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Correlations Between Education Level and Obstetrical Complications

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Abstract

Introduction: According to the WHO, 1500 women die ona daily basis with complications related to pregnancy and or preterm labor. This situation of vulnerability affects mostly developing countries like Madagascar. To determine the cause of such complications with several factors, it takes multi-scopes analyses in order to tackle the root of the problem.

Aim: The aim of this study was to establish any correlation between the education level and obstetrical complications.

Methods: A descriptive and analytical study was conducted at the mother and child compound of the University Hospital of PZaGa Androva Mahajanga, for twelve months, start on January 1st 2017 to 31 December 31st 2017.The level of education (uneducated, primary, secondary, High school, University),ethnicity, gynaeco obstetrical antecedents, pregnancy follow-up, and obstetrical complications were considered. Variables factors were treated with Microsoft Excel 2013 and R software. A Chi square Pearson test was performed, with a threshold value above 0,1

Results: All along this study,263 cases of women with complications were noticed with06 deaths. The main complications found were : risk of preterm labor on 92 women (34.98%) ; hemorrhage complications on 77 women (29.27%) ;hypertensive disorder found on 75 women (28.51%) ; infectious disease and others on 19 women (7.24%) One hundred and sixty four patients (62.33%)had a level of education below T9. The Chi-square tests between the level of education (below or above ou T9) and primary obstetrical complications (Hemorrage and risk of preterm labor in one hand; infections and related in the other hand) were significant with a value of 6,63 5 (Chi-square test limit: 0,14)

Conclusion: The level of education could play a role in occurrence of obstetrical complications in our study.

Keywords: Complications, Hemorrhage, Infection, Risks of preterm labor, Level of education

Discussion

Frequencies

In this study, 263 cases of women with complications were recorded. This gives a frequency of 12,22%: 97,72% of which were successfully recovered and 2,28% died. A similar study was conducted in Antananarivo at the University Hospital Centre of Gynecology and Obstetrics of Befelatanana in 2015 by Randriatsarafara they found 442 cases that is 16,80% of patients who presented major obstetric complications [4]. These complications are common and become daily occurrences at reference Hospital centres as it is the cases of the two centers under the study.

Level of education

More than half of patients, that is 62.3% of cases had an educational level below Grade 9. Most of similar studies did not have regular results: the one that was performed in Antananarivo in 2015 showed 13,64% of patients with university education, 39,1% with secondary one, 34,54% with primary education, and 12,72% uneducated [4]. In 2015, Oliveira and al. reported 43,2% of women in Brazil with secondary education [5]. In Cameroun, Diakité and al. revealed 67,62% of patients being uneducated in 2012 [6]. Widely above the significance, the proportion of illiterates as reported by Zouini and al. rised to 94% in 2014 [7]. These surveys were conducted in countries with low and medium income. Custom and beliefs prevent young women from attending schools and to go far in their education.

Statistical analysis

The test of relevancy was significant with a chi-square value of 6.634. Therefore, it can be asserted that there is a relationship

between the level of education of women and occurrence of obstetric complications. It is not surprising to notice in developing countries, where the rate of school admission of women is low, that obstetric complications leading to maternal mortality remain high. As being observed, obstetric complications were more common among developing countries than in the developed ones. Obviously, life standards, the quality of medical care's make the difference and many other environmental factors might as well influence the phenomenon. In developing countries like Madagascar, parents alone could not take charge of the household sustenance, children must contribute to the family earnings. Girls are forced to marry young and should leave their family. And it occurs from one family to another, the level of education of women will be consequently low. Moreover, in view of the situation of unemployment in the country, freshly graduates fail to find job or at the limit, take unsuitable one that did not match with their education. Numbers of parents cannot afford to send their children to school (Figure 1).

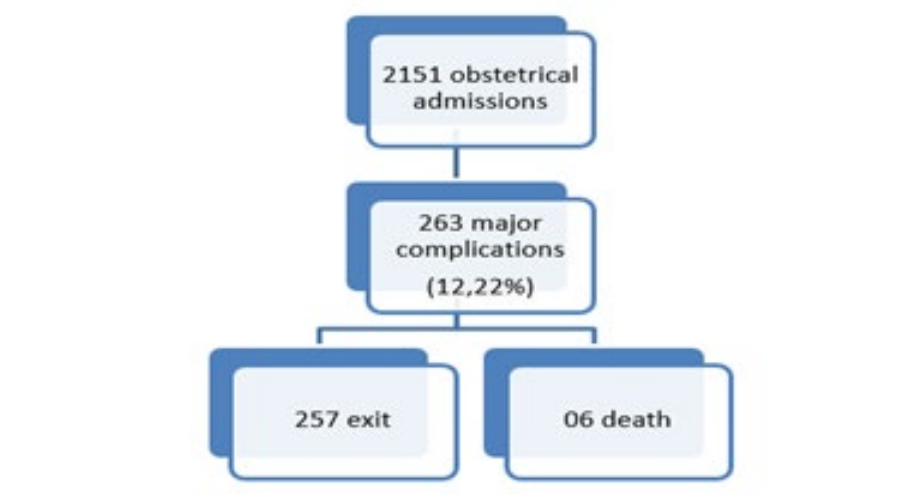

Figure 1: Frequency of Obstetrical Complications.

Women with low educational level would live and behave according to traditions and custom. They would take heed to soothsayers and birth attendant advices during pregnancies and labors. Therefore, decision making to attend specialized reference unit would be delayed. In Mahajanga as it is also the case for all Madagascar, habit and beliefs play a huge role in daily life of population. When a woman carries pregnancy, it is the least of her priority to attend prenatal cares though these operations are crucial in term of education and information to improve obstetric prognosis. This educational level could be evolved into probable etiology and cause of obstetric troubles. It is worth noting that a poor intellectual background is almost associated with low social and economic life standard. Thus, any measure considered to reduce the rate of maternal death, obstetric complications, could not be achieved without lateral approach which aims to raise the intellectual level of the population. Indeed, an educated woman or a person with a high intellectual standard would be more attentive to information and recommendations and become more prone to follow advice given by the service provider.

Obstetric Indicators

Parity

This study revealed that, 108 parturient women were nulliparous (41,1%), closely followed by 63 primipara equal to 24%. These results differ from those of Moussa in Bamako in 2010: 76% of primipara, and that of Randriatsarafara in Antananarivo in 2015 with 35% of primipara [4,8]. It is a possibility that more nulliparous women frequently attended health center than multiparous ones. Once having delivered in ectopic pregnancies, these women with low education level, would consider next deliveries to be the same; They did not see how important is to attend health center.

Number of PNC

A quality PNC aims to diagnose high risk pregnancies. It allows to detect and to deal with risk bound pathologies, and thus enables to reduce maternal morbidity. In this study, over the half of the parturient have performed at least 4 PNC that is 63,88%. The number of prenatal consultations did not influence the reduction of the maternal morbidity rate. As a matter of routine, with lack of motivation, and failing equipment's, PNC is carried out in a haste. Many information and examinations were neglected and fail to meet standards. A study led by Salif in Mali in 2010 has evidenced a lower outcome with 30% [9]. Such rate would result from the ignorance of health services that women should have benefited during pregnancy. Prenatal consultations, particularly that of PNC4 was considered to be the most effective way to detect obstetric complications and will enable health workers to timely refer to patients when risks factors arise Table 1.

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Table 1: Epidemio Clinic Characteristic of Patients.

		Total (n)	Total (%)
Level of study	Unschooled	23	8,75%
	Elementary	42	15,97%
	Middle school	99	37,64%
	High school	70	26,62%
	University	29	11,03%
Gravida	G1	78	29,66%
	G2_G3	114	43,35%
	≥ G4	71	27,00%
Parity	P0	108	41,10%
	P1	63	24,00%
	P2-P3	69	26,20%
	≥ P4	23	8,70%
Prenatal consultations	0	10	3,80%
	< 3	85	32,30%
	≥ 4	168	63,90%
	<28 WA	30	11,41%
	28-32 WA	142	53,99%
	32-37 WA	50	19,01%
	37-41 WA	40	15,21%
	> 41 WA	1	0,38%
	None	235	89,35%
	High blood pressure	19	7,22%
	Epilepsy	2	0,76%
	Sickle cells disease	3	1,14%
	Cardiopathy	1	0,38%
	Others	3	1,14%
Etiologies	Preterm labour	92	34,98%
	Hemorrhage	77	29,27%
	High blood pressure disorder	75	28,51%
	Infection et others	19	7,24%
	Total	263	100,00%

WA: Weeks of amenorrhoea

Age of pregnancy

The study has revealed pregnancies aged between 28 and 32 WA overwhelming at 54% and another batch at 32WA with an end term of 34,2%. Pregnancies of the second quarter represent 11,4% while one woman overpasted the end term. This rate can be explained by the fact that preterm birth was caused by pathologies and considered as one of comorbidities commonly found particularly in Mahajanga and overall in Madagascar. Similar proportion was found by Koumare and al. in Mali in 2005 with 34,7% [10], but as for Shrestha in Rwanda in 2015 it was 79,1% [11].

Based on etiologies

Among common etiologies evoked by the study was the threat of preterm labors representing 34,98%, to which 65,22% had a level of education below Grade 9. Some pathologies were also frequenting. Bleeding and high blood pressure complications respectively 29,27% to which 57,14% with an educational level below Grade 9, and 28,51% to which 66,66% with an educational level below Grade 9. Threat of preterm labors was the major etiology, closely followed by hemorrhages and high blood pressure complications. A study conducted by Randriatsarafara in Antananarivo showed that hemorrhages represented 30% of case that was close to this result and for hypertensive complications a slightly superior as of 37,27% [4]. In 2015, Soma-Pillayand al. in South Africa showed an identical proportion of 32,5% for hemorrhage and 31% for pregnancy-induced hypertension [12]. Nonetheless, the frequencies of haemorrages and hypertension complications change from one study to another Table 2:

Table 2: Level of Study and Obstetrical Complications.

	Level of Study	Hemorrhage and Peterm Labour	Infectious Disease and Others	Total
Observed distribution	≤ T9	104	60	164
	High school and university	65	34	99
	Total	169	94	263
Theoric distribution	≤ T9	105,38	58,62	164
	High school and university	63,62	35,38	99
	Total	169	94	263
Khi Calculation	≤ T9	0,02	0,03	0,05
	High school and university	0,03	0,05	0,08
	Total	0,05	0,08	0,13

Statement of the decision rule

Chi-square criticism: 0,135102976

Reject H0 if the calculated chi-square is greater than: 0.135102976

The calculated Khi 2 is: 6,634896601

a. 30,23% and 44,18%, for Shresta in 2015 (Rwanda) [11]

b. 34,4% and 51,6% for Almerie in 2010 (Damascus) [13]

c. 51% and 8,5% for Mustafa and Hashmi in 2009 (Pakistan) [14]

This observation is quite normal since it reflects a general aspect of obstetric complications overwhelmed by hypertension complications.

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Decision and conclusion

Since 6.63 is significantly greater than 0.13, H0 is taken at the 1% threshold and there is a significant relationship between the level of education and obstetric complications.

Conclusion

Despite of the low frequency of the obstetric complications and the availability of cares during pregnancy in developing countries like Madagascar, these complications always remain significant and worth to be considered as public health issue. This study showed a high prevalence of major obstetric complications. Most of these women were aged under 30 and over the half of them had an education level below the ninth Grade. These two variables seem to affect the occurrence of complications during pregnancy as demonstrated in this study.

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