Comparative cost analysis of different strategies for medical abortion in Georgia

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Background

Access to safe and effective abortion is an essential component of maintaining and improving reproductive health of women of reproductive age and commonly used procedure. According to WHO 3 out of 10 (29%) of all pregnancies, and 6 out of 10 (61%) of all unintended pregnancies, ended in an induced abortion[1]. When done properly, abortion is one of the safest medical procedures; however, unsafe abortions inflict significant level of morbidity and mortality globally. Among these, 1 out of 3 induced abortions are carried out in the least safe or dangerous conditions[2] leading to maternal death, health complications and infertility.

Choice of abortion method and setting can depend on multiple factors. Number of studies have shown that economic aspect also plays a significant role in patients' choice, namely the costs associated with the procedure[3]. Therefore, availability of safe, effective, and less costly alternatives is important for enhanced access to safe abortion services in Georgia.

In 2019, 13 301 induced abortions have been performed in Georgia. Based on the report from the National Center of Disease Control and Public Health, the reported figures might underreport existing situation given the issues with reporting[4]. Among officially registered induced abortions, medical abortion became the lead method of choice in 2018, and in 2019, 42% of all abortions were performed using medical abortion. Overall, medical (pharmaceutical) abortions are common and easily accessible alternative and when administered properly, can be highly efficacious in terminating the pregnancy.

Description of the comparative cost analysis component

Standard practice of medical abortion (MA) in Georgia includes facility visits, consultations with trained ObGyn and examination. Specifically, the procedure includes 1st visit -- consultation with gynecologists, who provides pre-abortion consultation as well as examines the patient and ultrasound examination. Laboratory tests can be administered, if needed (e.g. in case of anemia). According to Georgian legislation, patients are given 5 days waiting period after the 1st consultation before administration of the MA.

After 5-day waiting period women who decide to terminate their pregnancies should return to the clinic to obtain medical abortion drugs (or have surgical termination) from the provider. Women are allowed to take mife either in clinic or at home, there is no observation period after mife ingestion, women take miso pills 24-48 hours after mife administration at home. According to safe abortion national guidelines clinic visit is not necessary after uncomplicated medical abortion though many providers ask women to come back to the clinic for assessment of abortion outcome.

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[1] Bearak J, Popinchalk A, Ganatra B, Moller A-B, Tunçalp Ö, Beavin C, Kwok L, Alkema L. Unintended pregnancy and abortion by income, region, and the legal status of abortion: estimates from a comprehensive model for 1990–2019. Lancet Glob Health. 2020 Sep; 8(9):e1152-e1161. doi: 10.1016/S2214-109X(20)30315-6.

[2] Ganatra B, Gerdts C, Rossier C, Johnson Jr B R, Tuncalp Ö, Assifi A, Sedgh G, Singh S, Bankole A, Popinchalk A, Bearak J, Kang Z, Alkema L. Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. The Lancet. 2017 Sep

[3] Hu D, Grossman D, Levin C, Blanchard K, Goldie SJ. Cost-effectiveness analysis of alternative first-trimester pregnancy termination strategies in Mexico City. BJOG. 2009 May;116(6):768-79. doi: 10.1111/j.1471-0528.2009.02142.x. PMID: 19432565.

[4] NCDC 2019 Annual statistical guidebook, P.91-92

As a part of the intervention observed by this study, patients were offered to receive a package containing mifepristone and multi-level pregnancy test (MLPT) to confirm successful abortion after the mandatory 5-day waiting period is exhausted. This would eliminate the need to travel for 2nd and 3rd visit for medical consultation and ultrasound confirmation.

Cost compared included that of a standard practice of MA and a new service delivery model that included mailing the medical abortion pills and MLPTs for MA outcome self-assessment without need for in-person clinic visit. This latest was offered free of charge.

On average, the cost of medical abortion in Georgia is 250 GEL in big cities. This includes approximately 150 GEL for pharmaceutical costs and 100 GEL of direct medical services[5]. Proposed intervention was expected to alter the medical service component of the costs and this assumption was used to construct cost comparison model for the analysis.

Methodology

This cost comparison analysis compares costs of two interventions providing patients with medical abortion services: Intervention #1 is a standard care, which includes 2 or 3 visits to the facility, with ObGyn consultation and ultrasound exam during first and third visit; Intervention #2 includes one visit with ObGyn consultation and ultrasound exam, after which follow up is provided via phone.

A specially designed questionnaire (with integrated cost-related questions) was used to estimate the costs related to the abortion service received by the patients. Survey was administered among individuals who were offered participation in the study, including those, who refused to participate in the study intervention. Costs-related questions covered aspects such a direct cost related to medical services, as well as indirect costs, such as lost income.

Direct costs related to the service included: costs related to ObGyn consultations and ultrasound examination, as well as costs of medication.

Indirect costs related to service were collected from a patient's perspective and included: lost income due to absenteeism at work and/or school (students), failure to perform regular household duties and formal or informal costs related to seeking help, transportation related costs.

Information on patient preferences related to the two interventions discussed was also collected.

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[5] This estimate is based on the interviews with female assistance groups, which provide support services to women seeking abortion and SRH services.

Results

Overall, 129 individuals were offered to take part in the study and 7 women refused to participate in the clinical research study. These 7 women had willingness to consent to participate in the costing survey, study team member conducted short interviews with them at the initial visit, five days later when they returned to the clinic to obtain medical abortion drugs and during the third in clinic follow-up visit. The interviews covered the questions about costs associated with standard medical abortion service and woman's travel to the clinic.

During the first clinical study participants were interviewed about cost related to transportation to the clinic as well as gathering information if they lost wages due to missing work and having extra cost for asking assistance due to missing their obligations at home.

122 individuals who consented participation in trial, have received the Mifepristone and home-based test and 93% (n: 114) have successfully completed the procedure, which was confirmed by the results of home-based test.

Profile of study population

Mean age was 30.48 (with 19 being the youngest and 44 being the eldest). On average, gravity was 4.57 and parity 1.89. Mean gestation age was 37.98 days.

Most of them have either completed high school 45.1% (n: 55), or post-graduate education – 54.1% (n: 66). Only one participant had incomplete high-school education.

Household earnings for 44.3% of respondents (cumulative n: 54) is less than 800 GEL a month. The rest named that household earning was between 801 to 8333 GEL; only one respondent stated the earning over 8333 GEL.

Lost income and expenditures

Most of the participants did not have paid work at home, or outside of home; 39.3 % (n: 48) had paid work. Out of those, 10 respondents had to miss the workday in order to attend the visit to the clinic, which is 8.2 % from the whole study population and 20.8% - from those who were employed. **Only for one respondent work-related absenteeism has resulted in lost wage**. A pay for this individual, lost due to attendance of the clinic was 20 GEL. **A returned visit, which is a current standard procedure for MA, would have been associated with additional lost wages for 2 respondents** (1.6% of the total study population) and the estimated amount of the earnings lost would have been 20 GEL per day for each participant.

Women perform significant share of unpaid work. Although, this type of work does not have a monetary value attached, failure to provide it may result in economic burden on the women and the household (such as a need to hire paid work (paid in cash, or non-cash), or to shift the task to other member who might forego his/her earnings in that time). 97.5% of respondents (n: 119) said that they have obligations to fulfill at home. This included childcare (78.7%, n: 96), care for elderly members (4.1%, n: 5), household chores (94.3%, n: 115), agricultural activities (24.6%, n: 30), and care for domestic animals (18.9%, n: 23).

Visit to the clinic was associated with the failure to perform unpaid household obligations for 45.9% (n: 56) of respondents, while 52.5% (n: 64) said that the visit was not associated with the failure to attend their regular household obligations. None of the participants had to hire a paid assistance (or provide any kind of in-kind gifts) in order to cover for the time spent in for the visits to healthcare facility.

One participant was a student and visit to healthcare facility was associated with missing educational institution and so would have been a repeated visit.

With regards to travel time and costs associated with it, 32% of respondents resided in rural areas (n: 39 and 68% (n: 83) in urban areas with better transportation system. Very few had to travel as far as 40-100 km to reach healthcare facility providing MA services, 50% of respondents could reach the facility within 20 min travel time and 95% - within an hour. 37.1% (n: 43) did not incur any costs related to transportation, and for the rest, costs incurred ranged from 1 to 20 GEL with a weighted average of 4.8 GEL. Means of transportation has ranged from walking to taking public transport, inter-city transport or personal vehicle. Only one respondent had to hitch-hike to the destination. Most of the respondents said that they will use the same means of transportation and potentially, incur the same costs associated with travel – 89.3% (n: 109) if additional visits were to be made to the medical facility.

Benefits: As for the reason to choose proposed intervention – a simplified model of MA service delivery, participants prioritized benefit of fewer facility visits over the costs associated with the visit (e.g. lost income) – 64.8% (n: 79) vs 29.5% (n: 36). In addition, comfort associated with a simplified model of MA service delivery was also a driving reason for the choice – 63.1% (n: 77).

Outcomes of the procedure: out of 122 study participants, 2 women were excluded from the study due to changing their mind about abortion and MA pills were not sent to them. Out of 120 women, one came to the clinic prior the provider call, and one was lost to follow up. For abortion outcome 119 cases were analyzed, complete abortion was diagnosed among 114 (95.8%) and 5 (4.2%) women had incomplete abortion. In total 10 women had in-person clinic visit, one before provider call, 5 scheduled visits by provider, and 4 unscheduled visits. Costs associated with the return visit were not reported.

Preferences: Most of the study participants preferred study intervention over standard care. The reasons for the preference included: cost savings associated with transportation (86.9% (n: 106)), cost savings for not needing a 3rd visit (73% (n: 89)). Lost wage was a factor only for 4 respondents.

Willingness to pay for home-based multi-level pregnancy test has shown very uneven distribution. As the chart below shows, majority of respondents have stated 5 and 10 GEL as a preferred price. Factors such as household income, employment status, and place of residence were not correlated with preferred amount participants were willing to pay for MLPT.

Willingness to Pay
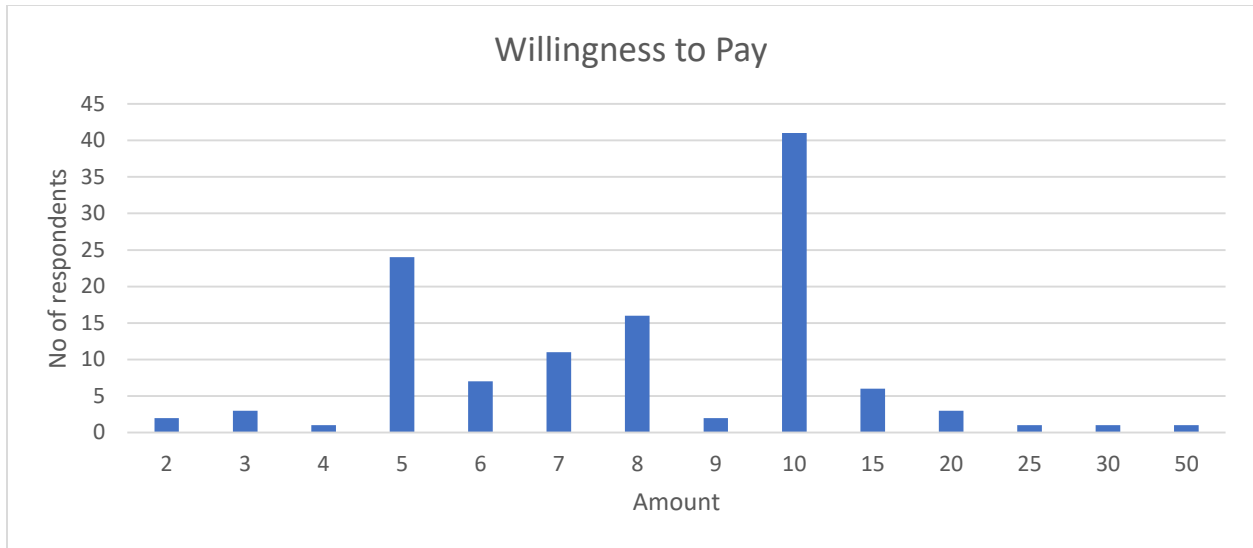
Discussion

Cost of the standard care for MA is estimated as 250 GEL based on the interviews with civil society groups, which support women in need to seek MA services and two service providers. The estimated breakdown of the costs is the following: 100 GEL for 3 visits to the facility (2nd visits provided free of charge) and 150 GEL for pharmaceutical component.

However, this cost does not account for cost incurred by the patient to undergo the procedure. Those were estimated based on the reported costs for 1st visit and patient projected costs of the 2nd and 3rd visits. Overall, the constructed model is the following:

Direct Medical Costs

Direct medical costs for the interventions were identified based on the model described in the following chart. All patients who undergo MA service incur costs related to the first visit and drugs on the second visit, therefore, in order to estimate the marginal costs, this was not included in the analysis.
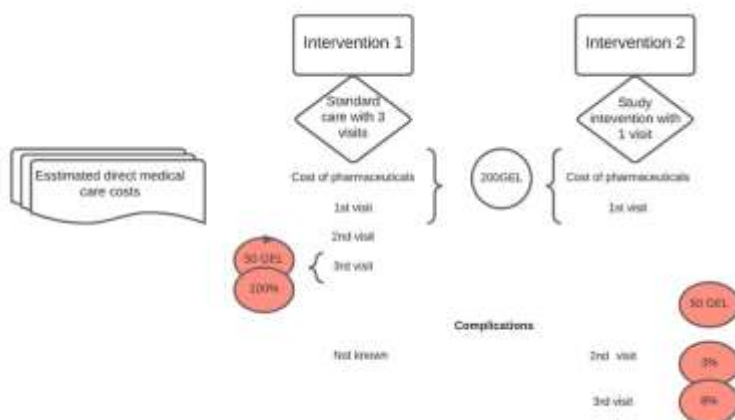
For the Intervention 1, additional 50 GEL cost is incurred for the 3rd visits (what we assumed to be) 100% of the MA patient population.

Serious medical complications were not recorded as a part of the study (they did not occur/were not reported for the study patient population); although, as a part of the Intervention 2, some patients needed to make repeated visits, which were associated with the

costs per the model constructed. Overall, 7% (n: 9) of participants made a repeated visit – 5 was based on the recommendation from the trained study staff, while 4 visited based on their own decision.

Under this scenario, comparison of direct medical costs for the Intervention 1 VS Intervention 2 was 50:1 to 50:0.07, which makes the cost 10 times less than the standard intervention.

However, home-based test used by 100% participants in the Intervention 2 group was provided free of charge. Market price of the test is not known, but if the price approaches 50 GEL, this will fully offset any potential saving in direct medical costs.

Direct non-medical costs

As a part of the study, information on direct non-medical costs was not available for participants in the Intervention 1. As noted above, there were only 7 participants who have refused participation in the study. Non-medical costs incurred by these patients could not be retrieved from any other sources either, including patient records.

There were no statistically significant differences between participants in intervention 1 and 2 based on the scarce information and small sample size. If we assume that these two groups share the same characteristics, we can potentially extrapolate costs incurred by the patients in the Intervention 2 to those in the intervention 1. Therefore, we have used information collected from the participants in the Intervention 2 to estimate costs related to each visit.

The following components have been included:

1. Lost income due to absenteeism from work
2. Costs of missing out on household duties
3. Transportation cost for those traveling more than 1 hour.

	Had to miss work due to the visit	
91.80% No		Yes 8.20%

	Lost income due to absentism	
98.40% No		Yes 1.60%

	Failure to perform unpaid HH duties	
54.10% No		Yes 45.90%

	Transportation Time (more than 1 hour)	
43% No		Yes 57%

	Complications requiering returned visit	
	2nd visit	
97% No		Yes 3%
	3rd visit	
92% No		Yes 8%

Costs related to absenteeism from work: estimated lost income for missing out the work was 20 GEL. However, not all who are employed have reported lost income. Probability of lost income increases with the number of visits.

Household duties: this component was not reported to be associated with costs.

Transportation: average cost for was 4.8 GEL.

The table below summarizes an estimated costs for Intervention 1 and intervention 2.

Components	Unit cost	Intervention 1		Intervention 2	
Direct medical costs		Range	Weigted costs	Range	Weigted costs
Pharmaceuticals costs	150	100.00%	150	100.00%	150
Visit 1	50	100.00%	50	100.00%	50
Visit 2		100.00%	0	3.00%	0
Visit 3	50	100.00%	50	8.00%	4
			250		**204**
Direct patient's costs (per visit)					
Lost income	20	1.60%	0.32	1.60%	0.32
Transportation	4.8	100.00%	4.8	100.00%	4.8
			5.12		**5.12**
No of vists		3	**15.36**	1.12	**5.73**
Weigted costs			***265.36***		***209.73***

Overall, the Intervention 2 was 20% less costly compared to the Intervention 1. If shared/fixed components (pharmaceuticals and 1st visit) are deducted the difference in variable costs is 1:0.15. However, this does not account for the cost of home-based multi-level pregnancy test and postage service.

Conclusion

The study looked at actual cost incurred by the patients (based on what they have reported), as well as their stated preferences.

With regards to stated preferences, the participants of the study declared strong preference for the intervention under the study, namely, for simplified MA services with home-based testing. Preferences strongly reflected potential cost savings arising as the results of fewer facility visits – saved time and transportation costs. Indeed, nearly half of the respondents traveled more than 1 hour to reach the facility. As a part of the study, we have examined direct medical and non-medical costs. Medical cost component was evaluated based on the information from women support groups that provide financial aid for women in difficult circumstances and among other offer financial help for those who need abortion services. Based on this finding, cost of medical abortion varies and is more expensive in Tbilisi than in regions. However, average spending is 250 GEL. It includes 150 GEL for drugs and 50 GEL for 1st visits, which can be considered fixed from the perspective of this study, as all participants have to include those. Information on direct medical spending for complications or additional drugs (e.g. painkillers) was not provided.

Direct variable medical costs were costs related to the 3rd visit, which included consultation and ultrasound exam and was valuated as 50 GEL.

We have estimated direct non-medical costs from patients' perspective to evaluate lost income, transportation related costs and costs due to failure to perform regular household duties. Given that such evaluation was carried out first time, similar data was missing from control group. Under the assumption that both groups share similarities in characteristic, which would define non-medical direct costs, we have constructed a model to allow comparison of cost. Estimated costs incurred by participants of the standard care was estimated to be 3-times higher than that of the intervention group. However, absence of valuation of all costs from patient perspective leads us to assume that differences are larger.

Half of respondents' household earning was less that 800 GEL. Spending for abortion services in the amount of 265-209 GEL represents 33%-26% of their total income. For 25% of respondent this represents importing expenditures.

Additional studies would be required to explore non-medical costs of the services from patient's perspective but given the gradient in income status and strong preferences for the least costly alternative, provision of simplified MA model has a potential to deliver superior alternative to the standard care in terms of cost component. However, pricing of home-test should consider a very narrow cost differences between the interventions. Price of 50 GEL would fully offset any financial benefits, while expected/desired price should be 5-10 GEL.

Notably, price of the home-based test, costs related to postage and medical costs of follow-up were not included in the study and those would be the limitations to be explored further.