INFLUENCE OF PERFORMANCE-BASED FINANCING ON THE USE OF MATERNAL HEALTH SERVICES: A QUASI-EXPERIMENTAL STUDY BETWEEN THE HEALTH ZONES OF KATANA AND KALEHE IN SOUTH KIVU/RDC

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Abstract: *This paper seeks to determine the influence of performance-based financing on maternal health in South Kivu province, so it was crucial to conduct an analysis to generate scientifically based evidence on the increase in facility-based deliveries, adoption of family planning and administration of tetanus toxoid to pregnant women in health centres in the intervention health zone, compared to much less dramatic changes in health centres outside the pilot health zones.*

This manuscript seeks to determine whether Performance-Based Financing would have an influence on improving the quality of maternal health care in the Katana health zone in South Kivu in a fragile context compared to the control health zone.

Key Words: *Performance-based financing - maternal health - health system.*

1. INTRODUCTION :

In the DRC, and more particularly in the province of SUD-KIVU, considerable improvements have been reported for certain maternal health indicators, including higher contraceptive prevalence, earlier use of antenatal care, more deliveries in institutions rather than at home, increased vaccination coverage of children and increased demand. (South KIVU DPS Report, 2020)

These indicators collectively indicate an improvement in the use of health services, but provide little information on the reasons for the increase in the use of services. these are the disparities between rural and urban areas (DPS report, op. cit.). During 2006, the DRC introduced into its system an initiative in certain health provinces of the country to experiment with performance-based financing (PBF) in order to increase the productivity of health workers and the quality of services provided in hospitals and health centers (MINISANTE, 2015).

South Kivu made considerable progress in its efforts to improve maternal health after the war, when maternal mortality dropped from 186 in 2010 to 112 in 2008. In 2006, Bryce et al. estimated that South Kivu would need to maintain an 11% annual reduction in maternal mortality between 2007 and 2015 to achieve the MDGs. The exception to this trend was reported by Hong et al. who found that wealth was not predictive of maternal mortality in a pooled dataset of four DHS covering a period of more than ten years. (Hong R, et al., 2011)

Prevention efforts, such as vaccinations, vitamin A supplementation and distribution of treated mosquito nets, benefit from national campaigns that universally target vulnerable populations, in this case women of childbearing age. Many curative interventions rely on formal health services provided by health facilities to meet acute needs. The success of facility-based interventions, such as safe motherhood programs, requires a baseline level of service utilization to have a measurable effect. (ZS KATANA report, op.cit.)

In the Katana health zone, the inequality in the use of services between the poorest and the less poor highlights the need to develop interventions to reach the poor, in particular women of childbearing age. Health interventions should motivate poor households to seek services or encourage providers to reach these populations. Approaches range from targeting individuals to supporting health infrastructure, and multiple approaches are needed. In addition, every

intervention developed, whether equity-focused or not, must be evaluated for its impact on equity for women of reproductive age. Without sustained attention to the equitable distribution and use of maternal health services, the poorest will remain disadvantaged. (OED, 2020)

The introduction of performance-based financing in the province of South Kivu has been closely monitored to determine whether this type of financing strategy can have a positive impact on the use of services, in particular for maternal health in a low-income countries like the Democratic Republic of the Congo. Evidence of increased use of preventive services is mounting; however, the effects on the use of maternal and preventive health services were not examined, nor was the overall equity of access. Performance-based financing, results-based financing, pay-for-performance, and results-based financing are a sample of the many names for health financing strategies that specify the transfer of money or goods in exchange for a measurable performance goal or action. (Basinga P, et al, 2006)

Today, no studies on the influence of performance-based financing have been conducted in the province of South Kivu, so it is crucial to conduct an analysis to generate scientifically based evidence on the increase in childbirth in establishment, adoption of family planning and administration of tetanus toxoid to pregnant women in health centers in the PFP health zone, compared to much less dramatic changes in health centers outside the zones health pilots.

This manuscript seeks to determine whether Performance-Based Financing would have an influence on improving the quality of maternal health care in the health zone of Katana in South Kivu in a fragile context.

2. LITERATURE REVIEW:

In reviewing the literature, although progress has been made in evaluations of performance-based financing in some countries, serious gaps remain, particularly with regard to scientific and rigorous findings, especially in the area of maternal health, as Witter et al. (2012) in his 2012 Cochrane review article shows that the combined evidence on performance-based financing is inconclusive. However, the evidence on which this claim is based was drawn from evaluations of performance-based funding programmes that had very different design and implementation characteristics. Indeed, Witter et al (2012) applied a rigorous evaluation framework to divergent studies, ranging from evaluations of diverse and different national programmes conducted by one NGO (Toonen et al.
Moreover, in these studies, the evaluation methodology used and the performance financing considered varied considerably between countries and health services.

The literature review by Witter et al (2012) concluded perhaps a little too categorically that there was a lack of rigorous evidence on performance-based financing implemented in some regions. However, the report correctly pointed out that further research is needed.

Most importantly, it stressed that the influence of performance-based funding depends on its design and implementation. Although there is indeed a paucity of good quality research evidence, two well-designed randomised controlled trials of performance-based funding programmes have recently produced conflicting results.

While the first evaluation of a well-designed performance-based financing intervention in South Kivu found significant results, the other evaluation of the Financing Initiative lacked evidence-based conclusions.

Therefore, this literature review shows that the results of studies conducted in Africa on the effectiveness of performance-based financing and quality of maternal health care, including syntheses and reviews of the evidence, are generally mixed (Das et al., 2016; Paul et al., 2018; Renmans et al., 2016; Witter et al., 2012) and uncertain (Wiysonge et al., 2017), so that no general conclusions can currently be drawn about their effectiveness (Witter et al., 2012) . This has led some authors and policymakers to question the relevance of performance-based financing in low-income countries (Paul et al. 2018).

3. MATERIALS: A structured survey questionnaire was given to women of childbearing age, and thanks to the different forms we had collected information in different health facilities in the KATANA health zone but also in KALEHE

4. METHOD:

To describe the influence of performance-based financing on maternal health in the rural health zone of Katana in South Kivu, we will use a survey questionnaire that will be administered to pregnant women on the day of the prenatal consultation, interviews will be addressed to various officials both at the intermediate and peripheral level and those working in international organizations in order to assess the quality of care offered to beneficiaries, records, reports and other documents will help us to complete certain information since the advent of performance-based financing.

This study is quasi-experimental with a retrospective focus, as it will focus on a description of the influence of performance-based funding on maternal health, in particular on antenatal consultations during the last 12 months after the end of the performance-based funding programme in the KATANA and KALEHE health zone.It will therefore focus

exclusively on maternal health and much more on antenatal consultation services across the different facilities in the Katana health zone. The target population for this research is pregnant women, who represent 4% of the total population, as well as the various health facility managers, i.e. a total of 17 health facility managers, the head doctor of the health zone and the managing administrator, the head of the CORDAID programme in South KIVU, a World Bank official in charge of Performance Based Financing, as well as two officials from the Provincial Health Division in charge of Performance Based Financing, who will be our key informants. To achieve our sample size, a random draw will be conducted to ensure that all women have the opportunity to be selected.

Sample size estimation

We used Lynch's formula to calculate the sample size from the items below: $n = \dfrac{NZ^2.p(1-p)}{Nd^2 + z^2 p(1-p)}$

Knowing that:
not: Desired sample size;
NOT: Target population;
Z: The value of variation at the 5% confidence interval (ie, the parameter related to the risk of error of 5%), as accepted for studies of a social nature. It is equal to 1.96, this corresponds to the number of standard deviations in addition to at least making it possible to exclude 5% in a normal observation;
p: Prevalence which is equal to 50% (the prevalence not being known)
d:Margin of error that we give ourselves for the magnitude that we want to estimate, ie 5%.
q: 1-p; it is the probability, the proportion of not having a case, i.e. 1-0.5=0.5

Thus, by replacing N,, q, p and by their respective values we obtain the results below; $Z^2 d^2$

$$n = \frac{NZ^2.p(1-p)}{Nd^2 + z^2 p(1-p)} = \frac{15339X(1,96)^2.0,5(1-0,5)}{15339X(0,05)^2+(1,96)^2.0,5(1-0,5)} \frac{15339X3,84X0,5X0,5}{38,3475+3,84X0,5X0,5} = \frac{14725,44}{39,3075}$$

n= 374.62 ≈ 375pregnant women to investigate

Table 1.

No.	HZ KATANA /HEALTH AREAS	POP: 4% of pregnant women	PROPORTION	NUMBER TO SURVEY PER HEALTH AREA	NO SURVEY	No.	ZS KALEHE / HEALTH AREAS	POP: 4% of pregnant women	PROPORTION	NUMBER TO SURVEY PER HEALTH AREA	NO SURVEY
1	Birava	384	0.0250	9	41	1	**Bushaku**	1010	0.0658	25	41
2	ciranga	899	0.0586	22	41	2	**Bushushu**	567	0.0369	14	41
3	Cishugi	441	0.0287	11	41	3	**Cigera**	361	0.0235	9	41
4	Ibinja	325	0.0211	8	41	4	**ishovu**	632	0.0412	16	41
5	Ihimbi	794	0.0517	19	41	5	**Kalehe**	737	0.0480	18	41
6	Iko	469	0.0305	12	41	6	**Kasheke**	273	0.0177	7	41
7	Irambira	584	0.0380	14	41	7	**Lemera**	380	0.0247	9	41
8	ishungu	572	0.0372	14	41	8	**Lushebere**	391	0.0254	10	41
9	Izimero	300	0.0195	7	41	9	**Luzira**	386	0.0251	9	41
10	Kabamba	528	0.0344	13	41	10	**Muhongoza**	559	0.0364	14	41
11	Kabushwa	289	0.0188	7	41	11	**Mushenyi Kahele**	793	0.0516	19	41
12	Kadjucu	253	0.0164	6	41	12	**Mweha**	431	0.0280	11	41

13	Katana Nuru	836	0.0545	20	41	13	**Nyabibwe**	375	0.0244	9	41
14	Lugendo	378	0.0246	9	41	14	**Nyamukubi**	356	0.0232	9	41
15	Luhihi	489	0.0318	12	41	15	**Tchofi**	545	0.0355	13	41
	SUBTOTAL			183						192	
	TOTAL	375									

5. DISCUSSION:

The introduction of performance-based financing in South Kivu province has been closely monitored to determine whether this type of financing strategy can have a positive impact on service utilisation, particularly for maternal health in a low-income country like the Democratic Republic of Congo. Evidence of increased use of preventive services is accumulating; however, the effects on the use of maternal and preventive health services have not been examined, nor has the overall equity of access. Performance-based financing, outcome-based financing, payment for performance, and outcome-based financing are a sample of the many names for health financing strategies that specify the transfer of money or goods in exchange for a measurable performance target or action. (Basinga P, et al, 2006)

Today, few studies on the influence of performance-based funding have been conducted in South Kivu province, so it is crucial to conduct an analysis to generate scientifically based evidence on the increase in facility-based deliveries, adoption of family planning and administration of tetanus toxoid to pregnant women in health centres in the intervention health zone, compared to much less dramatic changes in health centres outside the pilot health zones.

6. ANALYSIS:

Concerning the quantitative survey, after the data collection, a first verification of the survey questionnaires will be carried out in the field in order to ensure the best quality of the data. Then we will proceed to their coding and computer entry of the data.

A second quality control will be carried out by the coders and finally a control for cleaning the database will be carried out. The data will be entered using EXCEL software and then analyzed using EXCEL, SPSS software. The dependent variables will be crossed with the independent variables to see the cause and effect relationship as well as the influence of performance-based financing on maternal health. The main statistical test used will be the chi-square test in order to see the observed probability and the significance level according to the different variables observed for each hypothesis.

On the other hand, the qualitative survey will present the opinions and perceptions gathered from the different actors involved in Maternal Health and Performance Based Financing and finally, will identify the problems, the solutions to the defined problems and the recommendations resulting from all these solutions to the problems after their validation. The data collected will be captured and analyzed using Microsoft 2013. However, the inductive analysis will allow us to confront the data from different authors with those of our key informants with whom the interview was conducted.

On the other hand, the triangulation analysis will consist, from the data of the literature review, in underlining the connections or relationship existing between these and the data collected during the interviews and during the observations made; which still referred us to inductive conclusions. Indeed, the analysis of the data on the Decision-Making Process will be guided by the research objectives that have been pre-established, in this perspective it was a question of a thorough reading of the raw data in order to produce new emerging categories which allowed us as stipulated by Thomas:

- To condense the raw, varied and numerous data into a summarized format.
- Establish links between the research objectives and the categories derived from the raw data.
- Develop a frame of reference or model from the newly emerging categories.

7. FINDINGS:

By analysing the results of this study, and making a comparison on the basis of the established indicators, it can therefore be said that performance-based funding has had a real improvement on maternal health indicators in the Katana intervention zone compared to the Kalehe health control zone.

8. RESULT:

8.1 Use of maternal health services and satisfaction of pregnant women

Table 2. Use of health services

variables	ZS Katana		ZS Kalehe		TOTAL	
	Effective	% of ZS	Effective	% of ZS	Effective	% of total
Have received information on the course of the pregnancy*						
No	23	12.0%	14	7.7%	37	9.9%
Yes	169	88.0%	169	92.3%	338	90.1%
Reassuring information on the course of your pregnancy						
No	96	50.0%	13	7.1%	109	29.1%
Yes	96	50.0%	170	92.9%	266	70.9%
Are you ready to come back to this center for the ANC?						
No	106	55.2%	18	9.8%	124	33.1%
Yes	86	44.8%	165	90.2%	251	66.9%
Location used for health services since last pregnancy						
To the hospital	1	0.5%	1	0.5%	2	0.5%
Health center	191	99.5%	182	99.5%	373	99.5%
Feel comfortable during the CPN course						
No	32	17.5%	139	72.4%	171	45.6%
Yes	151	82.5%	53	27.6%	204	54.4%
Have been consulted in another CS						
No	6	3.1%	13	7.1%	19	5.1%
Yes	186	96.9%	170	92.9%	356	94.9%
Have been hospitalized at least one night during the last pregnancy						
No	11	5.7%	1	0.5%	12	3.2%
Yes	181	94.3%	182	99.5%	363	96.8%
Did you receive care in this establishment (injection, dressing, infusion, minor surgery, etc.) during your pregnancy?						
Faded away	0	0.0%	1	0.5%	1	0.3%
No	18	9.4%	2	1.1%	20	5.3%
Yes	174	90.6%	180	98.4%	354	94.4%
Are the treatments expensive?						
Faded away	8	4.2%	1	0.5%	9	2.4%
No	22	11.5%	136	74.3%	158	42.1%
Yes	162	84.4%	46	25.1%	208	55.5%
Total	183	100.0%	192	100.0%	375	100.0%

Source: Survey on the influence of PBF on maternal health in South Kivu, February 2022
About 82.5% of pregnant women are comfortable during ANC in Katana health zone compared to Kalehe health zone where only 27.6% of women are comfortable during ANC. course of the ANC. So there is a difference of 54.9%.

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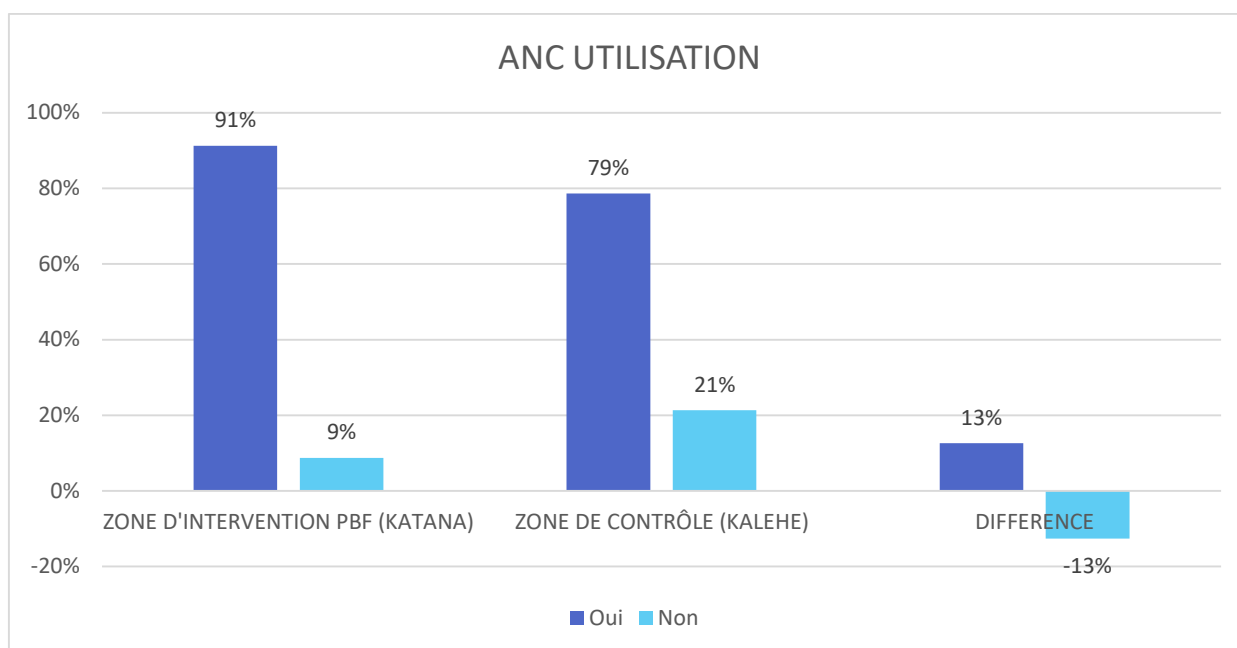
Chart 1.

Source: Survey on the influence of PBF on maternal health in South Kivu, February 2022

About 9 out of 10 women use maternal health services in the PBF intervention health zone, Katana health zone, while nearly 8 out of 10 women use maternal health services in the control health zone, Kalehe Health Zone. There is therefore a significant difference of 13%.

8.2 Impact of PBF on Maternal Health Service Attendance

Table 3. Comparison of service indicator means

Indicators	ZS WITH FBP INTERVENTION (Katana)		Z COMMAND (Kalehe)		Impact (%)	p-value
	Freq.	**%**	**Freq.**	**%**		
PERIODICITY						
First prenatal consultation (CPN 1) in the 1st trimester, before the 12th week of amenorrhea (SA) until at the latest at the 14th SA, or as soon as the woman thinks she is pregnant;	15	100%	15	100%	0%	***
CPN 2, between 24 and 28 SA	15	100%	15	100%	0%	***
CPN 3, at the 32nd SA	15	100%	15	100%	0%	***
CPN 4, at the 36th SA	15	100%	15	100%	0%	***
PRESENCE						
1. Participation of pregnant women in health and nutrition education sessions	15	100%	14	93%	7%	0.3091**
2. Participation of pregnant women in provider-initiated testing and counseling (PITC): all pregnant women should know their HIV status	14	93%	14	93%	0%	***

Indicators	ZS WITH FBP INTERVENTION (Katana)		Z COMMAND (Kalehe)		Impact (%)	p-value
	Freq.	**%**	**Freq.**	**%**		
3. Antiretroviral (ARV) prophylaxis and treatment and co-trimoxazole prophylaxis for pregnant women living with HIV	14	93%	13	87%	7%	0.5428**
o VAT 1: from the first contact ANC	15	100%	14	93%	7%	0.3091**
o VAT 2: 1 month after VAT 1	15	100%	15	100%	0%	***
o VAT 3: 6 months after VAT 2 (or at the next pregnancy)	15	100%	14	93%	7%	0.3091**
o VAT 4: 1 year after VAT 3 (or at the next pregnancy)	15	100%	15	100%	0%	***
o VAT 5: 1 year after VAT 4 (or at the next pregnancy)	15	100%	15	100%	0%	***
o SP 1: from the 16th week, i.e. from the perception of fetal movements	15	100%	14	93%	7%	0.3091**
o SP 2: between the 24th and 28th week of pregnancy	15	100%	14	93%	7%	0.3091**
o SP 3: at the 32nd week of pregnancy, only for HIV-positive pregnant women who are not on cotrimoxazole	15	100%	14	93%	7%	0.3091**
7. Promotion of the use of long-lasting insecticide-treated mosquito nets (LLINs)	15	100%	ten	67%	33%	0.0143*
8. Micronutrient supplementation: iron-folate (60 mg of iron + 400 mcg of folate), per os, 1 tablet/day, from the first visit to the CPN until 3 months after delivery	15	100%	14	93%	7%	0.3091**
10. Presumptive treatment of ankylostomiasis: a course of mebendazole at least once during pregnancy from the 16th week, per os, at the rate of 2 × 1 cc 100 mg/day/3 days, i.e. 1 cc 500 mg in a single dose, from the second trimester of pregnancy (not before the 16th week), then a second dose 6 months later	15	100%	13	87%	13%	0.1432**
11. Screening and treatment of syphilis	13	87%	7	47%	40%	0.0201*
12. Diagnosis and treatment of sexually transmitted infections (STIs)	15	100%	11	73%	27%	0.0317*
13. Screening and treatment of pregnancy-related illnesses	15	100%	13	87%	13%	0.1432**
14. Screening for diseases that influence the course of pregnancy	15	100%	14	93%	7%	0.3091**
15. Detection of danger signs	15	100%	13	87%	13%	0.1432**
16. Rapid referral of cases of pregnancies with complications	15	100%	13	87%	13%	0.1432**

Source: Survey on the influence of PBF on maternal health in South Kivu, February 2022

*the test is statistically significant, i.e. there is a significant impact due to PBF

**the test is not significant i.e. the impact due to PBF is not significant

***there is no difference between the intervention area and the control area, the impact due to the PBF is nil

Let us test the hypotheses H0: there is a significant difference between the indicators of the PBF intervention zone and those of the control zone against H1: there is a significant difference between the indicators of the PBF intervention

zone and those of the control area. The results of the comparison of proportions test show that almost all indicators of the use of maternal health services have p-values above the level of significance equal to 0.05; we accept the H0 that there is no significant impact of PBF on these indicators Here we see the impact of PBF on only a few indicators.

Table 4. ANC USE regression model

Global significance test of the model.

Logistic regression	Values
Number of observations	372
LR chi2(12)	34.13
Prob > chi2	0.0006
Log-likelihood	-142.24715
Nickname R2	0.1071
Dependent variable	OLD USE

Significance test of model coefficients

Explanatory variables	Coefficient.	Standard. Be mistaken.	z	P>|z|	[95% Conf. Vary]
Existence of PBF in the health zone	0.909305	0.4087734	2.22	0.026*	0.1081239 1.710486
Age of the pregnant woman	0.0055875	0.0345798	-0.16	0.872	-0.0733625 0.0621876
Woman's occupation	0.486715	0.3071967	1.58	0.113	-0.1153796 1.08881
Woman's level of education	0.0025212	0.2349483	0.01	0.991	-0.457969 0.4630114
Wife's Residence	-0.1654686	0.2404324	-0.69	0.491	-0.6367075 0.3057702
pregnant woman religion	-0.1354744	0.1785192	-0.76	0.448	-0.4853655 0.2144168
Woman's marital status	0.3468826	0.8436017	0.41	0.681	-1.306546 2.000312
Matrimonial regime	-0.7212273	0.3381781	-2.13	0.033*	-1.384044 -.0584104
Occupation of spouse	-0.0235651	0.1461449	-0.16	0.872	-0.3100039 .2628737
Spouse's level of education	0.3443927	0.2424518	1.42	0.155	-0.1308041 0.8195896
pregnant woman religion	-0.1697277	0.1386045	-1.22	0.221	-0.4413876 0.1019321
Path to get to the place of the CPN	0.0474602	0.3607714	0.13	0.895	-0.6596388 0.7545592
Constant	1.047379	2.178249	0.48	0.631	-3.22191 5.316669

Source: Survey on the influence of PBF on maternal health in South Kivu, February 2022

Equation: Logit (use of ANC = 1/0) = 0.909305 PBF + 0.0055875 Age + 0.486715 Occupation Woman + 0.0025212 Level of study - 0.1654686 Residence - 0.1354744 Relief + 0.7212273 Matrimonial Regime -0.02356512 Joint Occupation4 D3 + 9072 Level4 education spouse - 0.1697277 Religion of the woman + 0.0474602 Means to access the CPN + 1.047379

This logistic regression model studies the causal link between the use of maternal health services and the different explanatory variables constructed according to Anderson's behavioral theory. The model is globally significant with a value of p equal to 0.006 below the significance level and a coefficient of determination of 10.71%, that is to say that the variables of the model explain the dependent variable ANC USE at 10, 71%. . The individual test of the significance of the coefficients shows that the coefficients of the Existence of PBF and Marital status variables are significantly different from zero with p-values less than 0.05 (the only significance) 0.026 and 0.033 respectively. We find that only the PBF and marital regime intervention variables significantly explain the use. This implies that the use of maternal health services is a function of the PBF intervention explicitly, but intrinsically through the health system indicators improved by the existence of PBF. We also note that the socio-demographic variables have no influence on the use of services except for the matrimonial regime.

8.3 SATISFACTION OF PREGNANT WOMEN

Table 5. Satisfaction of pregnant women

variables	ZS Katana		ZS Kalehe		TOTAL	
	Effective	% of ZS	Effective	% of ZS	Effective	% of total
House						
Not satisfying	121	63.0%	7	3.8%	128	34.1%
Satisfactory	71	37.0%	100	54.6%	171	45.6%
Very satisfaying	0	0.0%	76	41.5%	76	20.3%
Waiting time						
< 2H Not long	37	19.3%	156	85.2%	193	51.5%
Duration 2 to 3 hours	107	55.7%	25	13.7%	132	35.2%
3 to 4HToo long	48	25.0%	2	1.1%	50	13.3%
Satisfaction with observational care						
I am not satisfied at all	4	2.2%	48	25.0%	52	13.9%
I'm not very satisfied	3	1.6%	94	49.0%	97	25.9%
I'm quite satisfied	94	51.4%	50	26.0%	144	38.4%
I am very satisfied)	82	44.8%	0	0.0%	82	21.9%
Satisfaction with care received						
I am not satisfied at all	7	3.8%	27	14.1%	34	9.1%
I'm not very satisfied	6	3.3%	111	57.8%	117	31.2%
I'm quite satisfied	88	48.1%	54	28.1%	142	37.9%
I am very satisfied)	82	44.8%	0	0.0%	82	21.9%
Attitude of health personnel						
Refusal to answer	2	1.1%	1	0.5%	3	0.8%
they encouraged me and were very understanding	171	93.4%	47	24.5%	218	58.1%
they didn't shout 'at me' but they didn't encourage me	3	1.6%	69	35.9%	72	19.2%
they yelled "over me" before delivery and during delivery	7	3.8%	31	16.1%	38	10.1%
they yelled "over me" during childbirth	0	0.0%	44	22.9%	44	11.7%
Received postpartum counseling						
no	6	3.3%	58	30.2%	64	17.1%
yes, I received advice when I left the maternity ward	168	91.8%	38	19.8%	206	54.9%
yes, I received counseling immediately after giving birth	9	4.9%	96	50.0%	105	28.0%
Total	192	100.0%	183	100.0%	375	100.0%

Source: Survey on the influence of PBF on maternal health in South Kivu, February 2022

Concerning the reception: 6 out of 10 women in the Katana health zone are not satisfied (not and not at all satisfied) compared to Kalehe, i.e. almost all the women (about 95%) are satisfied.

In relation to waiting time: More than 80% of women wait more than 2 hours during prenatal consultations in the Katana health zone, on the contrary in the Kalehe health zone where 85% of women wait less than twice.

Regarding the care observed: 51% of women are satisfied in the Katana health zone while about 49% are not satisfied.

Regarding the care received: in total 93% of women are satisfied (rather and very satisfied) with the care received in the Katana health zone, unlike the Kalehe health zone where in total 73% of women are not satisfied (not and not at all satisfied)

Concerning the attitude of the staff: we observe that 93% of the women say they were encouraged by the health staff who were very understanding, compared to 24.5% of the women in the Kalehe health zone.

Compared to advice received after childbirth: 95% of women received advice after childbirth in Katana health zone compared to 70% of women in Kalehe health zone.

9. DISCUSSION OF RESULTS:

Reviewing the literature, although progress has been made in the evaluations of performance-based financing in some countries, serious gaps remain, especially with regard to scientific and rigorous conclusions, especially in the field of health. maternal, as Witter et al. (2012) in their article published in a Cochrane review in 2012, shows that the combined evidence on performance-based funding is inconclusive. However, the evidence on which this claim is based was drawn from evaluations of performance-based financing programs that had very different design and implementation characteristics. Indeed, Witter et al. (2012) applied a rigorous evaluation framework to divergent studies, ranging from

Moreover, in these studies, the evaluation methodology used and the performance-based financing studied varied considerably from country to country and from one health service to another.

The literature review by Witter et al (2012) concluded perhaps a little too categorically that there was a lack of rigorous evidence on performance-based financing implemented in a few regions. However, the report correctly pointed out that further research is needed.

More importantly, he pointed out that the influence of performance-based financing depends on its design and implementation. Although there is indeed a paucity of good quality research evidence, two well-designed randomized controlled trials of performance-based financing programs have recently yielded conflicting results.

While the first evaluation of a well-designed performance-based financing intervention in South Kivu found significant results, the other evaluation of the Financing-Based Initiative lacked a factual conclusion.

Therefore, this literature review shows that the results of studies conducted in Africa on the effectiveness of performance-based financing and the quality of maternal health care, including syntheses and reviews of the evidence, are generally mixed (Das et al., 2016; Paul et al., 2018; Renmans et al., 2016; Witter et al., 2012) and uncertain (Wiysonge et al., 2017), so that no general conclusion can currently be drawn as to their effectiveness (Witter et al., 2012) . This has led some authors and policymakers to question the relevance of performance-based financing in low-income countries (Paul et al. 2018).

By analyzing the results of this study, and establishing a comparison on the basis of established indicators, we can therefore say that performance-based financing has had a real improvement on maternal health indicators in the intervention area of Katana vs Kalehe health check area. South Kivu region.

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