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Correlates of individual-level stigma and unsafe abortions among women seeking abortion care in Trans Nzoia and Machakos Counties, Kenya

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ABSTRACT

Objectives: To compare the levels of abortion stigma in regions with high and low incidence of unsafe abortion in Kenya to explore whether abortion-related stigma is associated with incidence of unsafe abortion. **Study Design:** A cross-sectional survey of 759 women receiving abortion services in private and public health facilities in two counties located in regions with high and low incidence of unsafe abortion regions of Kenya. **Results:** Of the total respondents, 424 sought postabortion care (PAC), whereas 335 sought induced abortion. Factor analysis revealed a four-factor model for examining individual-level stigma related to seeking an abortion. The mean of stigma scores for women in a Trans Nzoia was higher than in Machakos. (49.82 compared to 47.58, $P < 0.001$). In the combined sample, respondents seeking PAC reported higher stigma scores compared to those seeking induced abortion. For the overall scale and subscales, stigma reduced with increases in the age of respondents ($b = -7.7$, $P < 0.001$ for 25–34 years and $b = -4.6$, $P < 0.001$ for 35–49 years). Regression analysis showed that stigma decreased in the county with low incidence of unsafe abortion on interaction between with type of abortion service. **Conclusions:** Respondents from a county with higher incidence of unsafe abortion reported higher stigma scores compared to those from a county with lower incidence of unsafe abortion. Age, marital status, type of abortion service, and socioeconomic status of respondents were all significantly associated with stigmatizing attitudes across the stigma scale's subscales. Young unmarried women, women who received PAC low socioeconomic background, and married women reported higher stigma scores.

Key words: Abortion, attitudes, beliefs, community, Kenya, stigma

Introduction

Unsafe abortion is a grim public health problem in Kenya. An estimated 2600 women die from unsafe abortions annually, and more than 21,000 women are hospitalized as a result of incomplete abortions and other abortion-related complications.^[1,2] Unsafe abortion is estimated to account for 35% of maternal deaths in

the country, a figure that is, much higher than the global average of 13%.^[3] Increasing rates of sexual violence, poverty, limited access to contraceptive information and services, and stigma related to abortion are the key factors that lead to unintended pregnancy and, consequently, in almost half the cases, unsafe abortion.^[4] While Kenya's

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previous law only permitted abortion to protect a woman's life, the country's revised constitution passed in 2010 permits abortion: In the opinion of a trained health professional; in case of emergency treatment; if the life or health of the woman is in danger; or as permitted under any other written law.^[5]

In 2012, a total of 464,690 induced abortions occurred in private and public health facilities in Kenya.^[6-8] The rate of unsafe abortions in Kenya is one of the highest in sub-Saharan Africa and has increased from 32 per 1000 women of reproductive age in 2002 to 48 per 1000 women in 2012.^[8,9] Rift Valley Region, where Trans-Nzoia County is located, reported the highest incidence of 31/1000 women of reproductive age whereas Eastern Region, where Machakos County is located, reported the lowest incidence of 6/1000.^[6] Women in these regions viewed abortion as illegal or were unsure whether it was legal; they also noted that women seeking abortion services were often stigmatized.^[10] Maybe because of a lack of understanding of legality and availability of safe abortion services and the stigma associated with abortion, many women resort to unsafe abortion.^[9] Factors contributing to this increase in the incidence of unsafe abortion, especially considering the increases in the severity of cases need to be fully understood to guide the development of interventions to reverse these trends.

The primary objectives of this study were to test validity and reliability of the individual-level abortion stigma (ILAS) scale^[11] in an African setting and quantitatively measure and compare abortion stigma in two counties with high and low incidence of unsafe abortion among women seeking abortion-related services in private and public health facilities. The secondary objective was to assess the relationship between respondents' demographic characteristics and ILAS scores per county.

Materials and Methods

Data sources

In each region, we surveyed women seeking abortion services from high caseload private and public sites using ILAS. ILAS is a 20-item tool for measuring abortion stigma at the individual level; it captures four important dimensions of stigma: (1) Worries about judgment, (2) isolation, (3) self-judgment, and (4) community condemnation. The development and validation of ILAS scale has previously been documented by Cockrill *et al.*^[11] survey respondents were asked to rate 20 statements on a Likert scale ranging from strongly disagree to strongly agree (strongly disagree = 1, disagree = 2, unsure = 3, agree = 4 and strongly agree = 5). A higher ILAS score represents more stigmatizing attitudes and beliefs about women who have an abortion.

Sampling

Utilizing multi-stage sampling, we first computed incidence of unsafe abortion in each region and purposively selected the county with the highest incidence of unsafe abortion. In each region, using probability proportionate to size, we selected two public and two private health facilities with the highest abortion caseloads. In each health facility, we clustered women by the type of abortion and selected every other client treated at the facility. In each health facility, a team of three research assistants comprising nurses employed in that facility oversaw the study. The research assistants underwent 3-day training on the study procedures, study tool, and obtaining informed consent. All data were collected anonymously from October to December 2014. Each county's sample included women seeking induced abortions or postabortion care (PAC), married and unmarried women, and women from ages 10 to 49. Consenting respondents were instructed to provide survey responses based on their own attitudes and beliefs about their abortion. The survey took approximately 15–35 min to complete. Respondents received snacks and transport reimbursement for their participation.

Data analysis

We analyzed the data analyzed using R Version 3.0.3 (Vienna, Austria. URL <https://www.R-project.org/>),^[12] and computed descriptive statistics including frequencies and percentages for categorical data and means and standard deviations for continuous data. We conducted factor analysis of the four-factor model for ILAS: The overall scale and each of its subscales (worries about judgment, isolation, self-judgment, and community condemnation). We assessed reliability using Cronbach's alpha with an alpha of 0.7 or above deemed acceptable.^[13] We also tested differences in sociodemographic characteristics across counties using *t*-test and Chi-square test, as appropriate. We calculated ILAS scores by summing all 20 items for the total score and then the pertinent items for each of the four subscales. Prior to computing scores, ILAS items were reverse coded so that higher scores indicated higher stigma. We excluded missing responses in order to obtain ILAS scores and obtained the range, mean, and standard deviation were computed for each county; differences in mean score between counties were tested using one-way analysis of variance. The minimum score possible was 20, and the maximum score was possible was 100.

We ran multivariate linear regression to assess the relationship between respondents' demographic characteristics and ILAS scores for the overall scale and subscales for each county. The following covariates were included in the regression model: Type of abortion service sought (induced/PAC), marital status, highest

educational attainment of head of household (as a proxy for socioeconomic status [SES]), and respondents' educational attainment and religious affiliation. To explore the contribution of individual items to the overall scale scores, we created a binary variable for each item by collapsing strongly agree and agree to represent stigmatizing attitudes, and strongly disagree and disagree to represent nonstigmatizing attitudes; respondents who reported being unsure about an item were excluded from these analyses. County differences in the proportion of respondents agreeing or strongly agreeing with ILAS items were tested with Chi-square. Statistically significant relationships for all analyses were determined based on a $P < 0.05$.

This study was approved by the Ethics Review Committee of Kenya Medical Research Institute and the KEMRI Scientific Review Committee. Additional approval to conduct the study was obtained from county director of health and the superintendent in charge of each facility.

Results

Demographic information

We surveyed a total of 759 women (383 in Trans Nzoia and 376 in Machakos) who presented in health facilities seeking termination of pregnancy, miscarriage or were bleeding from pregnancy complications. In each county,

56% of women sought elective abortion, whereas 44% were treated for PAC. Table 1 shows the characteristics of respondents by incidence region and overall. We noted a significant difference in respondents seeking abortion services in each county by age, marital status, highest level of education attained by respondent, and SES at $P < 0.001$.

Exploratory factor analysis

We tested the reliability of the ILAS tool using Cronbach's alpha and considered Cronbach's alpha of 0.7 or above acceptable.^[13] For the overall scale, a Cronbach's alpha of 0.92 was obtained for the combined sample; and 0.93 and 0.92 for Machakos and Trans Nzoia Counties, respectively, providing evidence of internal consistency for the overall 20 item scale [Table 2]. The four subscales yielded Cronbach's alphas of 0.99 (Worries about judgment; 7 items), 0.70 (isolated; 6 items), 0.84 (self-judgment; 5 items), and 0.4 (community condemnation; 2 items), respectively. Figure 1 presents a comparison of reliability coefficients per county, showing that the internal consistency reliability for overall scale worries about judgment, isolation, and self-judgment were acceptable when community condemnation subscale's internal consistency is questionable.

We conducted exploratory factor analyses on the overall scale's items to identify a conceptually relevant

Table 1: Sociodemographic characteristics of respondents by county

	Trans Nzoia				Machakos				Total				P
	CAC (n=214)		PAC (n=169)		CAC (n=210)		PAC (n=166)		CAC (n=424)		PAC (n=335)		
	n	%	n	%	n	%	n	%	n	%	n	%	
Age													
18-24	87	44	109	56	80	40	119	60	167	42	228	58	0.000
25-34	97	65	52	35	101	71	41	29	198	68	93	32	
35-49	30	79	8	21	29	83	6	17	59	81	14	19	
Marital status													
In union	189	65	104	35	199	73	74	27	388	69	178	31	0.000
Not in union	25	28	65	72	11	11	92	89	36	19	157	81	
Highest level of education for household head (SES)													
Some or completed primary school	95	63	57	38	101	64	58	36	196	63	115	37	0.015
Some or completed secondary school	67	47	77	53	68	50	68	50	135	48	145	52	
Some or completed postsecondary school	52	60	35	40	41	51	40	49	93	55	75	45	
Highest level of education for respondent													
Some or completed primary school	136	56	107	44	141	59	99	41	277	57	206	43	0.033
Some or completed secondary school	50	49	52	51	50	48	55	52	100	48	107	52	
Some or completed postsecondary school	28	74	10	26	19	61	12	39	47	68	22	32	
Religious affiliation													
Muslim	0	0	5	100	0	0	5	100	0	0	10	100	0.031
Other religion	2	50	2	50	2	40	3	60	4	44	5	56	
Christian	212	57	162	43	208	57	158	43	420	57	320	43	

PAC=Postabortion care, CAC=Comprehensive abortion care, SES=Socioeconomic status

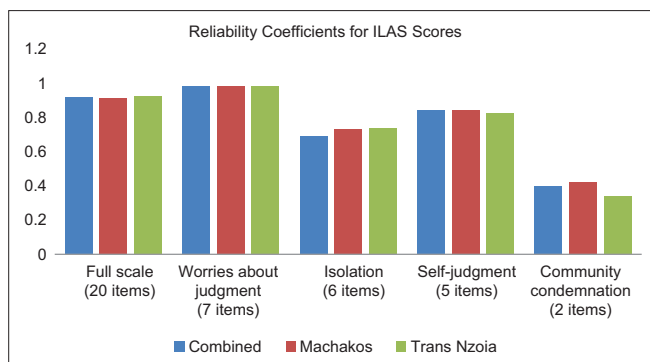


Figure 1: Reliability coefficients of stigma scores per county

scale. Results in Tables 3 and 4 shows that the first factor (overall scale) is very strong with an Eigenvalue of 9.5 thereby explaining 95% of the variance among the 20 items. We do not have an explicit test of a single-factor solution, but the Eigenvalue of 9.5 is large enough to be reasonably confident that all items are tapping a single construct.^[14] Items with factor loadings >0.39 were retained in subsequent analyses.^[15]

Table 3 present ILAS scale scores by abortion services sought and county. ILAS scores for the overall scale and its four subscales for Trans Nzoia were higher in Trans Nzoia than in Machakos. The mean differences in ILAS scores between counties were significant for women seeking PAC for overall scale and the subscales of isolation and self-judgment. For women seeking induced abortion, the only significant finding was the isolation at a $P < 0.001$.

Multivariate linear regression results for the association between individual-level abortion stigma scores

Five regression models were used to test whether type of service sought, age, SES, respondent’s level of education, marital status, religion, county, and interaction between type of abortion services received and county were associated with stigma. The first regression model included all 20 items of the ILAS scale, the second model included items from the worries about judgment subscale, the third model included items from the isolation subscale, the fourth model included items from the self-judgment subscale, and the fifth model included items from the community condemnation subscale. Table 5 presents adjusted linear regression results for the association between ILAS scores for overall scale, its subscales, and respondents’ demographic characteristics.

Based on the probability tests conducted as part of the descriptive analysis of ILAS scale data, we hypothesized that county, age of the respondent, marital status, SES, type of service sought and incidence region variables

Table 2: Individual-level abortion stigma scale reliability for overall scale and subscales for combined sample and each county

	Cronbach’s alpha		
	Combined sample (n=759)	Machakos (n=376)	Trans Nzoia county (n=383)
Overall scale (20 items)	0.918	0.917	0.927
Worries about judgment (7 items)	0.985	0.984	0.985
Isolation (6 items)	0.692	0.734	0.735
Self-judgment (5 items)	0.843	0.843	0.825
Community condemnation (2 items)	0.399	0.422	0.341

Table 3: Principal component factors for individual-level abortion stigma scores

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	9.50786	7.41243	0.4754	0.4754
2	2.09543	0.33806	0.1048	0.5802
3	1.75737	0.34781	0.0879	0.668
4	1.40956	0.11079	0.0705	0.7385
5	1.29877	0.3783	0.0649	0.8034
6	0.92047	0.11249	0.046	0.8495
7	0.80798	0.1074	0.0404	0.8899
8	0.70058	0.26363	0.035	0.9249
9	0.43695	0.21331	0.0218	0.9467
10	0.22364	0.01014	0.0112	0.9579
11	0.2135	0.06501	0.0107	0.9686
12	0.14849	0.04929	0.0074	0.976
13	0.0992	0.00555	0.005	0.981
14	0.09365	0.02195	0.0047	0.9857
15	0.0717	0.0112	0.0036	0.9893
16	0.0605	0.01038	0.003	0.9923
17	0.05011	0.00602	0.0025	0.9948
18	0.04409	0.00882	0.0022	0.997
19	0.03528	0.0104	0.0018	0.9988
20	0.02487		0.0012	1

Likelihood test - Independent versus saturated: $\chi^2 (190)=1.9e+04, P>\chi^2=0.0000$

were significantly associated with ILAS. For all the predictor variables fed into the models, the first item was considered a reference category (coded 0).

Consistent with our hypothesis, age of respondent, type of respondent, SES, marital status, and incidence region were the only predictor variables from among all of the variables fed into the five models that were significantly associated with stigma both the overall scale and subscales except community condemnation subscale. For community condemnation sub scale, the only significant predictors were religion and SES. After accounting for their interaction in the overall scale, county and education still showed a statistically significant association with the dependent variable (abortion stigma) on all the four subscale models.

Table 4: Rotated factor loadings (pattern matrix) and unique variances for individual-level abortion stigma scores

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Uniqueness
Other people might find out about my abortion	0.8979	0.1682	0.0557	-0.2656	0.0271	0.091
My abortion would negatively affect my relationship with someone I love	0.8872	0.1574	0.113	-0.2333	0.0092	0.1208
I would disappoint someone I love	0.9278	0.1082	0.0914	-0.2177	0.0403	0.0701
I would be humiliated	0.9307	0.1433	0.0613	-0.2288	-0.0022	0.0571
People would gossip about me	0.9336	0.1301	0.0756	-0.2026	0.0154	0.0645
I would be rejected by someone I love	0.8938	0.1206	0.0594	-0.3084	0.0266	0.0872
People would judge me negatively	0.9326	0.1307	0.0691	-0.2291	0.0427	0.054
I have had a conversation with someone I am close with my abortion	0.7315	0.0845	0.167	0.4299	-0.1258	0.2293
I was open with someone that I am close with about my feelings about my abortion	0.7902	-0.002	0.1136	0.4484	-0.0754	0.1559
I felt the support of someone that I am close with at the time of my abortion	0.7475	-0.0253	0.1178	0.4839	-0.0931	0.184
I can talk to the people I am close with about my abortion	0.0106	0.0221	0.334	0.2578	0.6722	0.3695
I can trust the people I am close to with information about my abortion	0.0813	0.3586	0.2297	0.2261	0.5515	0.4567
When I had my abortion, I felt supported by the people I was close with	-0.6959	0.3343	0.4427	-0.1272	-0.0169	0.1916
I felt like a bad person	-0.6926	0.3863	0.4879	-0.1486	-0.0457	0.109
I felt confident I had made the right decision	-0.6787	0.3915	0.4716	-0.1649	-0.0145	0.1363
I felt ashamed about my abortion	-0.1549	0.7977	-0.5352	0.0824	0.0566	0.0433
I felt selfish	-0.1617	0.8142	-0.5017	0.1451	-0.0245	0.0375
I felt guilty	-0.0574	0.1839	0.5232	0.1916	-0.3113	0.5555
Abortion is always wrong	0.6496	0.0696	0.0073	0.3181	0.0788	0.4658
Abortion is the same as murder	-0.1492	-0.2692	-0.1674	-0.1652	0.6307	0.4521

Factor loadings over 0.39 appear in bold

Table 5: Descriptive Statistics for individual-level abortion stigma scores overall scale and subscale for full sample and county samples, by type of abortion

	All respondents				CAC				PAC				P
	Machakos (n=376)		Trans Nzoia (n=383)		Machakos (n=210)		Trans Nzoia (n=214)		Trans Nzoia (n=169)		Machakos (n=166)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Overall scale (20 items)	47.58	9.9	49.82	10.89	45.16	7.5	45.68	9.3	55.7	11.7	49.9	10.1	<0.000
Worries about judgment (7 items)	12.76	7.89	13.73	8.3	10.01	5.7	15.05	8.5	18.42	8.8	10.93	6.8	0.123
Isolation (6 items)	13.42	3.9	13.74	3.6	14.53	3.5	13.87	3.8	12.74	3.44	12.85	4.09	<0.000
Self-judgment (5 items)	12.25	3.67	13.05	4.39	11.25	2.8	11.61	3.12	15.31	4.9	13.05	4.13	<0.0000
Community condemnation (2 items)	9.19	1.04	9.29	0.77	9.29	0.6	9.19	1.17	9.3	0.9	9.2	0.8	0.0111

Items in bold statistically significant at P<0.001, PAC=Postabortion care, SD=Standard deviation, CAC=Comprehensive abortion care

We explored associations between respondents' demographic characteristics and subscale scores were also explored, and findings are presented in Table 6. The direction and type of association for the worries, isolated, self-judgment subscales followed a similar, and identical pattern to that of the overall scale. The effect of age on stigma noted that overall levels of stigma decreased with an increase in age of respondents, with respondents older than 25-year-old reporting lower levels of stigma. For clients aged 24–34 years, we noted that overall scale, worries, isolation, and judgment subscales scores decreased for every increase in respondents' age category ($b = -7.7; -9.2; -6.4; -2.8$ for each subscale, respectively). This trend is seen from clients aged above 35–49 years.

On SES, stigma scores increased for the overall scale, worries about judgment, isolated, and self-judgment

subscales along with the level of education ($b = 2.97, P < 0.001$) for respondents whose head of household had reached or completed secondary school or beyond. Stigma scores for full scale and 3 subscales also were significantly lower for respondents who were not married, compared to those who were ($b = -14.8, P < 0.001$). In terms of the county, stigma scores were lower for Machakos ($b = -2.23, P < 0.001$).

Respondents from Trans Nzoia reported significantly higher stigma scores for the overall scale and three of the subscales than those from Machakos (coefficients: overall model 10.56***; worries 8.40***; isolated - 1.78**; self-judgment 4.05***; community condemnation 0.01). Interaction of type of abortion and county yielded a reduction in ILAS scores for every unit at overall scale, worries about judgment subscale, isolation subscale, judgment subscale, and community condemnation

Table 6: Adjusted linear regression results for sociodemographic characteristics of respondents' and individual-level abortion stigma overall scale and its subscales

	Overall scale		Worries		Isolated		Judgement		Community condemnation	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
Age										
16-4 years (reference)										
25-34 years	-7.70***	-9.20,-6.20	-6.54***	-7.68,-5.39	2.22 ***	1.68,2.77	-2.98***	-3.49,-2.34	-0.06	-0.19,0.08
34-49 years	-4.55***	-7.01,-2.09	-4.46***	-6.35,-2.58	2.89***	1.98,3.78	-2.72***	-3.67,-1.77	-0.10	-0.33,0.13
Type of client										
Induced (reference)										
PAC	7.41***	6.00,8.82	6.24***	5.16,7.32	-1.40***	-1.93,-0.88	2.73***	2.18,3.28	0.02	-0.16,0.15
Highest education level of head of household (SES)										
Some or completed postsecondary school (reference)										
Some or completed primary school	0.17	-1.78,2.12	-0.45	-1.97,1.07	1.58	0.88,2.27	-0.81**	-1.56,-0.05	-0.15	-0.32,0.02
Some or completed secondary school	2.97***	0.98,4.99	2.05***	0.5,3.60	0.27***	-0.45,0.99	0.67	-0.09,1.44	-0.02	-0.19,0.16
Highest education level of respondent										
Some or completed postsecondary school (reference)										
Some or completed primary school	1.38	-1.21,3.98	1.96	-0.06,3.98	-0.97	-1.92,-0.03	0.73	-0.26,1.72	-0.41***	-0.64,-0.18
Some or completed secondary school	5.89	3.08,8.69	5.17***	2.99,7.35	-1.93***	-2.95-0.91	3.04 ***	1.98,4.11	-0.19	-0.45,0.05
Marital status										
Not union (reference)										
In union	-14.83***	-16.17,-13.47	-12.49***	-13.49,-11.50	3.17***	2.59,3.74	-5.34***	-5.89,-4.80	-0.06	-0.21,0.09
Religion										
Muslim (reference)										
Christian	-4.86	-11.39	-6.84	-11.92-1.76	3.04	0.69,5.39	-3.31	-5.85,-0.78	2.56***	1.76,3.35
Other religion	-6.06	-15.48	-7.44	-14.77,-0.11	1.17	-2.22,4.57	-2.34	-5.99,1.30	2.28***	1.72,2.82
Incidence region										
High Incidence (reference)										
Low incidence region	-2.23**	-3.73-0.75	-0.97	-2.13,0.19	-0.32	-0.86,0.22	-0.79**	-1.37-0.22	-0.09	-0.23,0.03
Client type and incidence region interaction										
Induced (reference)										
PAC	10.56***	8.58,12.53	8.40***	6.88,9.92	-1.78***	-2.55,-1.03	4.05***	3.28,4.81	0.01	-0.18,0.19
Low incidence region	0.53	-1.32,2.36	0.92	-0.50,2.34	-0.65	-1.36,0.05	0.36	-0.36,1.07	-0.10	-0.28,0.07
PAC* low incidence region	-6.25***	-9.03-3.47	-4.28***	-6.42,-2.14	0.76	-0.30,1.83	-2.61	-3.69,-1.53	0.01	-0.25,0.28

***P<0.001, **P<0.01, *P<0.05, CI=Confidence interval, PAC=Postabortion care, SES=Socioeconomic status

subscale ($b = -6.25, P < 0.001$; -4.28 women with no or completed; some primary level of education reported higher levels of stigma compared to those who had reached postsecondary level of education.

Proportion of respondents who agreed with statements

Table 6 presents the proportion of respondents who strongly agreed or agreed with ILAS items as a way of

identifying which items were contributing the most to scores in each county. Respondents reported the highest stigma scores on the community condemnation subscale followed by self-judgment and worries about judgment subscales. For the community condemnation subscale, 98% of respondent's agreed with statements that abortion is wrong or the same as murder. In the combined sample, 78% of respondents seeking PAC agreed with statements

about fear of being isolated by community members if it were to be known that they had an abortion. Other important findings include that 65% of respondents were worried about being judged, whereas 35% of respondents reported being concerned about self-judgments.

Overall, respondents from Trans Nzoia were more likely to agree with statements on being stigmatized compared to women in Machakos. We compared Trans Nzoia and Machakos and noted significant differences in proportions that agreed or strongly agreed on two subscales: Isolation and self-judgment.

We also compared the proportion of respondents who strongly agreed or agreed with statements on stigma. We noted that respondents who sought PAC services in Trans Nzoia reported higher proportions of agreement for specific items compared to those in Machakos, and those differences were statistically significant ($P < 0.005$) for 12 items as shown in Table 7.

Discussion

One of the most important findings from this study is that individual level stigma is associated with

abortion-seeking behaviors. Respondents in Trans Nzoia reported higher stigma scores compared to those in Machakos. We also found that stigma scores were higher for women seeking PAC compared to those coming for induced abortion services. This may occur because women who sought PAC already had tried to induce their own abortion. We posit that women fear being stigmatized (blamed, ashamed, silenced, labeled, excluded, or prosecuted) for seeking an abortion. As a result of stigma, they continue to seek care in secrecy leading to unsafe abortions; inherently contributing to the increased incidence of unsafe abortion in Kenya.

Our findings further suggest a high level of stigma regardless of type of service sought, marital status, education level, SES, and age. These findings support the negative perception of and treatment by communities toward women who seek abortion. These findings, in tandem with significant findings from the ILAS items, provide insight into the types of messages and/or information that could be incorporated into stigma reduction interventions in the various community settings. A majority of the community condemnation items were important to women in either county, including opinions that abortion is always wrong, and

Table 7: Proportion of respondents agreeing/strongly agreeing with individual-level abortion stigma items, by county and type of service sought by client

Statement	Machakos		Trans-Nzoia	
	CAC (n=210)	PAC (n=166)	CAC (n=214)	PAC (n=169)
Worries about judgment				
Other people might find out about my abortion**	15	52	20	34
My abortion would negatively affect my relationship with someone I love**	13	57	19	39
I would disappoint someone I love**	12	57	16	40
I would be humiliated	13	58	19	41
People would gossip about me**	14	57	18	37
I would be rejected by someone I love	13	47	17	30
People would judge me negatively**	12	54	18	36
Isolation				
I have had a conversation with someone I am close with my abortion	62	80	64	79
I was open with someone that I am close with about my feelings about my abortion	62	81	64	80
I felt the support of someone that I am close with at the time of my abortion**	61	83	63	79
I can talk to the people I am close with about my abortion [^] **	58	72	61	60
I can trust the people I am close to with information about my abortion	52	70	55	60
When I had my abortion, I felt supported by the people I was close with [^] **	55	50	63	79
Self-judgment				
I felt like a bad person	7	27	10	20
I felt confident I had made the right decision	62	58	63	59
I felt ashamed about my abortion [^] **	13	54	17	31
I felt selfish [^] **	12	52	12	33
I felt guilty**	12	54	16	37
Community condemnation				
Abortion is always wrong	99	97	97	97
Abortion is the same as murder**	100	98	98	98

[^]Significant regional differences in incidence region at $P < 0.001$, ^{**}Significant regional differences among respondents seeking PAC at $P < 0.005$. PAC=Postabortion care, CAC=Comprehensive abortion care

that abortion is equivalent to murder. Given the salience of these items for respondents, these are likely themes that should be incorporated into stigma reduction efforts targeting health care provider counseling for women seeking abortion and also for general community members to reframe their condemnation of women seeking abortions. Similarly, the items from the fear of isolation sub-scale also had some salience for these respondents and could help inform future interventions. The fear of isolation items seem to be less salient for Machakos with nearly one-third of Machakos respondents reported that a man should not marry a woman who has had an abortion and that they would try to shame a woman who had an abortion. Given the seriousness of these issues, they may be worth exploring further at the community and individual levels.

As with the fear of isolation, worries about judgment subscale items had limited agreement in the context of both counties and do not necessarily need to be incorporated into stigma reduction efforts at the community level.

Conclusions

While it is generally believed that women seeking abortion face a lot of stigma, the role of stigma in abortion care has not been well documented in sub-Saharan Africa. This study has been able to test the ILAS tool which yielded high internal consistency and reliability in determining levels of stigma among women in the two regions of Kenya. ILAS tool provided strong relevance in measuring stigma scales in the form of worries about judgment, fear of isolation; exist for the overall scale but with questionable applicability of the ability of the tool to measure community condemnation in Kenyan context. We suggest that to make it more reliable, there is a need to add more items on community condemnation for the subscale to make it work.

This study demonstrated the incidence of unsafe abortion is directly associated with abortion stigma. We, therefore, contend that effective abortion stigma reduction efforts will contribute to reducing incidences of unsafe abortion. Stigma reduction interventions should target women seeking PAC services, with abortion providers skills on counseling geared toward normalizing conversations around abortion stigma. Finally, we note that reducing abortion stigma could have an impact on unsafe abortion, and maternal mortality is meaningful work to explore in similar settings.

Limitations of the study

Data collection was done after clients had received an abortion and reported to feel better after treatment. Participation in the study was optional, and therefore selection bias could be introduced, as clients who choose to participate may be different (e.g., have more time, have had an experience that is more positive or negative) to clients who decline participation.

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Conflicts of interest

There are no conflicts of interest.

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