cultural and social norms and requiring political will (Amon & Kasambala, 2009; J. Auerbach, 2009; J. D. Auerbach, Parkhurst, Cáceres, & Keller, 2009; Frieden, 2010; Gilbert & Walker, 2002; Gupta et al., 2008). In addition, groups implementing structural interventions often do not have a mandate or the time and resources necessary to conduct rigorous evaluations (Gupta et al., 2008). It can also be difficult to link a particular outcome to a particular structural intervention (Blankenship et al., 2006; Sumartojo, Doll, Holtgrave, Gayle, & Merson, 2000). As a result, an HIV prevention intervention designed to alter laws and customs regarding a woman's right to own and control property will present real financial, political, methodological, and logistical challenges for both implementation and evaluation.

Human rights advocates champion the right of all people to secure adequate housing, regardless of gender or other personal attributes, calling on multiple international human rights covenants that recognize the obligation of governments to ensure equitable land access and ownership solely on the basis of human rights (The World Health Organization (WHO), 2012). This obligation is not contingent on the effect of secure property rights on health outcomes such as HIV. However, evidence of a causal association between WPIR and HIV prevention may help to prioritize the fulfillment of this basic human right, while also ensuring that structural interventions achieve public health benefits.

To establish quantitative connections between WPIR and HIV transmission, gender specific data are needed; particularly data on women's control of assets. To make an association with HIV, data related to HIV transmission behaviors (e.g., condom use and occurrences of transactional sex) or HIV infection (preferably through a confirmed test rather than self-reports) are also needed on the same women. We looked for such connections reported in the literature, and for datasets in which the connections could be made, including data collected by organizations addressing WPIR.

Methods

We identified relevant peer-reviewed and grey literature through electronic searches of *Pubmed* using the following MeSH search terms: ownership, women's rights, human rights, decision making, wills, widowhood, condoms/utilization, prostitution, sex worker, unsafe sex/psychology, risk-reduction behavior, HIV infection/transmission. We also reviewed relevant publications listed among the sources of the literature identified in our search, and we contacted individuals with expertise in WPIR and HIV at the Center for Housing Rights and Evictions, the Open Society Institute, the International Center for Research on Women, the International Food Policy Research Institute, and the Canadian HIV/AIDS Legal Network. We asked them about quantitative studies and databases that would allow for investigation of the relationship between WPIR and HIV.

To identify data sets that could be used for analyses of the relationship between women's control of assets and HIV transmission, we explored commonly known databases for appropriate variables, including the Demographic and Health Survey and the United Nations Food and Agriculture Organization (FAO) Gender and Land Rights Database. We also examined databases mentioned in the literature identified in our review. We contacted the investigators of data sets indicating inclusion of reliably collected data on both gender specific property ownership and HIV transmission behaviors or infection status to ask about the ability of the data to quantitatively assess any links between WPIR and HIV.

To determine whether organizations addressing WPIR collect data that could link WPIR and HIV, we identified and interviewed organizations in Kenya and Uganda with ongoing activities relevant to the intersection of property rights and HIV. These organizations were primarily identified using the search engine, Google, and key search terms included: Kenya, Uganda, HIV, AIDS, women, property rights, property ownership, inheritance rights, land rights, land tenure, land registration, disinheritance, property grabbing, legal aid, widows, orphans, paralegals, and legal education. Program identification also involved searching for references to programs in published reports, evaluations, and peer-reviewed and grey literature. Experts in WPIR and HIV in the USAID missions in Kenya and Uganda were also consulted for program recommendations. Identified organizations received an introductory letter from the in-country USAID mission encouraging participation in an email survey designed to gain in-depth programmatic information. Organizations received follow-up emails and reminder calls to encourage participation in the self-administered survey via email. The survey questions pertained to program activities in property rights and HIV, program reach and impact, perceptions of implementation successes and challenges, monitoring and measurement of program success, and lessons learned. Information about any data collected and recorded in association with WPIR and/or HIV programming, and how the data were organized, stored, and accessed was also sought. Upon receipt of the completed surveys, follow-up was conducted to clarify information and request further program documentation.

Two of the eleven organizations were selected for a site visit and case study because they reported the highest levels of data collection and/or program evaluation in the survey.

Results

Literature

A total of 135 publications met our search criteria. They included 86 peer-reviewed journal articles, seven books, and 34 reports. The remaining eight items included a pamphlet, a newspaper article, a thesis, and publications within an on-line series and web pages. Of the 86 peer-reviewed articles, 15 were based on quantitative data, and one of the quantitative peer-reviewed articles investigated linkages between WPIR and HIV transmission (Muchomba, Wang, & Agosta, 2014).

The first quantitative study to investigate linkages between HIV transmission and land ownership by women, Muchomba et al (2014) used cross-sectional data from the 1998, 2003, and 2008–09 Kenya Demographic and Health Surveys. This study found an

association between land ownership and HIV risk behavior including a modest reduction in the number of sexual partners among women land owners as well as reduced likelihood of engaging in transactional sex. Although not without limitations, including use of cross-sectional and self-reported data, these study findings support the hypothesis that WPIRs may reduce HIV transmission.

Datasets

We identified 12 data sources containing relevant variables (Table 1) (MEASURE Evaluation, 2013a). They varied greatly in terms of their inclusion of indicators to assess the relationship between WPIR and HIV. Three datasets - INDEPTH, the Zambia Food Security Survey, and the Ethiopian Rural Household Survey - collected data on aspects of land use or land ownership but did not capture data on women's ability to own land or other assets and also did not include data on HIV incidence or prevalence. Datasets with information on women's property rights included the Kagera Health and Development Survey, Early Impacts of Land Registration and Certification on Women in Southern Ethiopia, and the FAO's Gender and Land Rights Database. These datasets offer valuable information on customs and policies influencing the ability of women to own and/or inherit land or other property, but they do not include any information on HIV transmission behaviors or infection status. The following three additional data sources consider issues of both land tenure and HIV transmission, but without separate information for men and women: The Manicaland HIV/STD Prevention Project (includes indicators on transactional sex and obtains blood samples for measuring HIV status), the FAO HIV/AIDS impact surveys, and the World Bank's World Development Indicators (measures both HIV prevalence and the number of procedures and time necessary to register property).

Of the identified data sources, three had potential to provide some information on the association between women's ownership of property and their vulnerability to HIV. (1) The Malawi Longitudinal Study of Families and Health included a women's questionnaire with questions about her ownership of land, her ability to negotiate condom use, her practice of transactional sex, and her self-reported HIV status. (2) For select countries, the Demographic and Health Survey's Women's Questionnaire includes indicators of the women's marital status, ownership of a house or land, and self-reported sexually transmitted infection. (3) In April 2013, the World Bank made available a database that includes gender statistics on land ownership and HIV prevalence. However, the data are available only in the aggregate at the country level, not allowing for the assessment of individual level associations.

Data collected by organizations

We identified 43 organizations addressing WPIR and HIV in Kenya and Uganda (MEASURE Evaluation, 2013b). Of these, 11 (26%) completed the initial survey. Most of the organizations placed greater emphasis on the provision of WPIR legal services (e.g., legal aid, education, and advocacy) than on HIV services (e.g., prevention, care, and treatment or other support services). The programs addressing WPIR most often focused on the identification and resolution of property grabbing cases. Efforts typically involved a combination of legal education and awareness raising efforts about WPIR in the community,

training on the necessary documentation to prevent property grabbing, and mediation assistance facilitated by either paralegals or lawyers.

Several organizations providing home-based HIV care reported hearing stories of property grabbing, and groups working on WPIR noted that widows and orphans affected by HIV comprised a large proportion of their client population. All of the 11 included organizations reported working to mitigate the impact of HIV/AIDS, and all reported working to raise awareness of women's rights and greater access to legal protections (Table 2). Various limited attempts were made to provide services for both WPIR and HIV. However, organizations addressing one set of issues would rarely interact with groups addressing the other set.

Most programs lacked routine and rigorous data collection and evaluation, often because the organization and staff did not have sufficient resources or technical capacity. For those able to monitor their activities, most captured and stored the data for HIV and WPIR separately, without a view to looking at connections between them. Only one organization maintained a database that could produce basic reports combining data on both HIV and WPIR. Many of the programs found it difficult to secure funding to integrate and jointly monitor HIV and WPIR activities, stating that donors tended to fund one area or the other, but typically not both.

Of the organizations visited, two showed notable promise and are well placed for productive collaboration¹: the International Justice Mission (IJM) in Uganda and Grass Roots Organizations Operating Together in Sisterhood (GROOTS) in Kenya. GROOTS is a network of grassroots organizations led by local women interested in enacting positive change in their communities, with an emphasis on identifying social and economic issues directly impacting women. The two major initiatives of GROOTS were: (1) home-based caregivers who monitored the health of HIV positive clients and link them with health facilities in their communities, and (2) watch dog groups who identified potential WPIR violations and attempted to mediate disputes. Home-based caregivers collected household-level data on a paper-based system, while watch dog groups had yet to develop systematic data collection. Some groups, however, tracked the number of property rights cases they handled annually and the status of these cases.

IJM Kampala is a legal organization combating several forms of injustice affecting marginalized populations, including the practice of property-grabbing. Their primary services were legal education to community members in regions with a high prevalence of property grabbing, as well as legal services designed to prevent disinheritance or property grabbing. IJM also provided aftercare services to victims of property grabbing in the form of economic self-sufficiency, health status, psychosocial stability, social/community support, food supply, housing, and children's education. IJM routinely collected client monitoring data as well as data on case-related activities. Additionally, they collected longitudinal data to determine whether the prevalence of property grabbing had decreased since the availability of IJM services.

¹It is possible other organizations that did not participate in our survey may also be well placed for collaboration.

Discussion

Through three methods of inquiry we found little quantitative evidence of connections between WPIR and HIV and few opportunities to quantify those connections. Our literature review revealed anecdotal and qualitative evidence suggesting negative consequences of insecure property rights for women; however we were able to locate only one quantitative study demonstrating a possible relationship between WPIR and HIV transmission. Qualitative research conducted in Uganda and South Africa indicated property rights may allow women to avoid some of the more severe consequences of HIV through increased food security and income generation. However, in neither location did study results show a definitive link between secure property rights and the ability of women to negotiate condom use or refuse unwanted sex (Human Sciences Research Council et al., 2008; Yngstrom, 2002).

The dearth of quantitative data to link WPIR and HIV results from two principle constraints: over-aggregation and siloed thinking. Of the studies investigating land tenure and secure property rights, many fail to include indicators of ownership that are gender specific, obviating an assessment of a women's property and inheritance rights independently of her husband's (Sweetman, 2008). Moreover, the studies that do disaggregate property rights by gender often do not collect HIV-related data; those that do often rely on self-reported HIV status. Collecting superficial data on one factor or none at all is an indication of siloed practices and suggests weak interest in the intersection of the two factors.

The data collection of organizations in Kenya and Uganda, including IJM and GROOTS, provided further evidence of siloed activities. A qualitative study using in-depth interviews and conducted in Western Kenya in 2011 in collaboration with GROOTS identified strategies, barriers, and facilitators for successful prevention and resolution of WPIR violations and also called for more rigorous research into the impact of WPIR programs on HIV prevention (Dworkin et al., 2014; Lu et al., 2013). The possibility remains that one or more of the organizations not responding to our request for information collected data on both WPIR and HIV. However, an organization doing so would likely be relatively large and well resourced, and less likely than the smaller ones to fail to interact with us.

Future directions

Many HIV prevention programs lack staff trained in levels of analysis beyond the individual. A multi-disciplinary approach and appropriate study design skills will be necessary for the successful design and implementation of a structural HIV prevention intervention. Collaborations between academic institutions and community based organizations will be instrumental to production of informative and reliable study results. To quantify the relationship between WPIR and HIV transmission it will be necessary to implement studies specifically designed to investigate associations between the two. No single study is likely to address all of the relevant questions, and a variety of study designs can provide quantitative insights. A study design that would be particularly informative would be longitudinal, allowing for the identification of causal relationships; and multi-level, allowing for both aggregate-level (e.g., property laws and local traditions) and individual-level factors (e.g., instances of transactional sex). Studies in multiple countries or

ethnic areas would provide insights into how practices vary by culture and legal setting, perhaps bringing to light variations in the link between property rights and HIV transmission behaviors. We suggest questionnaire items that pertain to the following aspects of property rights:

At the individual-level

- Type of land tenure (private, common, collective)
- Type of property right (right to use, control, transfer)
- Existence of a legally recognized will (for widows)
- Instances of being forced to leave land or forfeit property following the death of a spouse

At the aggregate-level

- Proportion of landholders who are women
- Proportion of holdings under co-ownership between the husband and wife
- Number of rural households headed by women
- Tenure security (ability to defend and enforce land rights)

Relevant questions addressing HIV transmission include

- Instances of involuntary sex
- Instances of transactional sex
- Condom use during sex
- Ability to negotiate condom use
- Knowledge of the partner's HIV status before engaging in sex
- HIV infection status (preferably laboratory-confirmed)

One option for obtaining these data would be to identify an organization or study currently collecting some of the variables and provide the means to collect supplemental data. IJM and GROOTS, mentioned above, both showed promise for such an approach. IJM had relatively extensive data on individual cases of property rights that potentially could be supplemented with HIV-related data. GROOTS had an extensive grassroots network that could potentially offer a large and diverse population to study.

Conclusion

We found no quantitative evidence confirming a causal relationship between women's land tenure and secure property rights and HIV transmission as well as a scarcity of datasets available for studying this relationship. This does not mean the relationship does not exist. The qualitative reports describe convincingly how WPIR can affect HIV transmission. Moreover, the absence of quantitative evidence of an association is not to be confused with the presence of quantitative studies showing no association. Rather, the quantitative studies

simply have not been done. This results in part from two perspectives – rights and HIV epidemiology – that have failed to establish common ground on this particular question. Although we did not identify an existing dataset to begin to explore the intersection of WPIR and HIV, we did see in a few of the East African organizations opportunities to utilize their data or their access to relevant populations as a platform for studying the relationship. Whether by that route or another, establishing quantitative connections will be essential for guiding any interventions in women’s property rights with the intent of also decreasing HIV transmission.

Acknowledgments

Funding for this paper was provided by the US Agency for International Development (USAID) through the MEASURE Evaluation project and cooperative agreement GHA-A-00-08-00003-00. The views expressed in this publication do not necessarily reflect the views of USAID or the United States government. We are grateful to the Carolina Population Center (R24 HD050924) for general support. The study component addressing organizations in Kenya and Uganda was conducted through a sub-contract with the International Center for Research on Women. The authors particularly thank Anne Stangl and Laura Brady for their contributions to this component.

References

- Amon JJ, Kasambala T. Structural barriers and human rights related to HIV prevention and treatment in Zimbabwe. *Glob Public Health*. 2009; 4(6):528–545. 909933651 [pii]. 10.1080/17441690802128321 [PubMed: 19326281]
- Auerbach J. Transforming social structures and environments to help in HIV prevention. *Health Affairs*. 2009; 28(6):1655. [PubMed: 19887406]
- Auerbach, Judith D.; Parkhurst, Justin O.; Cáceres, Carlos F.; Keller, Kimberly E. Addressing social drivers of HIV/AIDS: Some conceptual, methodological, and evidentiary considerations. *New York: aids*. 2009; 2031:550–570.
- Blankenship KM, Friedman SR, Dworkin S, Mantell JE. Structural interventions: concepts, challenges and opportunities for research. *Journal of Urban Health*. 2006; 83(1):59–72. [PubMed: 16736355]
- Cohen DA, Scribner RA, Farley TA. A structural model of health behavior: a pragmatic approach to explain and influence health behaviors at the population level. *Preventive Medicine*. 2000; 30(2): 146–154. [PubMed: 10656842]
- Deere, Carmen Diana; Doss, Cheryl R. U. W. I. f. D. E. Research. *Gender and the Distribution of Wealth in Developing Countries*. Helsinki; Finland: 2006.
- Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntyre JA, Harlow SD. Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa. *Lancet*. 2004; 363(9419):1415–1421. 10.1016/s0140-6736(04)16098-4 [PubMed: 15121402]
- Dworkin SL, Grabe S, Lu T, Hatcher A, Kwena Z, Bukusi E, Mwaura-Muiru E. Property rights violations as a structural driver of women’s HIV risks: a qualitative study in Nyanza and Western Provinces, Kenya. *Arch Sex Behav*. 2013; 42(5):703–713. 10.1007/s10508-012-0024-6 [PubMed: 23179234]
- Dworkin SL, Kambou SD, Sutherland C, Moalla K, Kapoor A. Gendered empowerment and HIV prevention: policy and programmatic pathways to success in the MENA region. *J Acquir Immune Defic Syndr*. 2009; 51(Suppl 3):S111–118. 10.1097/QAI.0b013e3181aafd78 [PubMed: 19553778]
- Dworkin SL, Lu T, Grabe S, Kwena Z, Mwaura-Muiru E, Bukusi E. What community-level strategies are needed to secure women’s property rights in Western Kenya? Laying the groundwork for a future structural HIV prevention intervention. *AIDS Care*. 2014; 26(6):754–757. 10.1080/09540121.2013.845286 [PubMed: 24116828]
- Food and Agriculture Organization (FAO). *HIV/AIDS and agriculture: impacts and responses Case studies from Namibia, Uganda and Zambia*. 2003.
- Food and Agriculture Organization (FAO). (Module 4) *Protecting Women’s Land and Property Rights in the Context of AIDS*. 2008.

- Frieden TR. A framework for public health action: the health impact pyramid. *Am J Public Health*. 2010; 100(4):590–595. AJP.2009.185652 [pii] . 10.2105/AJPH.2009.185652 [PubMed: 20167880]
- Fuentes, Catherine Mitchell. Pathways from interpersonal violence to sexually transmitted infections: a mixed-method study of diverse women. *Journal of Women's Health*. 2008; 17(10):1591–1603.
- Gilbert L, Walker L. Treading the path of least resistance: HIV/AIDS and social inequalities--a South African case study* 1. *Social science & medicine*. 2002; 54(7):1093–1110. [PubMed: 11999505]
- Grabe, Shelly. Promoting gender equality: The role of ideology, power, and control in the link between land ownership and violence in Nicaragua. *Analyses of Social Issues and Public Policy*. 2010; 10(1):146–170.
- Gupta GR, Parkhurst JO, Ogden JA, Aggleton P, Mahal A. Structural approaches to HIV prevention. *Lancet*. 2008; 372(9640):764–775. S0140-6736(08)60887-9 [pii]. 10.1016/S0140-6736(08)60887-9 [PubMed: 18687460]
- Human Sciences Research Council, Associates for Development, & International Center for Research on Women. *Women's Property Rights HIV and AIDS & Domestic Violence*. Cape Town, South Africa: HSRC Press; 2008.
- Institute of Medicine (IOM). *Evaluation of PEPFAR*. Washington, DC: The National Academies Press; 2013.
- Izumi, Kaori. *Women's Property Rights and Livelihoods in the Context of HIV and AIDS*. 2006
- Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet*. 2010; 376(9734):41–48.10.1016/S0140-6736(10)60548-x [PubMed: 20557928]
- Joireman, SF. *An Unholy Trinity: AIDS, Poverty and Insecure Property Rights for Women in Africa*. Paper, D., editor. Department of Politics and International Relations Wheaton College; 2007.
- Kim, Julia Paul Pronyk; Barnett, Tony; Watts, Charlotte. Exploring the role of economic empowerment in HIV prevention. *AIDS*. 2008; 22(supp 4):S57–S71. [PubMed: 19033756]
- Kippax S. Understanding and integrating the structural and biomedical determinants of HIV infection: a way forward for prevention. *Current Opinion in HIV and AIDS*. 2008; 3(4):489. [PubMed: 19373010]
- Knox, Anna; Giovarelli, Renee. *LAND TENURE, PROPERTY RIGHTS, AND HIV/AIDS: USAID*. no date
- Lockhart C. The life and death of a street boy in East Africa: everyday violence in the time of AIDS. *Med Anthropol Q*. 2008; 22(1):94–115. [PubMed: 18610815]
- Lu T, Zwicker L, Kwena Z, Bukusi E, Mwaura-Muiru E, Dworkin SL. Assessing barriers and facilitators of implementing an integrated HIV prevention and property rights program in Western Kenya. *AIDS Educ Prev*. 2013; 25(2):151–163.10.1521/aeap.2013.25.2.151 [PubMed: 23514082]
- Maman S, Mbwapo JK, Hogan NM, Kilonzo GP, Campbell JC, Weiss E, Sweat MD. HIV-positive women report more lifetime partner violence: findings from a voluntary counseling and testing clinic in Dar es Salaam, Tanzania. *Am J Public Health*. 2002; 92(8):1331–1337. [PubMed: 12144993]
- MEASURE Evaluation. *Fact Sheet: Data Sources for Investigating the Relationship Between WPIR and HIV Transmission Behaviors*. 2013a
- MEASURE Evaluation. *Protecting the Land and Inheritance Rights of HIV-Affected Women in Kenya and Uganda: A Compendium of Current Programmatic and Monitoring and Evaluation Approaches*. Carolina Population Center, University of North Carolina; Chapel Hill: 2013b.
- Mendenhall E, Muzizi L, Stephenson R, Chomba E, Ahmed Y, Haworth A, Allen S. Property grabbing and will writing in Lusaka, Zambia: an examination of wills of HIV-infected cohabiting couples. *AIDS Care*. 2007; 19(3):369–374. 777064953 [pii] . 10.1080/09540120600774362 [PubMed: 17453571]
- Muchomba FM, Wang JS, Agosta LM. Women's land ownership and risk of HIV infection in Kenya. *Soc Sci Med*. 2014; 114:97–102.10.1016/j.socscimed.2014.05.055 [PubMed: 24922606]
- Nanda P. Drawing conceptual linkages: property rights and HIV. *HIV AIDS Policy Law Rev*. 2008; 13(2–3):84–85. [PubMed: 19297773]
- Ngwira N. *Women's Property and Inheritance Rights and the Land Reform Process in Malawi*. 2002

- Oglethorpe, Judy Nancy Gelman. AIDS, women, land, and natural resources in Africa: current challenges. *Gender and Development*. 2008; 16(1):85–100.
- Okeyo TM, Allen AK. Influence of widow inheritance on the epidemiology of AIDS in Africa. *Afr J Med Pract*. 1994; 1(1):20–25. [PubMed: 12287807]
- Parker RG, Easton D, Klein CH. Structural barriers and facilitators in HIV prevention: a review of international research. *AIDS*. 2000; 14:S22. [PubMed: 10981471]
- Silverman JG, Decker MR, Saggurti N, Balaiah D, Raj A. Intimate partner violence and HIV infection among married Indian women. *JAMA*. 2008; 300(6):703–710.10.1001/jama.300.6.703 [PubMed: 18698068]
- Strickland, Richard. To have and to hold: Women's property and inheritance rights in the context of HIV/AIDS in sub-saharan Africa. Washington, DC: International Center for Research on Women; 2004.
- Sumartojo, Esther; Doll, Lynda; Holtgrave, David; Gayle, Helene; Merson, Michael. Enriching the mix: incorporating structural factors into HIV prevention. *AIDS*. 2000; 14:S1–S2. [PubMed: 10981468]
- Sweetman, Caroline. O International. How title deeds make sex safer: women's property rights in an era of HIV. 2008.
- The Global Coalition on Women and AIDS (GCWA). Economic security for women fights AIDS. Geneva: The Global Coalition on Women and AIDS, UNAIDS; No date.
- The International Center for Research on Women (ICRW). Property ownership for women enriches, empowers and protects. ICRW and Millenium Project. 2005
- The World Health Organization (WHO). The Right to Health, Factsheet. 2012. from <http://www.who.int/mediacentre/factsheets/fs323/en/index.html>
- United Nations Human Settlements Programme (UN-HABITAT). Progress report on removing discrimination against women in respect of property and inheritance rights. 2006
- Whelan D. Human rights approaches to an expanded response to address women's vulnerability to HIV/AIDS. *Health Hum Rights*. 1998; 3(1):20–36. [PubMed: 10347373]
- World Health Organization. Gender-based violence and HIV/AIDS: Critical Intersections-Intimate Partner Violence and HIV/AIDS. 2004 Information Bulletin Series, Number 1.
- Yngstrom I. Women, wives and land rights in Africa: Situating gender beyond the household in the debate over land policy and changing tenure systems. *Oxford Development Studies*. 2002; 30(1): 21–40.

Table 1
Survey tools with potential utility for investigating women’s property and inheritance rights and HIV

Name of Survey Tool or Organization	Location of Survey Tool	Relevant questions/indicators/variables
1 The Malawi Longitudinal Study of Families and Health (formerly known as the Malawi Diffusion and Ideational Change Project)	http://malawi.pop.upenn.edu/sites/www.pop.upenn.edu/files/M3questionnaire_women_finalSB.pdf	<ul style="list-style-type: none"> • Do you yourself own any land? • Where did you get the land from? • Did you use a condom with your most recent partner? • In general, with what frequency did you use a condom with your most recent partner? • The last time you had sex with your most recent partner, did he give you money or gifts for sex? • In your opinion, what is the likelihood that you are infected with HIV/AIDS now?
2 The International Network for the Demographic Evaluation of Populations and Their Health (INDEPTH)	http://www.indepth-network.org/index.php?option=com_content&task=view&id=98&Itemid=186	INDEPTH has a questionnaire that collects basic information on topics related to the environment, including land use, but does not disaggregate by gender.
3 Kagera Health & Development Survey (KHDS); conducted by Economic Development Initiatives (EDI)	http://www.edi-africa.com/docs/khds/KHDS2%20Community.pdf	<ul style="list-style-type: none"> • If husband dies, is it customary for the wife to inherit their land, house, or other property? • When a man dies, who settles the inheritance? • Have there been any inheritance disputes in the past 12 months? • How many such disputes have there been?
4 Zambia Food Security Survey	http://www.aec.msu.edu/fs2/zambia/LCMS96_Individual.pdf	<ul style="list-style-type: none"> • Have you ever approached any political public official about a land dispute and whom did you last approach for this problem?
5 Manicaland HIV/STD Prevention Project	http://www.manicalandhivproject.org/uploads/4/7/1/9/4719905/e-individual_r5.pdf	<ul style="list-style-type: none"> • Have you ever been involved in a non-marital relationship of any kind where you received anything in exchange for sex? • What caused you to sell sex for the first time? • Blood sample obtained.
6 Demographic and Health Survey Women’s Individual Questionnaire	http://www.measuredhs.com/What-We-Do/Survey-Types/DHS.cfm	<ul style="list-style-type: none"> • What is your marital status now: are you widowed, divorced, or separated? • Do you own this or any other house either alone or jointly with someone else?

Name of Survey Tool or Organization	Location of Survey Tool	Relevant questions/indicators/variables
		<ul style="list-style-type: none"> Do you own any land either alone or jointly with someone else? During the last 12 months, have you had a disease which you got through sexual contact?
7 Early impacts of land registration and certification on women in Southern Ethiopia	See Appendix 2: http://www.unhabitat.org/downloads/docs/10768_1_594333.pdf	<ul style="list-style-type: none"> In case of divorce today, how much of the land registered on this household would you get? Do you agree with joint titling of husband and wife? Does the wife's name on the certificate, affect her power over the land? Do you think that female-headed households, orphan households and other poor households should be allowed to sharecrop out all their land when they lack resources to cultivate it themselves? In case of divorce today, do you expect to keep any of the land of this household? In case of death of husband, how much land would you keep? Do you have any money or physical asset (e.g. livestock, enset stock, other trees) of your own that you alone can decide how to use?
8 The Food and Agriculture Organization of the United Nations (FAO) Gender and Land Rights database	http://www.fao.org/gender/landrights/en/	Land related statistics are missing for most African countries in this database.
9 The Food and Agriculture Organization of the United Nations (FAO) Integrated Support to Sustainable Development and Food Security Programme (IP)	ftp://ftp.fao.org/sd/SDW/SDWW/ip_summary_2003-webversion.pdf	A 36-page report presents case studies and key findings from HIV/AIDS impacts surveys in rural areas in Namibia, Uganda and Zambia.
10 Ethiopian Rural Household Survey by the Center for the Study of African Economies (CSAE)	http://www.csae.ox.ac.uk/datasets/Ethiopia-ERHS/erhs/questions-erhs.html	This questionnaire, conducted in rural Ethiopia in 1995, collected data on household and agricultural assets, health, nutrition, and fertility, but unfortunately does not contain any indicators to capture women's ownership of land or other assets. Additionally, no information is included on HIV, STIs, or sexual behavior/negotiation of condom use.
11 The World Bank, World Development Indicators	http://databank.worldbank.org/ddp/home.do?Step=2&id=4&DisplayAggregation=N&SdmxSupported=Y&CNO=2&SET_BRANDING=YES	<ul style="list-style-type: none"> Time required to register property (days) Procedures to register property (number) CPIA property rights and rule-based governance rating (1=low to 6=high) CPIA gender equity rating (1=low to 6=high)

Name of Survey Tool or Organization	Location of Survey Tool	Relevant questions/indicators/variables
12 The World Bank <ul style="list-style-type: none"> • Gender Statistics • Women, Business, and the Law 	http://data.worldbank.org/data-catalog/gender-statistics http://wbi.worldbank.org/data/exploretopics/using-property	<ul style="list-style-type: none"> • Prevalence of HIV, by gender • Female adults with HIV (% of population ages 15+ with HIV) • Land owners, female (% of adult population) • Do unmarried men and unmarried women have equal ownership rights to moveable or immovable property? • Do married men and married women have equal ownership rights to moveable or immovable property? • Do sons and daughters have equal inheritance rights to moveable or immovable property from their parents? • Do female and male surviving spouses have equal inheritance rights to moveable or immovable property? • In the case of the death of one of the spouses, does the surviving spouse, regardless of gender, have equal inheritance rights to the marital home?

Table 2

Select organizations in Kenya and Uganda working on women's property and inheritance rights and their respective programmatic activities and gender strategies

	ORGANIZATION												
	Kenya				Uganda								
	GROOTS	KELIN	YWAP	GWED-G	LJM	AHURO	LEMU	SWID	UCOBAC	UGANET	ULA		
TYPE OF PROPERTY RIGHTS ACTIVITIES													
Legal Aid		•	•	•	•	•	•	•	•	•	•	•	•
Legal Education	•	•	•	•	•	•	•	•	•	•	•	•	•
Public Advocacy/Awareness Raising	•	•	•	•	•	•	•	•	•	•	•	•	•
Legal Reform/Policy Work		•			•		•			•		•	•
Titling/Registration		•		•	•		•			•		•	•
Research	•		•		•		•			•		•	•
Financial Support for Housing/Temporary Shelter		•	•		•		•			•		•	•
Other				.2	.3		.4						
TYPE OF HIV ACTIVITIES													
Prevention					•								
Care	•				•					•			
Treatment	•				•					•			
Legal Reform/Policy Work		•								•			
Mitigation	•	•	•	•	•	•	•	•	•	•	•	•	•
Education/Awareness raising		•		•		•				•		•	•
Psychosocial support			•		•					•			
Research	•												
Other			.5										
GENDER STRATEGIES													
Customary Norms & Practices		•	•		•	•	•	•	•	•	•	•	•
Raising Awareness of Women's Rights	•	•	•	•	•	•	•	•	•	•	•	•	•
Women's Participation in Communities/Public Life	•	•	•	•	•	•	•	•	•	•	•	•	•

	ORGANIZATION										
	Kenya					Uganda					
	GROOTS	KELIN	YWAP	GWED-G	LJM	AHURO	LEMU	SWID	UCOBAC	UGANET	ULA
Legal Protection/Access to Justice for Women	•	•	•	•	•	•	•	•	•	•	•
Women's Access to Income/Productive Resources	•	•	•	•	•	•	•	•	•	•	•
Reducing Gender Based Violence											
Addressing Male Norms & Behaviors	•										

GROOTS: Grassroots Organizations Operating Together in Sisterhood; **KELIN:** Kenya Legal and Ethical Issues Network on HIV and AIDS; **YWAP:** Young Widows Advancement Program; **GWED-G:** Gulu Women Empowerment and Globalization; **LJM:** International Justice Mission; **AHURO:** Action for Human Rights Organization; **LEMU:** Land and Equity Movement Uganda; **SWID:** Slum Women's Initiative for Development; **UCOBAC:** Uganda Community Based Association for Child Welfare; **UGANET:** Uganda Network on Law, Ethics and HIV/AIDS; **ULA:** Uganda Land Alliance

² Material and emotional support to women victims of land grabbing (landless women support groups)

³ Material and emotional support to victims of land grabbing, monitoring of the justice system, boundary mapping

⁴ Boundary tree planting and mapping

⁵ Succession planning with people living with HIV (PLHIV)