The effect of the Maternal Care Manual of the Perinatal Education Programme on the Attitude of Midwives towards their work

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"Midwives who studied the Maternal Care Manual of PEP experienced a significantly improved attitude towards their work. The improved cognitive knowledge and ability to apply knowledge was also personally experienced, resulting in an increase in self confidence and job satisfaction."

ABSTRACT

Objective

In this study the changes in attitude of midwives towards their work following completion of the Maternal Care Manual of the Perinatal Education Programme (PEP), were determined.

Method

A prospective, controlled trial was performed in a study, and two control towns in a region where PEP had not previously been used. All midwives caring for pregnant women in the three towns were included in the study. First the attitude of these midwives was determined by means of a questionnaire. Subsequent to this, the Maternal Care Manual was introduced and studied by the midwives in the study town. Following the completion of the Manual after 12 months, the attitude of all midwives was again evaluated using the same questionnaire.

Results

A total of 40 midwives in the study town and 53 in the two control towns were included in the study. There were no differences on comparing the ages of the midwives in the study town to those in the control towns. The attitude of the midwives in the study town improved significantly ($p<0,001$). The mean result in the study town improved by 6,1 (24,4%) marks from 14,5 (58,0%) to 20,6 (82,4%). A significant shift also occurred in the range of the marks from 0-25 to 13-25. No changes were observed in the control towns.

Conclusion

Most studies that have evaluated educational programmes measured improvement in health services, and did not evaluate changes in attitude. This study found that the attitude of midwives improved significantly in the study town. This positive attitude of midwives towards their work and their ability to perform their daily tasks must be an important component of any programme to improve the quality of care rendered to women during pregnancy, labour and the puerperium.

OPSOMMING

Doelwit

Die studie het verandering in houding teenoor hul werk van vroedvroue wat die Verloskunde Handleiding van die Perinatale Self-Onderrig Program (SORG) bestudeer het, bepaal.

Metode

'n Propektief gekontroleerde studie is in 'n studie dorp en twee

Research Article

kontrole dorpe uitgevoer, in 'n streek waar SORG nog nie vantevore bekend was nie. Al die vroedvroue betrokke by die versorging van vroue tydens swangerskap en kraam in die drie dorpe is by die studie ingesluit. Die houding van die vroedvroue is vooraf met 'n vraelys bepaal. Vervolgens is die Verloskunde Handleiding in die studie dorp aan die vroedvroue bekendgestel en deur hulle bestudeer. Na voltooiing van die Handleiding 12 maande later is die houding van die vroedvroue weer met dieselfde vraelys bepaal.

Resultate

'n Totaal van 40 vroedvroue in die studie dorp en 53 in die kontrole dorpe is by die studie ingesluit. 'n Vergelyking van die ouderdomme van die vroedvroue op die die studie dorp met die op die kontrole dorpe het geen verskille getoon nie. 'n Betekenisvolle verbetering ($p<0,001$) in die houding van vroedvroue teenoor hul werk is in die studie dorp waargeneem. Die gemiddelde punt in die studie dorp het met 6,1 (24,4%) verbeter van 14,5 (58,0%) na 20,6 (82,4%). 'n Betekenisvolle verskuiwing in die reikwydte van die punte van 0-25 na 13-25 het ook plaasgevind. Geen verandering is in die kontrole dorpe waargeneem.

Gevolgtrekking

Meeste studies wat opvoedkundige programme gemik op die verbetering van dienste evalueer het, sluit nie die evaluering van houding in nie. Die studie het gevind dat die houding van vroedvroue teenoor hul werk in die studie dorp betekenisvol verbeter het. Die positiewe houding van vroedvroue teenoor hul werk en hul vermoë om hul daaglikse take te verrig, moet 'n belangrike komponent wees van enige program gemik op die verbetering van die kwaliteit van sorg aan vroue gedurende swangerskap, kraam en die puerperium.

Introduction

The philosophy of the Maternal Care Manual of the Perinatal Education Programme (PEP) is to enable midwives to provide effective primary obstetric care. A problem solving approach is followed and the emergency management of common obstetric complications is described step-by-step. The necessary information is provided to apply knowledge directly into clinical practice.

Previous studies have shown that midwives improved their cognitive knowledge and ability to interpret antenatal cards and partograms by studying the Maternal Care Manual of PEP (Woods and Theron 1995;85, Theron June 1998). The question as to whether changes in attitude towards work also occur is therefore relevant. This question had already been posed following the completion of the first study, which had provided proof that midwives who studied PEP improved their cognitive knowledge (Woods and Theron 1995;85).

In this study the changes in attitude of midwives following completion of the Maternal Care Manual of PEP, were determined.

Method

A prospective, controlled trial was performed in the Eastern Cape Province, a region where PEP had not previously been used. Three towns were chosen, one as the study town and the other two as control towns. All midwives caring for pregnant women in the three towns were included in the study. First, the attitude of these midwives was determined by means of a questionnaire. Subsequent to this, the Maternal Care manual was introduced and studied by the midwives in the study town. The midwives were divided into small groups for this purpose. A member of each group acted as the co-ordinator for the group. The task of each co-ordinator was to distribute the manuals and to arrange and conduct discussions for the group following the completion of each unit in the manual. The groups met every three to four weeks. One of the midwives in the study town acted as the regional co-ordinator, to help local co-ordinators with problems encountered. Following the completion of the manual after 12 months, the attitude of all midwives was again evaluated using the same questionnaire.

The attitude of midwives towards their work was assessed using five questions. These questions had to be answered according to a Likert response format (Appendix A). The content of the questions covered the following aspects: training , knowledge, practical skills and self confidence. The last question related to the level of job satisfaction experienced at that time. The maximum mark possible (25) would indicate total satisfaction. The questionnaire formed part of an multiple choice question examination and questions regarding the identification and interpretation of antenatal cards and partograms.

The means of the total marks allocated to all five questions in the study town were compared before and after completion of the manual, and to those of the control towns. Changes that occurred in individual questions were similarly compared. In addition a stratified analysis was performed on the magnitude of these changes scored for individual questions in the study town, by comparing antenatal care midwives to those working in the labour ward. The shift in the marks allocated to individual midwives was also analysed with a method that distinguished between small random changes and more definite ones.

Consent for the study was obtained from the regional and local health authorities. The study protocol was approved by the Ethics Committee of the Faculty of Medicine, Stellenbosch University. The data was loaded on Epi Info 6, Version 6.02 of

Table 1 : Numbers and ages of participating midwives

	Study town	Control towns	Total
Midwives	40	53	93
- antenatal care	24	23	47
- labour wards	16	30	46

	Study town	Control towns	p-value#
Age (years)			
- mean (SD)	40.7(9.6)	38.6 (8.6)	0.27
- median	42	37	
- range	23-60	24-59	

# Student's t-test
SD = standard deviation

October 1994 and the statistical analysis was done using the same programme. Bartlett's test for homogeneity was used to determine whether the variance of two samples was homogeneous with 95% confidence. Homogeneous samples were compared using a two tailed Student's t-test and if the variances differed, medians were compared using the Kruskal-Wallis H test.

Table 3 : Marks obtained during pre- and post-training

Study town Total mark = 25	Pre-test	Post-rest	p-value#
- mean (SD)	14.5 (6.4)	20.6* (3.6)	0.000
- median	15.5	21.0	
- range	0.25	13-25	
Control towns Total mark = 25	**Pre-test**	**Post-rest**	**p-value#**
- mean (SD)	16.7 (4.5)	16.0 (4.0)	0.646
- median	17.0	16.0	
- range	6-25	4-22	

#Student's t-test
* Mean improvement in study town = 6.1 (24.4%)

Results

A total of 40 midwives in the study town and 53 in the two control towns were included into the study. The number of midwives rendering antenatal care and those working in the labour wards, as well as their age distributions are shown in Table 1. There were no differences in the mean and median ages or age distributions, when comparing the study to the control towns.

Experience of the midwives was assessed by comparing the number of working years in their towns and by the number of years in their posts at the time of the study (Table 2). The study and control towns were homogeneous with regard to the number of working years in the towns. There was however a tendency towards fewer years in their present posts (p=0,097) in the study town (5,3 vs. 7,3), when comparing the mean values. None of the midwives in the study town, and only one labour ward midwife in a control town, had undergone advanced midwifery training.

Table 2 : Previous experience of midwives

	Study town	Control towns	p-value#
Experience			
- years in town			
-mean (SD)	8.8 (7.3)	9.7 (7.7)	0.58
-median	8.0	8.5	
-range	1-30	1-28	
- years in present post			
-mean (SD)	5.3 (5.8)	7.3 (6.0)	0.097
-median	3.0	6.0	
-range	1-31	1-23	
- advanced midwifery training	0	1	

#Student's t-test
SD = standard deviation

In the study town, 31 midwives completed the manual and were prepared to participate in the post-test evaluation. The reasons given by the 9 (22,5%) midwives that did not complete the manual were: three resignations, two transfers, one retirement and three who cited loss of interest. In the control towns, 11 (20,8%) midwives were not available for post-testing. Reasons here included: illness, maternity leave, transfers and resignations.

Table 3 shows the means, medians and range of the marks allocated to the five questions regarding attitude during the pre- and post-testing in the study and control towns. A significant (p<0,001) improvement occurred in the study town. The mean result in the study improved by 6,1 (24,4%) marks, from 14,5% (58,0%) to 20,6 (82,4%). A significant shift occurred in the range of the marks from 0-25 to 13-25. No changes were observed in the control towns.

The pre-test marks did not differ (p=0,21) between the study and control towns (Table 3). However, the post-testing marks were significantly (p<0,001) higher in the study town. A significant (p=0,001) improvement occured for each individual question in the study town, whereas there were only slight changes in the control towns (Table 4). This analysis was only performed on midwives for whom paired values were available. The difference between pre- and post-test results for individual questions in the study town were larger for midwives working in the antenatal clinics than those working in the labour ward (Table 5). However, these differences were not statistically different, except for a tendency towards being significantly better in question 1. By accepting a >4 mark (>16%) improvement as a substantial shift, the majority of midwives in the study town improved, whereas most in the control town remained unchanged (Table 6).

Discussion

Few studies regarding the attitude of health workers towards their work and especially changes in attitude following intervention, are to be found in the medical literature. Attitudes of midwives towards midwife obstetric units have been tested and Turnbull and co-workers included a control group in their study (Turnbull and co-workers 1995;11). Renfrew reviewed the literature regarding shared care compared to care by midwives only in the Cochran data base (Renfrew August 1992).

In general studies that have evaluated educational programmes aimed at improving health services have not evaluate changes in attitude (Engel and co-workers 1992;26, Ndeki

Table 4 : The mean and median changes in marks allocated to individual questions with pre- and post-testing

Study town (Total = 5 questions)					
- question	1	2	3	4	5
- mean (SD)	1.27 (1.66)	1.19 (1.30)	1.00 (1.30)	1.04 (1.34)	0.96 (1.18)
- median	1.00	1.00	1.00	1.00	1.00
- p-value #	0.001	0.000	0.000	0.001	0.000
Control towns (Total = 5 questions)					
- question	1	2	3	4	5
- mean (SD)	0.08 (1.03)	0.00	-0.09 (1.07)	-0.25 (1.11)	-0.33 (1.07)
- median	0.00	0.00	0.00	0.00	0.00
- p-value #	0.63	-	0.64	0.18	0.07

Student's t-test

Table 5 : A satisfied analysis of the changes in marks allocated for individual questions by midwives working in antenatal clinics and those in the labour ward of the study town

Question	**1**	**2**	**3**	**4**	**5**
Antenatal clinics					
- mean (SD)	1.79 (1.85)	1.50 (1.56)	1.29	1.07 (1.59)	1.14 (1.46)
- median	1.50	1.50	1.00	1.00	1.00
Labour ward					
- mean (SD)	0.67 (1.23)	0.83 (0.84)	0.67	1.00 (1.04)	0.75 (0.75)
- median	1.00	1.00	0.50	1.00	1.00
- difference*	1.12	0.67	0.62	0.07	0.39
- p-value #	0.09	-	0.17	0.90	0.41
- p-value+	0.21	0.23	0.18	0.79	0.45

Student's t-test when the variances were homogeneous with 95% confidence
+ Kruskall-Wallis H
* Difference between means

Table 6 : The shift in marks of individual midwives for whom paired observations were available

Study town Number of midwives = 26 (25 marks = 100%)	>0 (%)	>2 (8%)	>4 (16%)
- improved	22 (84.6)	21 (80.8)	17 (65.4)
- unchanged	2 (7.7)	3 (11.5)	9 (34.6)
- deteriorated	2 (7.7)	2 (7.7)	0
Control town Number of midwives = 36			
- improved	13 (36.1)	11 (30.6)	8 (22.2)
- unchanged	1 (2.8)	8 (22.2)	22 (61.1)
- deteriorated	22 (61.1)	17 (47.20)	6 (16.7)

and co-workers 1995;16, Taylor 1992;38). However, the paper of Maclean and Tickner regarding the Safe Motherhood Initiative Educational Project reported possible changes in attitude as determined with a check list (Maclean and Tickner 1992;8), but no information regarding the result of the analysis appears in this publication.

Two of the studies done in the United States by Kattwinkel and co-workers regarding the Perinatal Continuing Education Programme (PCEP) evaluated, amongst other aspects, changes in attitude following the completion of their educational manual (Kattwinkel and co-workers 1979;64, Kattwinkel and co-workers 1978;12). This manual focused mainly on neonatal care. Attitude was evaluated in one of the studies with a pre- and post-study questionnaire (Kattwinkel and co-

workers 1979;64). A significant improvement in attitude of between 16% and 23% was achieved. The improved attitude related to specific aspects of the task health workers needed to perform. In contrast, the index study evaluated changes in attitude of midwives with regards to their perception of how well they felt equipped to perform the task expected from them (Appendix A). A direct comparison of the two studies is therefore not appropriate. Another study by Kattwinkel and co-workers found that health workers had a fatalistic attitude that could be detrimental to the ideal of optimal care (Kattwinkel and co-workers 1978;12). Provisional results of that study found that this attitude could be significantly improved following the completion of PCEP. No figures to quantify these changes were provided, neither were control hospitals used in either of their two studies.

The index study found that the attitude of midwives towards their work improved significantly in the study town (Table I). No differences were found between the study and control towns with pre-testing and no changes occurred in the control towns. The five questions included the most important components of attitude towards work (Appendix A). The changes that occurred in the study town therefore indicate that a favourable attitude can be achieved by studying PEP.

The improvement achieved in the study town was evenly spread amongst the 5 questions (Table 3). Only slight variations occurred in the control towns. Larger changes were observed with midwives working in the antenatal clinics compared to those in the labour ward (Table 4). Although not significantly different, the findings correspond to the larger improvement achieved by antenatal care midwives with regard to the application of knowledge (tested by antenatal cards), compared to labour ward midwives (tested by partograms) (Theron March 1996). Small random changes could have been expected between pre- and post-tests performed following an interval of 12 months. If a change of >4 (>16%) marks is regarded as substantial, a favourable change occurred in 17 (65,4%) midwives in the study town (Table 5), whereas 22 (61,1%) in the control towns showed no substantial changes.

The median age of midwives in the study town was 42 years with an age distribution that ranged from 23 to 60 years (Table 1). The mean ages of the midwives in the study and control towns did not differ (p=0,27). The median time spent in the study town was 8 years with a range from one to 30 years. Three years before the study, the hospital antenatal clinic together with it's staff was amalgamated with clinics under the local authority. This resulted in the differences in time spent by the midwives in their present posts when comparing the study and control towns at the commencement of the study.

The study town is larger than other towns in the region. Therefore two control towns were chosen, to match the study town, also with regard to the number of practicing midwives (Table I). With regard to medical care, these towns represent the prevailing health care situation in most rural South African towns.

Most studies evaluating attitude, have used a qualitative method (Turnbull and co-workers 1995;11). Although this kind of feedback was not formally obtained, comments regarding the programme volunteered by the midwives during post-testing, was without exception favourable. Chief professional nurses praised the uniform approach to patient care within the services, that resulted from studying the manual. They were unanimous in their view that the quality of care had improved.

Midwives who studied the Maternal Care Manual of PEP experienced a significantly improved attitude towards their work. The improved cognitive knowledge and ability to apply knowledge was also personally experienced, resulting in an increase in self confidence and job satisfaction. This positive attitude of midwives toward their work and their ability to perform their daily tasks is an important component of any programme to improve the quality of care rendered to women during pregnancy, labour and the puerperium.

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Appendix A

QUESTIONS ON ATTITUDE TOWARDS WORK

ANSWER THE FOLLOWING 5 QUESTIONS BY USING ANY NUMBER ON A **SCALE FROM 0 TO 5.** DRAW A RING AROUND THE NUMBER THAT CORRECTLY PORTRAYS HOW YOU FEEL.

5 = total satisfaction
0 = absolutely unsatisfactory

1. Is your present training sufficient for the level of care expected from you in the antenatal clinic or labour ward?

   Answer: 5 4 3 2 1 0

2. Do you have sufficient knowledge for the level of care expected from you in the antenatal clinic or labour ward?

   Answer : 5 4 3 2 1 0

3. Do you have the necessary practical skills required for the level of care expected from you in the antenatal clinic or labour ward?

   Answer: 5 4 3 2 1 0

4. Do you have the sufficient self confidence to manage patients with complications often encountered at the antenatal clinic or labour ward?

   Answer: 5 4 3 2 1 0

5. What level of job satisfaction do you experience when working in the antenatal clinic or labour ward?

   Answer: 5 4 3 2 1 0

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