



Original Article

Efficient maternal referral: Impact of maternity care providers conditions.Mekni Karima ^{1,2*}, Aridhi Amal³.

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Abstract**Background**

High maternal referral rate from peripheral maternity units is related to the unfavourable working conditions in these inconvenient and extremely busy labor wards. Through our study, we examined the correlation of midwives working conditions on the maternal referral rate and its impact on the obstetric and fetal prognosis .

Methods

This was a four-months descriptive cross-sectional study using direct eight-parts questionnaire among thirty-seven midwives working in the different maternity hospitals in Jendouba, Tunisia. The study assessed midwives working conditions and analysed the correlation with the referral rate.

Results

The (30-40) age group was the most represented in the study sample. Midwives had more than ten years of experience in 38% of cases (n=14/37). They lived far from workplace (> 5 kilometres) in 62% of cases (n=23/37). Ain drahem's maternity ward had the highest referral rate (59%). A negative relationship was found between the average score of midwives' working conditions and the maternal referral rate (p=0.03). Tabarka Hospital (score=5.4) had the lowest maternal referral rate (12.72%).

Conclusions

Significant correlation was noted between the score of midwives working conditions and high maternal referral rate.

Key words

Midwife; rural maternity; referral; risk ; prognosis.

Introduction

Since its independence, maternal and neonatal health (MNH) has been one of Tunisia's public health priorities. Several strategies and programs have been developed. Implementation of maternity units and regional hospitals allowed the improvement of maternal and child health indicators. However, interregional disparities still exist. In some regions, establishment of peripheral maternity units did not improve the quality of services with an objective trend to abusive referral [1,2]. This study was conducted among midwives working in several maternity hospitals of Jendouba, Tunisia. The aim was to establish a score-based assessment of the work conditions and to analyse its interference with the decision making.

Materials and methods

This was a four-months qualitative descriptive study based on a questionnaire survey of midwives practicing in maternity units of the governorate of Jendouba, Tunisia. Questionnaires were directly delivered to the included health practitioners after two random tests of readability and comprehensibility. Data collected from the survey performed in eight maternity units, referral logbook, and the delivery registers of the regional maternity hospital. To rule out correlation between midwives work conditions and maternal referral rates, a "practice conditions" score was developed and calculated for each midwife (ten items scored 1-0). For the referrals, the data included: age of the parturient, the reason for transfer and the feedback from referral hospital. Data was analysed using IBM®SPSS®26.0. Effectiveness of the elaborated score was tested using the ROC curve method. The study was approved by the ethics committee.

Results

Midwives were aged 30 to 40 years old in 38% of cases, from Jendouba governorate in 86% of the cases and were married in 89% of cases (n=34/37). Thirty seven percent of the included midwives had more than ten years of experience. The workplace was located more than 5 kilometres far in 62% of cases with no personal transport in 89% of cases. Midwives were not satisfied with their assignment in 67% of cases (n=25/37). They were not satisfied with the salary in 94% of cases (n=35/37). No internal promotion was noted in 81% of cases (n=30/37). For usual obstetrics cases, all midwives are assigned to perform deliveries, episiotomy and the first care of the normal newborn in the delivery room. Experience with perineal tears repair was noted in 64% of cases (n=24/37). Midwives performed imminent and breech deliveries while on call in 37% of cases. Forceps or vacuum extraction were never applied. Midwives have little or no supervision. No continuous nursing education and workshops participation were noted for more than 80% of cases. Only 11% of midwives were up to date with the latest practice guidelines. The work environment was considered satisfactory in only 25% of cases. They were able to plan their vacations without problems in only 51% of cases (n=19/37). For job stability, the assignment was fixed in only 10 cases, so that midwives could work in the same year in different establishments of the region: either in the peripheral maternity hospital, in the mobile team, or in the maternal and child protection centre. The composition of the team was a source of dissatisfaction for 75% of midwives (28/37). The lack of regular obstetrics and gynaecology doctor was noted in 46% of the questioned staff (Table 1).

Table 1: Maternity units team composition

Maternity unit	Jendouba	Tabarka	Gardimao	Fernana	Aindrahem	Boussalem
Midwives	13	5	5	5	4	4
Staff nurses	24	9	7	7	8	7
On call midwife	2	1	1	1	1	1
On call nurse	3	2	1	1	1	1
GP	-	1	1	1	1	1
specialist doctor	4	1	-	-	-	-

Lack in admission and monitoring basic equipment was reported by 54% of the interviewed midwives (20/37). The number of delivery tables was insufficient in 27% of cases (10/37). Availability of consumable materials ranged from 28 to 78%. For the newborn care, 94% of midwives stated having the necessary equipment (35/37). The highest number of admissions was registered in the Ghardimao maternity unit (508) followed by the Fernana unit (410). Maternal referral rate in these units was 52.7% and 48.54% respectively. Aindrahem unit had the highest referral rate (59%; 159 admissions). (Table 2). In the unit of Jendouba, a triage is done and if needed, the patients are referred to the capital. According to our survey, 65% of the midwives (24/37) have preestablished systematic referral checklist. Eight midwives did not find it applicable in all conditions. Reasons for referral were variable. Fetal distress was found in 16% of cases, preterm premature rupture of membranes (PPROM) in 15% of cases, and a scarred uterus in 10% of cases. Referred parturients were in the first stage of labor in 50% of cases. 5% of them had reached the third stage and 1% had given birth in the ambulance.

Table 2: Maternity units Workload.

Maternity	Admissions	Deliveries	Referral Jendouba	Referral Tunis	%
Jendouba	3021	2725	0	296	9.8%
Tabarka	330	288	21	21	12.72%
Fernana	410	211	188	11	48.54%
Aindrahem	195	80	84	31	59%
Boussalem	337	198	125	4	41.24%
Ghardimao	508	240	139	129	52.75%

Distance to the referral hospital was superior to 20 kilometres in 78% of cases. The ambulance was well equipped for possible imminent delivery in 81% of cases. However, it was not adapted for maternal and neonatal resuscitation in 94% of cases. The parturient was accompanied by a nurse or midwife in all cases. Administrative referral difficulties were noted in more than 50% of cases. Based on the information collected from surveyed midwives, a score of practice conditions has been elaborated and calculated for each maternity unit. The score value was variable. Mean individual score was 113.6. Mean score per unit ranged between 2.5 and 5.4. Only one maternity unit out of 6 has reached the average (Tabarka unit). (Table 3).

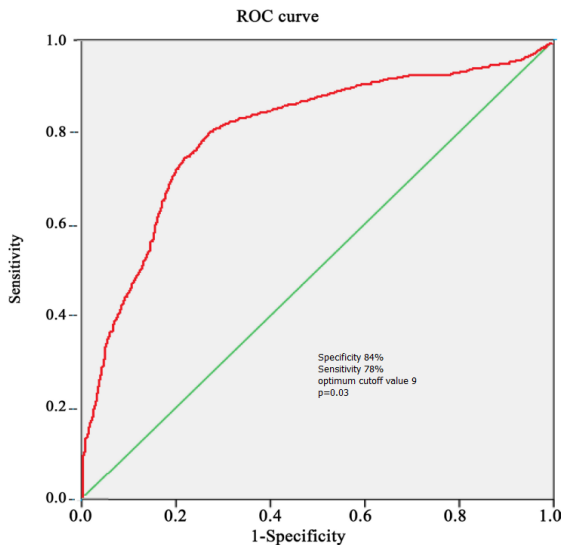
Table 3: Maternity units practice conditions score.

Maternity	Practice conditions mean score	referral rate
aindrahem	2.5	43%
Boussalem	3.8	37%
Fernana	3	46%
Ghardimao	2.4	27%
Jendouba	4.58	10%
Tabarka	5.4	6%

Table 4: Practice conditions score.

Criteria	Score calculation
Experience	<5years=0 ; >5years=1
Distance to Workplace	>5 km=0 ; <5km=1
Supplies	Insufficient=0 ; Sufficient=1
Available physician	No=0 ; yes=1
Satisfactory assignment	No=0 ; yes=1
Satisfactory salary	No=0 ; yes=1
Satisfactory work atmosphere	No=0 ; yes=1
Need for workplace change	No=0 ; yes=1
Experience with neonatal death	No=0 ; yes=1
Adherence to perinatal national programs	No=0;yes=1

The analysis showed an objective influence of personal and work-related factors on the maternal referral decision(p=0.03).



Discussion

The quality of services delivered in rural maternity units by affiliated healthcare practitioners has been rarely studied in literature. Our study conducted in six north-western Tunisian units highlighted several difficulties. Results allowed the analysis of working conditions on the midwives decision making. Familial commitment, far work location and absence of assigned transportation were the most previously cited professional barriers [3,4]. Designated midwives for rural units are usually fresh graduated or short experienced. In our study, more than third of studied midwives have less than 5 years of experience. This rate was 65% in the governorate of kef and 64.3% in Ugandan study [5]. Unsatisfaction about work conditions and allowances noticed in our study are cited in a Canadian which identified insufficient remuneration as the main cause of resignation of providers in peripheral units [6]. The difficult access to the continuing nursing education and career improvement was the other main reason according to some other studies [7-9]. Placement in rural maternity units during the training of students is not mandatory could create some skill discordance between midwives of the same rural unit team [10]. A Scottish study confirmed that working in the peripheral units decreases professional development [11]. These conditions can clearly explain the high rate of maternal referral observed in rural maternity clinical practice. Concordant studies results showed that personal dissatisfaction, the impossibility of skills development and the absence of adequate technical platform make the healthcare decision trend to the referral for any reason [12-15]. In our study we tried to transform several

subjective factors that really interfere with the midwives decision making in a measurable entity via the practice conditions score. The results confirmed its correlation with the referral statistics. The score could be used to assess healthcare practitioners personal and work-related conditions to identify national public health priorities.

Conclusions

Implementation of peripheral rural maternity units with the aim of relieving obstetric departments in central hospital is curving to fail. Challenging work conditions and the lack of adaptation of the affiliated staff is objectively interfering with the decision making and contributing to unjustified high maternal referral rate.

Conflicts of interest: none

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