

Sexual Violence Against Women in the DRC: Population-based Estimates and Determinants

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Background & motivation for the study

- The conflict in the DRC and large-scale sexual violence has received increasing attention in the popular press; in Washington, DC; and in the UN over the past couple of years
- Popular press, reports, and peer-reviewed articles refer to the “tens of thousands” of women who have been raped over course of this conflict.
- Despite high-quality regional and sample-specific quantitative evidence and qualitative studies, there is a lack of nationally representative estimates and risk factors across typologies of sexual violence.

Review of data-based estimates

(1)	(2)	(3)	(4)
Authors (year)	Geographic focus	Source of data/methodology	Number/estimates of violence
Harvard Humanitarian Initiative & Oxfam International (2010)	Bukavu, Sud-Kivu	Retrospective cohort study at the Panzi Hospital	<ul style="list-style-type: none"> ▪ N=4,311 records ▪ 52% identified armed combatants as perpetrators ▪ Proportion of civilian rapes increased 17-fold ▪ Mean number of assailants= 2.5.
Longombe, Claude & Ruminjo (2008)*	Goma, Nord-Kivu	Record review at the Doctors on Call for Service/HEAL Africa Hospital	<ul style="list-style-type: none"> ▪ N=4,715 cases of women and girls
Ministere du Plan & Macro International (2008)	DRC	Demographic and Health Survey	<ul style="list-style-type: none"> ▪ 16% women ever experienced forced sex ▪ 4 % in the last 12 months
Ohambe et al. (2005; International Alert)	Sud-Kivu	Focus groups and in depth interviews	<ul style="list-style-type: none"> ▪ N=492 women and girls aged 12 to 70 ▪ 21.3% experienced individual rape and 79% experienced gang rape (average of 4.5 attackers per victim)

Data-based estimates (cont.)

(1)	(2)	(3)	(4)
Authors (year)	Geographic focus	Source of data/methodology	Number/estimates of violence
Onsrud et al. (2008)*	Bukavu, Sud-Kivu	Record review at the Panzi Hospital	<ul style="list-style-type: none"> ▪ N= 604 fistula patients ranging from 3 to 45 years old ▪ 4% reported having been raped
Pham, Vinck & Weinstein (2010)*	Nord-Kivu, Sud-Kivu, Ituri District in Oriental	Multi-stage random cluster household survey	<ul style="list-style-type: none"> ▪ N=396 cases of rape ▪ 15.8% of all reporting men and women report SV
Steiner et al. (2009)*	Sud-Kivu	Rapes registered to the Malteser International medico-social support program	<ul style="list-style-type: none"> ▪ N=20,517 rape survivors (women and girls) ▪ 66% treated for sexually transmitted infections in 2005
Taback, Painter & King (2008)*	All DRC; Sud-Kivu, Orientale, and Nord-Kivu	United Nations Organization Mission in DR Congo (MONUC) monthly human rights reports	<ul style="list-style-type: none"> ▪ 218 reports involving 500 abused persons ▪ 210 reports (96%) were female
Van Herp et al. (2003; Medecins Sans Frontieres)*	Equateur, Katanga, Bas-Congo, Bandundu	Household survey using two stage random cluster sample design	<ul style="list-style-type: none"> ▪ 188 cases out of 3620 households (~5%)

Aim of the paper:

Provide data-based estimates and determinants of rape and intimate partner sexual violence (IPSV) in the DRC using household survey data in conjunction with national population estimates

- **Hypothesis 1**: Previous estimates of SV relying on facility data and/or police reports are gross underestimates of SV found in population-based data;
- **Hypothesis 2**: Women in Nord- and Sud-Kivu will be at higher risk of SV;
- **Hypothesis 3**: IPSV is a major contributing factor to violence against women in the DRC.

Data: Sexual violence estimates

Democratic Republic of Congo Demographic and Health Survey 2007 (DRC-DHS)

- Population-level household survey collected by DRC government (Ministry of Planning with support from the Ministry of Health) with funding and technical assistance from Macro International and USAID;
- First ever DHS data collection effort in DRC;
- Fielded from January-August 2007 ;
- Final total sample 9,995 women ages 15-49 years (reproductive age) in all 11 provinces;
- Randomly assigned module on domestic violence on a sub-sample of 3,436 women.

Data: Population estimates

We replicate our analysis using two sources of population estimates:

1. Population estimates for 2006 used by Ministry of Planning, National Institute of Statistics (NIS). Reported in the national health plan *Annuaire Sanitaire* released in 2008.
2. Expanded Vaccination Program [*Programme Elargi de Vaccination (PEV)*] projected population in 2007. Official estimates used by the Ministry of Health.

Outcome Indicators

- Ever raped: (1) first sexual intercourse was against her will or (2) ever forced to have sexual intercourse against her will
- Rape in past 12 months: forced to have sexual intercourse against her will in past 12 months
- Intimate partner sexual violence: IPSV if ever-married or ever-cohabited women responded affirmatively ('often' or 'sometimes', in contrast to 'no') to questions:
 - Has your current or past partner ever physically forced you to have sexual intercourse
 - Has your current or past partner ever physically forced you to perform sexual acts against your will

Estimating levels of sexual violence

- Multiply the proportion reporting each type of SV by the estimated number of women by province in each five-year age interval

$$(1) X_{ar} = \text{---} * P_{ar}^f$$

- Sum each age-specific, provincial count of the SV estimates to obtain provincial totals

(2)

- Sum the 11 provincial totals to produce a national estimate of each type of SV

(3)

- Finally, we determine the provincial and national rates per 1,000 women of reproductive age:

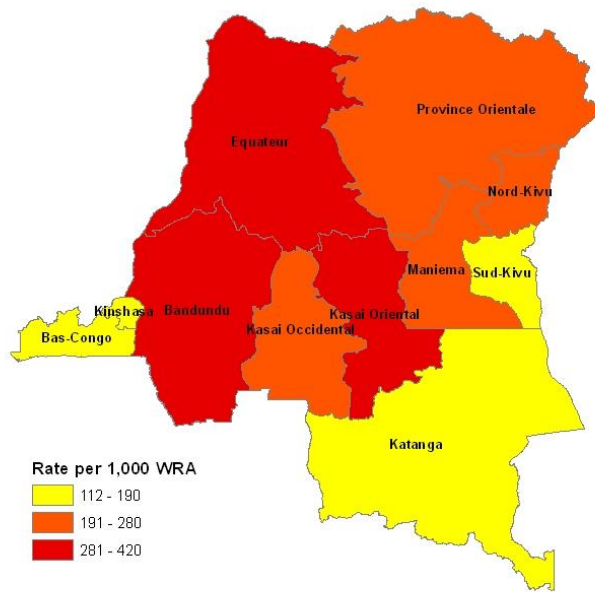
$$(4) \text{ Rate of SV} = (X/P_{15-49}^f) * 1,000$$

Determinants of SV

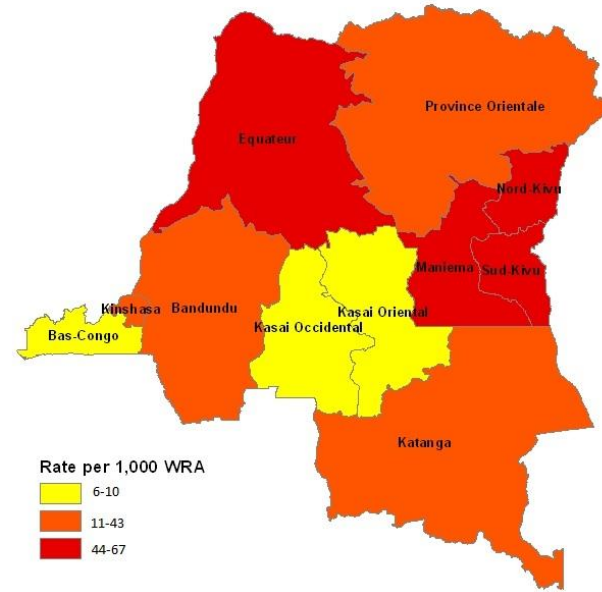
- Multivariate analysis using logistic regressions
 - Outcome: Sexual violence (3 types ran separately)
 - (5) $[\text{Pr}(\text{SV} = 1)] = f(\mathbf{X}_i, \mathbf{X}_h, \mathbf{X}_r)$
 - \mathbf{X}_i = individual characteristics (age and educational attainment)
 - \mathbf{X}_h = household-level variables (wealth quintiles)
 - \mathbf{X}_r = community characteristics (urban/rural residence and province)

Rape past 12 months v. lifetime IPSV

Intimate Partner Sexual Violence



Raped in Past 12 Months



Levels and Rates of Sexual Violence, Annuaire Sanaïre-based estimates

<i>Province</i>	Total WRA	Absolute numbers of sexual violence			Rates of sexual violence per 1,000 WRA		
		Intimate partner sexual violence	Any rape	Rape past 12 months	Intimate partner sexual violence	Any rape	Rape past 12 months
Bandundu	1,592,537	455,207	154,883	22,691	286	97	14
Bas-Congo	902,908	100,960	78,005	6,504	112	86	7
Equateur	1,454,611	606,200	219,982	94,604	417	151	65
Kasaï Occidental	1,017,038	252,678	140,072	7,749	248	138	8
Kasaï Oriental	1,236,045	307,089	82,232	9,418	248	67	8
Katanga	2,048,397	340,179	164,887	28,784	166	80	14
Kinshasa	1,673,618	202,761	207,512	43,619	121	124	26
Maniema	381,169	93,305	55,818	19,050	245	146	50
Nord-Kivu	1,089,967	260,402	223,262	73,387	239	205	67
Province Orientale	1,590,995	310,454	242,536	59,779	195	152	38
Sud-Kivu	943,228	143,758	120,709	41,811	152	128	44
Combined: Nord- and Sud-Kivu	2,033,195	404,160	343,971	115,198	199	169	57
Total DRC	13,930,513	3,072,994	1,689,899	407,397	221	121	29

Logistic Regression

	Intimate partner sexual violence ^a	Rape	Rape last 12 months
	N = 2859	N = 3436	N = 3436
<i>Age splines in years (reference 15 - 19)</i>			
Age 20 - 24	0.80 (0.58 - 1.10)	2.54 (1.70 - 3.80)*	2.22 (1.06 - 4.69)*
Age 25 - 29	0.92 (0.65 - 1.29)	3.22 (2.11 - 4.92)*	2.51 (1.20 - 5.23)*
Age 30 - 34	0.91 (0.64 - 1.30)	2.55 (1.65 - 3.93)*	2.97 (1.42 - 6.22)**
Age 35 - 39	0.78 (0.54 - 1.12)	4.27 (2.76 - 6.61)*	3.49 (1.56 - 7.84)**
Age 40 - 44	0.57 (0.38 - 0.84)**	3.19 (1.94 - 5.22)**	2.25 (0.87 - 5.81)
Age 45 - 49	0.71 (0.47 - 1.07)	2.70 (1.57 - 4.64)**	1.56 (0.53 - 4.60)
<i>Schooling (reference no education)</i>			
Primary	1.00 (0.80 - 1.24)	1.09 (0.80 - 1.48)	1.54 (0.92 - 2.58)
Secondary or above	0.95 (0.72 - 1.26)	1.31 (0.93 - 1.86)	1.20 (0.62 - 2.30)
<i>Wealth (reference bottom quintile)</i>			
Second quintile	0.92 (0.72 - 1.18)	0.77 (0.55 - 1.10)	0.78 (0.41 - 1.46)
Third quintile	0.80 (0.60 - 1.07)	0.61 (0.42 - 0.90)*	0.58 (0.29 - 1.15)
Fourth quintile	0.95 (0.67 - 1.36)	0.98 (0.62 - 1.54)	1.06 (0.46 - 2.42)
Fifth quintile	0.98 (0.62 - 1.54)	0.71 (0.42 - 1.20)	0.71 (0.26 - 1.92)
Urban	1.04 (0.74 - 1.45)	1.10 (0.75 - 1.61)	1.15 (0.55 - 2.41)
<i>Provinces (reference Kinshasa)</i>			
Bandundu	1.24 (0.740 - 2.08)	0.74 (0.41 - 1.31)	0.92 (0.29 - 2.94)
Bas Congo	0.59 (0.37 - 0.93)*	0.55 (0.31 - 1.00)*	0.44 (0.12 - 1.65)
Equateur	3.07 (1.84 - 5.13)**	1.33 (0.73 - 2.42)	2.36 (0.75 - 7.45)
Kasaï Occidental	2.85 (1.72 - 4.72)**	1.44 (0.83 - 2.50)	1.42 (0.44 - 4.54)
Kasaï Oriental	1.55 (1.00 - 2.41)*	0.57 (0.31 - 1.05)	0.61 (0.18 - 2.12)
Katanga	1.11 (0.66 - 1.84)	0.65 (0.36 - 1.17)	1.16 (0.37 - 3.63)
Maniema	1.62 (0.92 - 2.85)	1.38 (0.81 - 2.34)	1.99 (0.70 - 5.64)
Nord-Kivu	2.02 (1.21 - 3.37)**	1.78 (1.09 - 2.92)*	3.27 (1.25 - 8.53)*
Province Orientale	1.02 (0.63 - 1.63)	1.19 (0.68 - 2.10)	1.88 (0.60 - 5.87)
Sud-Kivu	0.98 (0.60 - 1.58)	1.22 (0.70 - 2.12)	2.35 (0.81 - 6.83)

Note: Odds ratios reported and 95 percent confidence intervals are in parentheses.

Standard errors (not reported) are clustered at the primary sampling unit level.

*significant at 5%; **significant at 1%

Discussion (1 of 3)

- Estimates of rape orders of magnitude higher than what has been cited in previous studies
- Rates vary considerably (7-67 per 1,000 women) but nationwide still high
- Rape in previous 12 months (420,591; average of 407,397 and 433,785) translates into approximately:
 - 1,152 women raped every day,
 - 48 raped every hour,
 - four women raped every five minutes

Discussion (2 of 3)

- Rate of women (per 1,000 women or reproductive age) reporting IPSV is roughly 1.8 times the number of women reporting rape (221 versus 121 respectively)
- 3.4 million women are estimated to have experienced IPSV in their lifetime
- Does not correlate closely with rates of SV in the past 12 months by province
- Consistent with worldwide literature on gender-based violence
- % reporting IPSV in DRC is still high compared to neighboring countries

Discussion (3 of 3)

- Few background factors significantly predict SV
- Nord-Kivu is the only province in which women are significantly more likely to report all three types of SV in comparison to women in Kinshasa, other factors held constant.
 - Partially confirms hypothesis that women in the most conflict-affected province of Nord-Kivu and Sud-Kivu will be at higher risk of SV
 - There is considerable regional variation in estimates.

Limitations

- Possible lower bound because
 - We do not capture individuals who have migrated out of the country,
 - Do not capture those who are internally displaced
 - Do not capture those who experienced violence-related mortality;
 - Underreporting due to stigma, shame and fear of disclosure to partners or authorities;
 - Only women aged 15 to 49 are interviewed
 - No information on SV perpetrated against males
- Possible over-estimate because of
 - Over-reporting for access to services?
- Ambiguous effects (uncertain direction)
 - Variation in interpretation of SV questions;
 - Population estimates are projections based on dated census data

References

Harvard Humanitarian Initiative and O. International (2010). "Now, the World Is Without Me": An Investigation of Sexual Violence in Eastern Democratic Republic of Congo. Cambridge, MA, Harvard Humanitarian Initiative.

Longombe, A. O., K. M. Claude, et al. (2008). "Fistula and Traumatic Genital Injury from Sexual Violence in a Conflict Setting in Eastern Congo: Case Studies." Reproductive Health Matters **16**(31): 132-141.

Ministry of Planning, Ministry of Health [Democratic Republic of Congo], et al. (2008). Demographic and Health Survey 2007. Kinshasa, Democratic Republic of Congo and Calverton, Maryland, USA.

Ohambe, M. C. O., J. B. B. Muhigwa, et al. (2005). Women's Bodies as a Battleground: Sexual Violence Against Women and Girls During the War in the Democratic Republic of Congo. South Kivu (1996-2003). Uvira and Bukavu, DRC, Réseau des Femmes pour un Développement Associatif, Réseau des Femmes pour la Défense des Droits et la Paix, International Alert.

Onsrud, M., S. Sjøveian, et al. (2008). "Sexual violence-related fistulas in the Democratic Republic of Congo." International Journal of Gynecology and Obstetrics **103**(3): 265-269.

Peterman A, Palermo T, Bredenkamp C. (2011). "Sexual violence in the Democratic Republic of the Congo: Population-based estimates and determinants." American Journal of Public Health, 101(6).

Pham, P. N., P. Vinck, et al. (2010). "Human rights, transitional justice, public health and social reconstruction." Social Science & Medicine **70**(1): 98-105.

Steiner, B., M. T. Benner, et al. (2009). "Sexual violence in the protracted conflict of DRC programming for rape survivors in South Kivu." Conflict and Health **3**(3).

Taback, N., R. Painter, et al. (2008). "Sexual Violence in the Democratic Republic of the Congo." JAMA **300**(6): 653-654.

Van Herp, M., E. Rackley, et al. (2003). "Mortality, Violence and Lack of Access to Healthcare in the Democratic Republic of Congo." Disasters **27**(2): 141-153.

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