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ABORTION RELATED STIGMA: A CASE STUDY OF ABORTION STIGMA IN REGIONS WITH HIGH AND LOW INCIDENCES OF UNSAFE ABORTION
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ABORTION RELATED STIGMA: A CASE STUDY OF ABORTION STIGMA IN REGIONS WITH HIGH AND LOW INCIDENCES OF UNSAFE ABORTION

E. K. YEGON, P. K. MWANIKI E. ECHOKA and J. OSUR

ABSTRACT

***Background*: Abortion accounts for 35% of maternal mortality in Kenya. Kenya has reported an increase in the rate of unsafe abortions from 32 to 48 per 1000 women of reproductive age in 2002 and 2012 respectively. During the same period, women presented in public health facilities with severe complications indicating that women were having unsafe abortions.**

***Objective*: To investigate the association between incidences of unsafe abortion and stigma attitudes and beliefs about abortion among community member's in two counties located in regions with either high or low incidences of unsafe abortion.**

***Design*: A cross-sectional comparative study.**

***Settings*: General community members in Trans Nzoia and Machakos Counties.**

***Subjects*: Men and women of reproductive age in Trans Nzoia and Machakos Counties.**

***Results*: Respondents in Trans Nzoia County reported the highest full-scale abortion stigma levels (μ=55.4) compared to those from Machakos County (μ=53.07). The mean differences in SABAS scores for all the four subscales were significant for fear of contagion, exclusion and discrimination and Negative stereotyping (p-value <0.000). Incidence region, educational attainment and marital status were all significantly associated with stigmatising attitudes. Respondents in the 35-49 age group showed more stigmatising attitudes than younger respondents, and married individuals showed more stigmatising attitudes than single respondents, and lower education levels were associated with higher levels of stigma.**

***Conclusions*: Mean stigma scores for counties with high incidence of unsafe abortions were higher than those from regions with a low incidences of unsafe abortion. Male community members, those with lower levels of education were more likely to report higher levels of stigma at the community level. The majority of women seeking abortion were viewed negatively by general community members, and this could explain women's decision to seek an unsafe abortion.**

INTRODUCTION

In Kenya, almost all abortions are unsafe, meaning that they are carried out by someone lacking the necessary skills and/or in an environment that lacks minimal medical standards (1). The rate of unsafe abortions in Kenya is one of the highest in sub-Saharan Africa (2, 3) and has increased from 32 per 1000 women of reproductive age in 2002 to 48 per 1000 women in 2012 (4, 5). In 2012, there were a total of 464,690 induced abortions which occurred in both private and public health facilities (5). Article 43 of Kenyan Constitution provides that "*Every person has the right to the highest attainable standard of health, which includes the right to healthcare services, including reproductive health care*", Article 26 (4) of Kenya's new Constitution allows abortions when pregnancy is a threat to a woman's life or health (6). A woman who terminates a pregnancy is perceived as having transgressed three conventional ideals of womanhood: female sexuality solely for the means of procreation, the inevitability of motherhood, and instinctual nurturance of the vulnerable and is

therefore stigmatised (7).

Stigma has permeated attitudes toward recipients of sexual and reproductive health services, and at times to service providers (8). For recipients of reproductive health services, stigma has been associated with low self-esteem, depression, anxiety, and poor health-related quality of life (9-11). In Africa, stigma research has been fairly limited and primarily focused on understanding the issue from a qualitative perspective. Geary *et al* (12). documented numerous social consequences of having an abortion, including harassment from family and friends and social exclusion in Zambia. Shellenberg *et al*.,(13) found that most participants in five different countries, perceived abortion to be a highly stigmatised behaviour; stigma was more evident in countries where abortion is highly restricted. While the new Kenyan constitution has increased access to abortion services, Marlow *et al*., (14) found that most community members thought that abortion is illegal in Kenya. Several other studies have found similar results concerning high levels of abortion stigma at the individual and community levels (15-17).

Abortion-related stigma plays a critical role in women's decision to seek a safe or unsafe abortion and contribution of abortion-related stigma in influencing women's decision to terminate pregnancy (7). While some studies have explored abortion stigma in the African context, to the best of our knowledge, no studies have quantitatively measured community-level stigma in Kenya with a view of exploring if there is any correlation between unsafe abortion and abortion-related stigma in order to contribute to thedesign of stigma reduction strategies. Understanding and addressing abortion stigma is critical to ensuring women's access to safe, comprehensive abortion care including reproductive health rights as enshrined in Kenya's Constitution.

We sought to examine correlates of stigma and unsafe abortion in regions with the high and low incidence of unsafe abortions. We were interested in measuring levels of stigma and comparing stigma in selected counties from regions of unsafe abortions utilising results from a national study that showed different regions of Kenya had different levels of unsafe abortion.

MATERIALS AND METHODS

Study area: The study was conducted in two counties Machakos County located in Eastern region while Trans Nzoia is Located in Rift Valley region of Kenya. From Abortion Magnitude study (5), Rift Valley region had the highest level of stigma while Eastern Region had the lowest incidences of unsafe abortion. In each incidence region, we used the number of abortions reported in each health facility per county in each region and selected a county that had facilities with the highest number of abortions reported in public health facility and used recruited those counties into the study. From the two counties selected we then disaggregated each county into three main regions, urban, semi –urban and rural. Using four Community Health Volunteers (CHVs) as per MOH Community Health Strategy (18) trained as data collectors in each county we recruited community members from locations where they usually meet for social functions. Such places included churches and water collection points, farms where women were cultivating and saloons separately for unmarried and married men. Unmarried men were recruited from those attending youth activities including video joints, sports events with married men at favorite community clubs, in farms and men's meetings within the community.

Study design and population: A cross-sectional comparative study design was employed to identify the determinants abortion-related stigma in the two Counties of Machakos and Trans Nzoia. The study population comprised general community members comprising men and women above 18 years. In each county, we generated populations of each sub-county used probability proportionate to size sampling to select targeted respondents for each sub-county after which we used simple random sampling to select used to select respondents in each study location.

SABAS Scale: We used Stigmatising Attitudes, Believes and Action Scale (SABAS)[16] - an 18-item tool for measuring abortion stigma at the individual and community levels, and captures three important dimensions of stigma: Negative Stereotyping(NS), Exclusion and Discrimination(ED), and Fear of Contagion(FC). All the 18 items in the tool (e.g., "Once a woman has had one abortion she will make it a habit") were measured by a five-level bidirectional Likert scale (0= "strongly agree," 1= "disagree," 2= "neither agree nor disagree," = "agree" and 4= "strongly disagree"). SABAS scores were calculated by summing all eighteen items for the total score and then the appropriate items for each of the three subscales (i.e., negative serotyping, exclusion and discrimination, and fear of contagion). Prior to computing scores, one of the eighteen SABAS items was reverse coded. Missing responses for scale items were coded as zero and summed along with other items.

Data collection: Data collection team comprising the CHVs underwent two-day training on how to obtain informed consent and in administering the SABAS questionnaire that were translated and administered in the local language (Kamba and Swahili in Machakos; Luhya, Kalenjin, and Swahili in Trans Nzoia County). Questionnaires were pre-tested in neighboring counties in each of the two counties. Data were collected over a two-week period in August of 2014. The CHVs were sent to each location

in each sub-county and targeted a specific number of respondents per day until the desired sample size of 352 in Machakos and 360 in Trans Nzoia counties was reached. At the end of every day, data were reviewed for completeness and accuracy and any errors addressed the following day. Each interview lasted an average of 23 minutes in Machakos and 24 minutes in Trans Nzoia.

Data analysis Data were entered into Epidata version 3.2(19) and exported to R version 3.0.3(20) for analysis. Descriptive statistics were computed – including frequencies and percentages for categorical data, and means and standard deviations for continuous data. We calculated SABAS scores by summing all eighteen items for the total score and then the pertinent items for each of the four subscales. Prior to computing scores, SABAS items were reverse coded so that higher scores indicated higher stigma. We excluded missing responses in order to obtain SABAS scores and obtained the range, mean and standard deviation were computed for each county. A higher score represents more stigmatising attitudes and beliefs about women who have an abortion and vice versa. Differences in socio-demographic characteristics in the two incidence regions were tested using t-tests and chi-square. We used four regression models to test whether the incidence of the unsafe region, age, education, marital status, religion, and gender were associated with stigmatising attitudes, beliefs and actions (SABAS) in the community. The first regression model included all the 18 items of the SABAS scale (full scale). In the second model items relating to negative stereotyping (8 items) were included. The third regression model only considered exclusion and discrimination items (7 items). The final regression model had three items on fear of contagion. Age and incidence region (Machakos and Trans Nzoia) and education and site were treated as interaction terms. These were used to test whether stigma scores by age and education differ for the experimental and control groups.

Ethical approval: Approval to conduct this study was granted by the Ethical Review Committee of Kenya Medical Research Institute (Scientific Steering Committee No. 2768). Permission to conduct the study at the communities was granted by the County Director of Health in both regions written consent was given by the informants both at the community level. Each respondent was required to sign an informed consent form to participate in the study. Informed consent was obtained by the trained research assistant at a location within the community where the respondent felt it was safe to respond to the questions. No identifier marks or personal information was used in the analysis and subsequent reporting of the study results.

RESULTS

Demographic characteristics of study participants: A total of 712 respondents made up the total study population with 352 respondents from Machakos and 360 from Trans Nzoia County. Among the total respondents 50% (355) were married and 50% (357) were single, while 50%(358) of them were males and 50% (354) were females. 43% (308) of respondents were aged between 18-24 years, 30% (215) aged between 25-34 years and 27% (189) aged 35-46 years. 40% (288) of respondents had attained primary school, 33% (236) had not attended any school while 27% (188) had reached post-secondary school. On religious affiliations, 74% (529) of respondents reported that they were Protestant; 19%(138) as Catholics, 3% (24) as Muslims while another 3%(21) reported that they did not associate with any religious affiliation. Table 1 Demographic characteristics of the study population per county.

Levels of Stigmatising Attitudes Behaviors Actions per county: Respondents in Trans Nzoia County reported the highest full-scale abortion stigma levels (μ=55.4) compared to those from Machakos County (μ=53.07) as shown in Table1. On negative stereotyping subscale, the mean score for Trans Nzoia was 29.1 compared to 28.5 in Machakos. For the exclusion and discrimination subscale, the Trans Nzoia reported a mean score of 18.5 compared to 17.6, in Machakos, while on Fear of contagion; the mean score for Trans Nzoia was 7.3 compared to 7.0 in Machakos County. The mean differences in SABAS scores for all the four subscales were significant for Fear of contagion, exclusion and discrimination and Negative stereotyping (p-value <0.000). As shown in Table 2, we compared levels of stigma by the type of location and noted that in both counties, the levels of stigma were higher in more rural communities than in semi-urban and urban communities.

To understand thedistribution of stigma by age group we obtained mean scores per age group per county. For the full scale, respondents aged 35-49 years and (18-24) age groups exhibited more stigma (μ=55.7 and 54.5) compared middle age group (25-34) (μ=53.3). However, the abortion stigma levels do not significantly differ across ages (p-value <0.087). Comparison of stigma by age group and incidence region shows that across all age groups Trans Nzoia reported higher stigma scores than in Machakos County. Table 3 presents thedistribution of stigma by county and also across stigma subscales.

Respondents with no education/primary education recorded the highest levels of full-scale abortion stigma (μ=57.3), followed by those with secondary education (μ=54.3). The lowest abortion stigma scores were reported by the post-secondary group (μ=50.2). The differences in abortion stigma

levels among the educational groups are statistically significant (p-value <0.000). A similar pattern is observed among the subscales, and Machakos and Trans Nzoia counties. However, the educational wise variations of abortion stigma in the Machakos are insignificant. For full scale and stigma subscales, we note that stigma scores were significantly higher p-value <0.000). In Trans Nzoia compared to Machakos County (μ=53.6 and 51.6 for full scale; μ=25.1 and 24.3 for exclusion and discrimination; μ=19.9 and 17.71 for negative stereotyping; and μ=9.62 and 9.49 for fear of contagion respectively).

Full-scale abortion stigma insignificantly varies between the single and married (p-value 0.713), though the married group exhibits higher abortion stigma levels (μ=53.4 and μ=54.6 for singles and married respectively 54.6(Table 5). There's a more marked variation by marital status in Machakos County compared to Trans Nzoia County across the full scale and sub scales. The variation in the negative stereotyping and exclusion and discrimination sub scales is significant (p-value, 0.007).

Overall, Muslims and other/no religion groups stigmatize women who have procured abortions more than their Catholic and Protestant counterparts (Muslim μ=57.9, other/no religion μ= 57.3, Catholic μ=53.8, Protestantμ=53.6). We compared stigma scores per county and noted that respondent's in Machakos reported higher stigma scores than those in Trans Nzoia County. The differences in abortion stigma scores are significant (p-value <0.011). Across full scale and SABAs sub scales, males reported higher abortion stigma scores than female respondents. A comparison of gender per county indicates both genders in Trans Nzoia reported higher stigma scores than in Machakos County, as presented in Table 6. However, the difference in the abortion scores of the two groups is not significant (p-value 0.297).

Regression Modelling of SABAS full scale and sub scales: Based on the probability tests conducted during descriptive analysis of SABA scale data, we hypothesize that incidence region, education and religion variables are significantly associated with stigmatizing attitudes, beliefs and actions in the communities surveyed. For all the predictor variables fed into the models, the first item was considered a reference category (coded 0). Table8 represents results of linear regression models for Full-scale SABAS-18 items; Negative stereotyping-8 items; Exclusion and discrimination- 7 items and Fear of contagion-3 items. Partly consistent with our hypothesis, of all the variables fed into the four models, Incidence region and education were the only predictor variables significantly associated with stigmatizing attitudes, beliefs and actions in the both the full scale and subscales. After theinteraction, incidence region and education still showed a statistically significant association with the dependent variable on all the four models.

In the religion category, only Muslims were significantly associated with abortion stigma on three of the four models (full scale, exclusion and discrimination and fear of contagion. Respondents from Trans Nzoia county were significantly more likely to perpetuate abortion stigma than those from Machakos County (coefficients: model1 -6.494***; model2-2.465***; model3 -1.976**; model4 -1.453***) as shown in Table 8.

Respondents with lower level of education were more likely to stigmatise women in their communities who have had anabortion than their more educated counterparts. However, theinteraction of education and study site yielded opposite results.
Age had no significant relationship with atendency to stigmatise women who have had an abortion, even after interaction with study site.

Proportion of Respondents Agreeing/Strongly Agreeing with SABAS Items, by County: Negative stereotyping stigma scores ranged from 59% - 92% with respondents from Trans Nzoia reporting higher scores than those from Machakos and Trans Nzoia counties. The highest scores were on statement related to a woman who is having an abortion is committing a sin where 92% of respondents in these counties agreed with this statement while 58% of women in Trans Nzoia agreed that a woman seeking an abortion is a bad mother as shown in Table 9. With most respondents confirming views categorized as negative stereotyping, citing issues such as sin, shame, trustworthiness, and poor health as grounds of negative stereotyping. On the other hand, the proportions of respondents who confirmed that they would discriminate and exclude women who had procured abortion were moderate in both counties, but at different levels, with proportions being higher in Trans Nzoia compared to Machakos. 51% in Trans Nzoia compared to 35% in Machakos were of the view that a man should not marry a woman who had procured abortion. However, the proportion of respondents who felt that a woman who procured abortion should be treated as everyone else was higher in Trans Nzoia at 39% compared to Machakos- at 27%. This is despite these counties all having confirmed to stereotype negatively, exclude and discriminate against women who had procured abortion. These findings beg the question as to whether individuals' negative attitudes and beliefs about abortion translate into specific actions. Lastly, with regards to fear of contagion sub-scale, there were moderate to lower proportions of respondents confirming that they feared contamination from women who had procured abortion. Under this category, the proportions were, however, different in the two counties, with Trans Nzoia reporting higher proportions of respondents who confirmed to fear contagion ranging from 51% to 45% across the reasons cited, compared to Machakos County.

Table 1
Demographic characteristics of the study participants

Variable	Machakos(352) N (%)	Trans Nzoia (n-360) N (%)	Total (n=712) Total (%)	P- Value
Gender				
Male	179 (51)	179 (50)	358 (50)	P=0.763
Female	173 (49)	181 (50)	354 (50)	
Age				
18-24	176 (50)	132 (37)	308 (43)	P=0.001
25-34	87 (25)	128 (36)	215 (30)	
35-49	89 (25)	100 (28)	189 (27)	
Highest Educational level				
None	122 (35)	114 (32)	236 (33)	P=0.625
Primary	140 (40)	148 (41)	288 (40)	
Post-Secondary	90 (25)	98 (27)	188 (26)	
Marital Status				
In Union	163 (46)	192 (53)	355 (50)	P=0.061
Not in any union	189 (54)	168 (47)	357 (50)	
Religious Background				
Protestant	275 (78)	254 (71)	529 (74)	P=0.143
Catholic	62 (18)	76 (21)	138 (19)	
Muslim	8 (2)	16 (4)	24 (3)	
Traditionalist	7 (2)	14 (4)	21 (3)	

Table 2
Descriptive statistics for the SABA scale and subscales, by Incidence region

		Combined Sample (n= 718)		Trans Nzoia (n= 360)		Machakos (N=352)		
	Score Range	Mean	SD	Mean	SD	Mean	SD	p-value
Full scale (18 items)	21 - 86	54.2	11.08	55.4	10.34	53.07	11.66	0.106
Negative stereo -typing (8 items)	8 - 40	29.1	5.41	29.7	4.96	28.5	5.75	0.085
Exclusion and discrimination (7 items)	7 - 35	18.0	5.46	18.5	5.11	17.6	5.78	0.000
Fear of contagion (3 items)	3 - 15	7.1	2.58	7.3	2.68	7.0	2.47	0.000

Table 3
Descriptive statistics for the SABA scale and subscales, by Incidence region and type of location

		Trans Nzoia(N=360)						Machakos (N-352)						
		Urban		Semi- urban		Rural		Urban		Semi-urban		Rural		
	Score Range	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	pvalue
Full scale (18 items)	21- 86	54.9	12.63	57.1	8.46	54.49	9.81	51.3	13.04	52.37	10.85	55.2	10.66	0.370
Negative stereotyping (8 items)	8 - 40	30.1	5.98	30.4	4.30	28.92	4.59	28.2	6.52	28.5	5.35	28.6	5.35	0.065
Exclusion and discrimination (7 items)	7 - 35	18.3	6.12	18.9	4.42	18.29	4.88	16.4	5.90	17.1	5.56	19.18	5.47	0.000
Fear of contagion (3 items)	3 - 15	6.6	2.92	7.8	2.42	7.28	2.64	6.7	2.74	6.7	2.22	7.4	2.34	0.000

Table 4
Descriptive statistics for the SABA scale and subscales, by Age group

	Age Group		18-24 (n= 307)		25-34 (n= 223)		35-49 (n= 189)		
		Score Range	Mean	SD	Mean	SD	Mean	SD	pvalue
Full scale (18 items)	Total	21 - 86	54.5	10.7	52.3	11.6	55.7	11.1	0.087
	Machakos	21 - 86	53.7	10.6	53.7	12.4	51.5	12.0	0.524
	Trans Nzoia	24 - 86	55.11	10.77	55.03	10.32	56.16	9.54	0.124
Negative stereo-typing (8 items)	Total	8 - 40	29.1	5.27	29.06	5.48	28.99	5.57	0.802
	Machakos	8 - 40	28.3	5.27	28.80	5.79	28.18	6.35	0.411
	Trans Nzoia	14 - 40	29.6	5.22	29.44	5.01	29.65	4.96	0.572
Exclusion and discri-mination (7 items)	Total	7 - 35	18.5	5.5	18.9	5.8	17.5	5.1	0.341
	Machakos	7 - 35	18.4	5.6	17.7	6.2	16.7	5.2	0.703
	Trans Nzoia	7 - 34	18.6	5.4	18.2	5.1	18.5	4.7	0.548
Fear of contagion (3 items)	Total	3 - 15	6.9	2.5	7.4	2.7	7.1	2.6	0.052
	Machakos	3 - 15	7.0	2.3	7.3	2.7	6.6	2.4	0.132
	Trans Nzoia	3 - 15	6.9	2.7	7.4	2.7	7.8	2.7	0.101

Table 5
Descriptive statistics for the SABA scale and subscales, by Level of Education

	Education		No educ/primary (n= 234)		Secondary school (n= 288)		Post-secondary (n= 188)		
		Score Range	Mean	SD	Mean	SD	Mean	SD	pvalue
Full scale (18 items)	Total	21 - 86	57.3	10.8	54.3	10.1	50.2	11.7	0.000
	Machakos	21 - 86	57.6	11.7	52.5	10.5	48.8	11.7	0.020
	Trans Nzoia	24 - 86	57.0	9.7	56.2	9.4	55.4	10.3	0.070
Negative stereo-typing (8 items)	Total	8 - 40	30.0	5.2	29.0	4.8	27.9	6.3	0.031
	Machakos	8 - 40	29.5	5.6	28.4	5.1	27.3	6.8	0.217
	Trans Nzoia	14 - 40	30.4	4.9	29.7	4.4	28.5	5.7	0.160
Exclusion and discr-imination (7 items)	Total	7 -35	19.5	5.4	18.0	5.3	16.2	5.3	0.000
	Machakos	7 - 35	20.0	5.8	17.2	5.6	15.6	5.0	0.001
	Trans Nzoia	7 - 34	19.0	4.9	19.0	4.8	16.9	5.0	0.129
Fear of contagion (3 items)	Total	3 - 15	7.8	2.6	7.2	2.5	7.1	2.6	0.000
	Machakos	3 - 14	8.0	2.4	7.0	2.4	5.8	2.2	0.023
	Trans Nzoia	3 - 15	7.6	2.9	7.5	2.5	6.5	2.6	0.000

Table 6
Descriptive statistics for the SABA scale and subscales, by Marital Status

			Single (n= 357)		Married/ in relationship (n= 355)		
		Score Range	Mean	SD	Mean	SD	pvalue
Full scale (18 items)	Total	21 - 86	54.1	11.1	54.3	11.1	0.713
	Machakos	21 - 86	53.3	11.3	52.9	12.1	0.746
	Trans Nzoia	24 - 86	54.8	10.9	56.0	9.7	0.603
Negative stereotyping (8 items)	Total	8 - 40	29.1	5.5	29.7	5.3	0.696
	Machakos	8 - 40	28.5	5.7	28.4	5.8	0.412
	Trans Nzoia	14- 40	29.6	5.3	29.8	4.6	0.594
Exclusion and discri-mination (7 items)	Total	7 - 35	18.1	5.5	18.6	5.4	0.007
	Machakos	7 - 35	17.8	5.6	17.5	5.9	0.112
	Trans Nzoia	7 - 34	18.3	5.4	18.6	4.8	0.083
Fear of contagion (3 items)	Total	3 - 15	7.0	2.6	7.3	2.6	0.249
	Machakos	3 - 15	7.0	2.5	7.0	2.5	0.384
	Trans Nzoia	3 - 15	7.0	2.7	7.6	2.7	0.283

Table 7
Descriptive statistics for the SABA scale and subscales, by Religion

			Protestant (n= 529)		Catholic (n= 138)		Muslim (n= 40)		Other/no religion (n= 15)		
		Score Range	Mean	SD	Mean	SD	Mean	SD	Mean	SD	pvalue
Full scale (18 items)	Total	21 - 86	54.0	11.18	54.0	9.86	57.4	10.45	58.88	15.5	0.001
	Machakos	21 - 86	52.7	11.82	53.5	10.28	59.4	11.21	53.10	15.3	0.000
	Trans Nzoia	24 - 86	55.3	10.43	54.7	9.37	53.5	7.96	67.14	10.3	0.093
Negative stereo-typing (8 items)	Total	8 - 40	29.0	5.39	29.3	5.40	28.6	4.92	29.53	6.7	0.010
	Machakos	8 - 40	28.3	5.76	29.4	5.06	28.0	4.50	32.57	5.5	0.038
	Trans Nzoia	8 - 40	29.0	5.39	29.3	5.40	28.6	4.92	29.53	6.7	0.264
Exclusion and discrimination (7 items	Total	7 - 35	18.0	5.49	17.7	4.85	21.2	5.87	20.71	6.9	0.000
	Machakos	7 - 35	17.4	5.81	17.6	4.97	22.3	5.86	18.20	7.1	0.014
	Trans Nzoia	7 - 35	18.4	5.13	17.8	4.73	18.9	5.51	24.29	5.1	0.000
Fear of cont agion (3 items)	Total	3 - 15	7.1	2.61	7.1	2.37	7.7	2.37	8.65	3.0	0.208
	Machakos	3 - 15	7.0	2.54	6.6	2.16	8.2	2.26	7.50	2.5	0.800
	Trans Nzoia	3 - 15	7.1	2.68	7.6	2.52	6.6	2.39	10.29	3.2	0.030

Table 8
Descriptive statistics for the SABA scale and subscales, by Gender

			Male (n= 354)		Female (n= 358)		
		Score Range	Mean	SD	Mean	SD	pvalue
Full scale (18 items)	Total	21 - 86	55.3	10.9	53.1	11.1	0.297
	Machakos	21 - 86	54.0	10.8	52.2	12.5	0.657
	Trans Nzoia	21 - 86	56.7	10.4	54.0	9.59	0.404
Negative stereo-typing (8 items)	Total	8 - 40	29.7	5.0	28.4	5.69	0.156
	Machakos	8 - 40	27.9	6.3	27.9	6.34	0.644
	Trans Nzoia	8- 40	30.3	5.0	29.0	4.9	0.091
Exclusion and discrimination (7 items)	Total	7 - 35	18.4	5.6	17.7	5.3	0.645
	Machakos	7 - 34	17.9	5.6	17.4	5.82	0.585
	Trans Nzoia	7 - 35	18.9	5.4	18.0	4.73	0.776
Fear of contagion (3 items)	Total	3 - 15	7.3	2.7	6.9	2.49	0.052
	Machakos	3 - 15	7.1	2.6	6.8	2.4	0.571
	Trans Nzoia	3 - 15	7.5	2.8	7.1	2.60	0.214

Table 9
Linear regression analysis for the SABA full scale and subscales

	Full scale SABAS (18 items) Model 1	Negative stereo -typing (8 items) Model 2	Exclusion and discri- -mination (7 items) Model 3	Fear of contagion (3 items) Model 4
Incidence region-Trans Nzoia	-6.494*** (1.374)	-2.465*** (0.627)	-1.976** (0.728)	-1.453*** (0.337)
Age 25-34	-0.771 (1.221)	-0.536 (0.566)	-0.287 (0.594)	0.13 (0.271)
Age 35-39	0.988 (1.653)	0.146 (0.741)	0.481 (0.783)	0.509 (0.375)
Secondary	-8.037*** (1.208)	-3.043*** (0.554)	-2.982*** (0.576)	-1.710*** (0.274)
Post-secondary	-11.91*** (1.398)	-5.236*** (0.663)	-3.929*** (0.672)	-2.686*** (0.294)
Married	0.285 (0.796)	0.369 (0.376)	-0.0909 (0.393)	-0.0743 (0.182)
Catholic	0.313 (0.794)	-0.0718 (0.387)	0.268 (0.399)	0.165 (0.186)
Muslim	4.186* (1.676)	0.495 (0.754)	2.767*** (0.800)	0.805* (0.344)
Other/no religion	0.768 (1.997)	-0.197 (0.983)	0.453 (1.000)	0.223 (0.440)
Female	-1.136 (0.702)	-0.455 (0.340)	-0.569 (0.342)	-0.26 (0.157)
Age 25-34 x Trans Nzoia	-0.566 (1.505)	-0.364 (0.737)	0.092 (0.751)	-0.204 (0.347)
Age 35-39 x Trans Nzoia	-0.898 (1.958)	-1.26 (0.935)	0.181 (0.944)	-0.129 (0.453)
Secondary x Trans Nzoia	6.719*** (1.528)	2.511*** (0.744)	2.316** (0.760)	1.403*** (0.356)
Post-secondary x Trans Nzoia	7.211*** (1.778)	3.344*** (0.895)	1.959* (0.866)	1.619*** (0.397)
Constant	60.98*** (1.252)	32.51*** (0.546)	19.59*** (0.615)	8.599*** (0.289)
N	705	705	705	705
R-sq	0.099	0.083	0.088	0.37
adj. R-sq	0.081	0.065	0.070	0.018
Rmse	9.381	5.08	4.395	2.062

Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001

Table 10
Proportion of Respondents Agreeing/Strongly Agreeing with SABAS Items, by County

Statements	Machakos	TransNzoia
Negative Stereotyping(NS)		
A woman who has an abortion is committing a sin.*	92	92
A woman who has had an abortion might encourage other women to get abortions.*	73	84
A woman who has an abortion brings shame to her family.*	84	84
A woman who has an abortion brings shame to her community.*	80	83
The health of a woman who has an abortion is never as good as it was before the abortion.*	86	77
A woman who has an abortion is a bad mother.*	58	76
A woman who has had an abortion cannot be trusted.*	64	74
Once a woman has one abortion, she will make it a habit.*	59	72
Exclusion and Discrimination(E&D)		
A man should not marry a woman who has had an abortion because she may not be able to bear children.*	35	51
I would tease a woman who has had an abortion so that she will be ashamed about her decision.*	31	48
A woman who has had an abortion should be prohibited from going to religious services.*	32	46
I would stop being friends with someone if I found out that she had an abortion.*	30	46
I would point my fingers at a woman who had an abortion so that other people would know what she has done.*	24	44
I would try to disgrace a woman in my community if I found out she'd had an abortion.*	31	41
A woman who has an abortion should be treated the same as everyone else.^*	27	39
Fear of Contagion (FC)		
A woman who has an abortion can make other people fall ill or get sick.*	32	51
A woman who has an abortion should be isolated from other people in the community for at least 1 month after having an abortion.*	21	46
If a man has sex with a woman who has had an abortion, he will become infected with a disease.*	28	45

*Significant at p<0.001(Chi-square)

DISCUSSION

The objectives of the study were to determine the levels of stigma in two regions of Kenya with High and low incidences of unsafe abortion and explore the difference in levels of stigma among communities in the two regions and identify determinants of abortion-related stigma. Our findings indicate varying levels of stigmatising attitudes, beliefs and actions towards women who had abortions in the two counties. We note that the full-scaleSABAS score ranges for the two counties, average full-scale SABAS scores of 55.4(Trans Nzoia) and 54.2(Machakos) represent moderate to moderately high levels of stigmatising attitudes, beliefs and actions among the study populations. Interestingly, the pattern of increasing full and sub-scale SABAS scores starting with Trans Nzoia and Machakos corresponds to the nature and interpretation of the level of incidence of unsafe abortion in regions where the counties are located (5), with Trans Nzoia located in Rift Valley region with the highest incidence and Machakos from Eastern region with lowest Incidence of unsafe abortion. These findings could provide an answer to question on the link between abortion incidence and levels of abortion-related stigma, meaning that areas with high levels of abortion-related stigma are likely to register high unsafe abortion incidence and Vis-Versa. As such, to address the incidence of unsafe abortions to reduce maternal mortality and morbidity, interventions need to be targeted at addressing abortion- related stigma.

Results from the multivariate analyzes indicate that site and educational attainment are the two personal characteristics most strongly associated with stigmatising views about abortion. Findings indicate that respondents from Trans Nzoia County hold higher stigmatising attitudes, beliefs and actions than those from Machakos County. This implied that understanding county dynamics and differences regarding socio-cultural and other variables would be critical aspects to take into consideration in any stigma reduction initiatives. Similarly, the findings that indicate that stigmatising attitudes are stronger among individuals with lower levels of educational attainment highlight the need to engage out-of-school youth, as well as individuals who have not had the opportunity to attend secondary school (or beyond) to equip them with information regarding abortion.

Although religious affiliation did not emerge strongly as a characteristic significantly associated with the full SABAS score, it did show significant association with the E&D sub-scale. Specifically, individuals in the "Muslim" group held more exclusionary and discriminatory views than their Protestant counterparts – this is important finding that could be considered when partnering with religious leaders and groups for stigma reduction activities. A note of caution though is, this statistically significant finding should not overshadow the fact that a majority of respondents across the two countries categorised themselves as Protestant or Catholic, and many of these individuals hold very stigmatising views about abortion. This indicates that organizations and group working to reduce stigma need to engage with all types of religious groups.

The extent of theagreement by respondents with individual SABAS items provide insight into the types of messages and / or information that could be incorporated into stigma reduction interventions in these counties. With very high proportions of respondents across the two counties agreeing with Negative Stereotyping (NS) items such as sin, shame, trustworthiness, and poor health, these should be given priority in efforts aimed at reducing abortion-related stigma. This should also apply to Exclusion and Discrimination (E&D) sub-scale, even though the proportion of agreement among respondents with its items was moderate in both counties, but higher in Trans Nzoia compared to Machakos. However, nearly one-third of respondents in Machakos 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 – two issues on to abortion-related stigma that are worth exploring further at the community and individual levels. The findings for the item in the E&D sub-scale about treating a woman who has had an abortion the same as everyone else warrants further discussion. A majority of individuals in Trans Nzoia and Machakos (39% and 27% respectively) agreed that women who have had an abortion should be treated the same as everyone else yet these counties all had ahigh agreement for negative stereotyping and other exclusion and discrimination items. This is an area of theabortion-related stigma that needs further research and exploration to understand fully the relationship between attitudes and actions. Lastly, the fear of contagion items had moderate to high agreement for Trans Nzoia, indicating that stigma reduction efforts in this region should likely include these issues in their interventions.

As with the E&D items, the fear of contagion (FC) items had limited agreement in the context of both counties and do not necessarily needed to be incorporated into stigma reduction efforts at the community level.

In conclusion, abortion is a highly stigmatised subject in communities. However, communities in Trans Nzoia County expressed more stigma compared to women in Machakos County, especially for young unmarried women. With Ministry of Health withdrawing standards and guidelines that offered opportunities for women to seek safe abortion services, women were left to seek abortion services in unsafe places. Stigma is an important contribution on

whether or where a woman will seek asafe or unsafe abortion, eventually increasing incidences of unsafe abortion if options available are stigmatizing to the woman. To address the challenge of unsafe abortions, initiatives targeting stigma reduction interventions both at health facility and community level must be put in place.

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