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Magnitude and determinants of unsafe abortion among Zambian women presenting for abortion care services: A multilevel analysis

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Unsafe abortion is a public health problem that is disproportionately higher in sub-Saharan Africa, where approximately 77% of all abortions are unsafe. The annual incidence is estimated to be 5.5 million, a major cause of maternal mortality and morbidity, yet it is preventable. The magnitude and determinants of unsafe abortion vary across the regions because of the unmet need for modern contraceptives, lack of accessibility and availability of Comprehensive Abortion Care Services (CAC), and stigma.[1] In most sub-Saharan African countries, women continue to seek secret abortions despite it being legal. This is attributable to cultural and religious beliefs that are deep-rooted with negative connotations towards abortion.[1] In Zambia, abortion is legal, yet in practice, it seems far more complicated, where 50% of gynecological admissions and 30% of maternal deaths result from unsafe abortion.[2] Unfortunately, there is little information regarding the magnitude and determinants of unsafe abortion in Zambia. Therefore, this cross-sectional study aimed to assess the magnitude and determinants of unsafe abortion among women presenting for CAC in nine selected public health facilities in Zambia's Lusaka and Copperbelt provinces. We collected data using a structured questionnaire, and ethical approval was obtained from the University of Zambia's Biomedical Research Ethics Committee (approval number: 1852–2021). We included women aged 15 to 49 years and those who responded to the question on who conducted the abortion and where it was initiated. Those who did not sign written informed consent were excluded.

In total, 362 women were eligible for analysis and 77 (21.3% [95% confidence interval, 16.8–25.3]) had unsafe abortions. The determinants of unsafe abortion were being unmarried, living in a high-density residential area, having a history of unwanted pregnancy and miscarriage,

TABLE 1 Magnitude and multilevel regression analysis for the determinants of unsafe abortion among women seeking abortion care service in Lusaka and Copperbelt provinces, Zambia (N= 362)

	Unsafe abortion					
	No	Yes				
	(n = 285)	(n = 77)				
Variable	No. (%)	No. (%)	COR	95% CI	AOR	95% CI
Individual-level factors						
Age, year						
≤24	115 (40.4)	30 (38.9)	Reference			
25–34	124 (43.5)	30 (38.9)	1.04	0.59–1.91		
≥35	46 (16.1)	17 (22.2)	1.73	0.82–3.62		
Marital status						
Married	189 (66.3)	27 (35.1)	Reference		Reference	
Unmarried	96 (33.7)	50 (64.9)	3.11	2.04–6.35	1.49	1.07–3.17
Education level						
Primary	70 (24.6)	28 (34.7)	Reference			
Secondary	153 (53.7)	43 (57.3)	0.69	0.37–1.29	0.54	0.32–1.89
Tertiary	62 (21.8)	6 (8.0)	0.30	0.24–0.81	0.32	0.17–1.06
Employment status						
Employed	91 (31.9)	19 (24.7)	Reference			
Unemployed	194 (68.1)	58 (75.3)	1.14	0.61–2.14		
Residence (density)						
Low	39 (13.7)	5 (6.5)	Reference		Reference	
Medium	97 (34.2)	19 (24.7)	1.39	0.87–4.12	1.05	0.35–4.81
High	148 (52.1)	53 (68.8)	4.05	1.81–9.62	2.34	1.24–6.39
Religious denomination						
Catholic	59 (20.8)	20 (25.9)	Reference			
Pentecostal	110 (38.7)	32 (41.6)	1.93	0.91–4.64		
Protestants	104 (36.6)	24 (31.2)	0.85	0.38–1.89		
Other	11 (3.9)	1 (1.3)	1.87	0.88–4.02		
	—	—	0.99	0.95–1.15		
No. of pregnancies, median (IQR)	—	—	1.17	1.02–1.39	1.03	0.96–1.44
History of unwanted pregnancy						
No	182 (75.9)	36(57.7)	Reference		Reference	
Yes	103 (24.2)	41 (42.3)	1.97	1.21–3.34	1.85	1.47–3.87
History of miscarriage						
No	189 (66.3)	30 (38.9)	Reference	1.83–5.19	Reference	1.48–6.39
Yes	96 (33.7)	47 (61.1)	2.97		2.68	
Use of contraceptives						
No	101 (35.8)	27 (34.)	Reference	0.62–1.82		
Yes	184 (64.8)	50 (65.8)	1.07			
Aware that abortion is legal in Zambia						
Yes	138 (48.4)	17 (22.1)	Reference		Reference	
No	147 (51.6)	60 (77.9)	3.15	1.99–7.85	2.88	1.23–9.77

TABLE 1 (Continued)

	Unsafe abortion					
	No	Yes				
	(n = 285)	(n = 77)				
Variable	No. (%)	No. (%)	COR	95% CI	AOR	95% CI
Individual-level factors						
Hospital-level factors						
Easy access to abortion services?						
No	187 (65.6)	67 (87.1)	Reference			
Yes	98 (34.4)	10 (12.9)	0.42	0.18–0.97	0.76	0.65–1.48
Aware that hospitals offered free abortion services						
Yes	207 (72.6)	42 (45.4)	Reference			
No	78 (27.4)	35 (54.6)	2.05	1.48–4.76	1.92	1.21–8.95
Province						
Lusaka	222 (75.3)	39 (52.0)	Reference			
Copperbelt	73 (24.7)	36 (48.0)	3.13	1.56–4.41	2.19	1.46–7.61

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; COR, crude odds ratio; IQR, interquartile range. The blank spaces indicate that a variable was dropped from the model.

being unaware that abortion is legal in Zambia, being unaware that hospitals offered free abortion care services, and coming from Copperbelt province (Table 1). The magnitude of unsafe abortion is high, in keeping with previous studies in similar resource-poor settings.[3,4] The present study revealed that the unmet need for modern contraceptive methods, lack of information that abortion is legal, and regional differences in the CAC provision could have contributed to unsafe abortion.[3,4] In conclusion, our findings suggest that modifiable factors contribute to unsafe abortion, and interventions should be implemented to reduce it. Priority should be given to unmarried women and residents from high-density areas while providing more education on modern contraceptive methods and advocating for legal abortion to avoid its consequences.

AUTHOR CONTRIBUTIONS

Note: The authors' initials are in order of appearance in the author list. MKL: Considerable contribution to conception and study design, acquisition of data and analysis, and drafting of manuscript. MM: study design, data analysis, and manuscript writing. CJ: study design, manuscript writing, and proofreading of the final manuscript. KC: study design, monitoring of data collection, and proof reading and approval of final manuscript. CCP: substantial contribution to conception and study design, acquisition of data, and drafting the manuscript. MNM: study design, data analysis, and drafting the manuscript. VS: development of the data collection tools, study design, data collection, and manuscript writing. MM: study, design, data analysis, manuscript writing, and approved of the final version. BM: conceptualization of the study, study design, development of the data collection tools, monitoring data collection, and manuscript writing. BV: conceptualization of the study, study design, development of the data collection tools, monitoring data collection, and manuscript writing.

PK: study design, designed the questionnaire for the Open Data Kit and monitored data collection process, performed data analysis, and writing the draft manuscript. All authors read and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare no competing interests.

DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions. The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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