Original Article

Implementation of care practices to prevent and repair perineal trauma in childbirth

Implementação de práticas assistenciais para prevenção e reparo do trauma perineal no parto

Implementación de prácticas asistenciales para la prevención y reparación de trauma perineal en el parto

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How to cite this article:
Santos RCS, Riesco MLG. Implementation of care practices to prevent and repair perineal trauma in childbirth. Rev Gaúcha Enferm. 2016;37(spe):e68304. doi: http://dx.doi.org/10.1590/1983-1447.2016.esp.68304.

doi: http://dx.doi.org/10.1590/1983-1447.2016.esp.68304

ABSTRACT

Objective: To implement care practices for perineal trauma prevention and repairing in normal birth.

Method: Quasi-experimental study conducted at Hospital da Mulher Mãe-Luzia, in Macapá, AP, Brazil. Seventy-four (74) nurses and obstetricians and 70 post-partum women were interviewed and the records of 555 patients were analyzed. The study was conducted in three stages: pre-audit and baseline audit (phase 1); educational intervention and implementation of best practices (phase 2); post-implementation audit (phase 3). Data was analyzed by comparison of the results of phases 1 and 3.

Results: Following the educational intervention, a lower number of health professionals encouraged directed pushing, performed episiotomies and repaired first-degree lacerations; more women reported lithotomy position; more patient records indicated the use of Vicryl™ to suture the perineal mucosa and skin.

Conclusion: The educational intervention improved birth care and perineal outcomes. Nevertheless, gaps were identified in the implementation of evidence, as well as inappropriate perineal care management

Keywords: Evidence-based practice. Parturition. Obstetric nursing.

RESUMO

Objetivos: Implementar práticas assistenciais para prevenção e reparo do trauma perineal no parto normal.

Métodos: Estudo quase-experimental, realizado no Hospital da Mulher Mãe-Luzia, Macapá, AP. Realizaram-se 74 entrevistas com enfermeiros e médicos e 70 com puérperas, e analisaram-se dados de prontuários (n=555). O desenvolvimento da pesquisa se deu em três fases: pré-auditoria e auditoria de base (fase 1); intervenção educativa e implementação de boas práticas assistenciais (fase 2); auditoria pós-implementação (fase 3); a análise foi pela comparação das fases 1 e 3.

Resultados: Após a intervenção educativa, menos profissionais incentivavam puxos dirigidos, realizavam episiotomia e suturavam lacerações de primeiro grau; mais mulheres informaram que o parto foi em posição litotômica; mais registros nos prontuários indicaram o uso de Vicryl® na sutura da mucosa e pele.

Conclusões: A intervenção educativa melhorou os cuidados e os desfechos perineais, porém há lacunas na implementação das evidências e inadequações no manejo do cuidado perineal.

Palavras-chave: Prática clínica baseada em evidências. Parto. Enfermagem obstétrica.

RESUMEN

Objetivo: Implementar prácticas asistenciales para la prevención y reparación del trauma perineal en el parto.

Método: Estudio casi experimental, conducido en el Hospital da Mulher Mãe-Luzia, Macapá, AP. Se realizaron 74 entrevistas con médicos y enfermeras y 70 con puérperas y se analizaron los datos de registros médicos (n=555). La investigación se desarrolló en tres fases: preauditoría y auditoría de base (fase 1); intervención educativa e implementación de buenas prácticas asistenciales (fase 2); auditoría posimplementación (fase 3); el análisis fue comparando las fases 1 y 3.

Resultados: Después de la intervención educativa, menos profesionales incentivaban pujo dirigido, realizaban episiotomía y suturaban desgarros de primer grado; más mujeres tuvieron el parto en posición litotomía; más registros indicaban uso de Vicryl® para suturar la mucosa y piel.

Conclusión: La intervención educativa ha mejorado el cuidado y los resultados perineales, pero hay lagunas en la implementación de evidencias y deficiencias en el cuidado perineal.

Palabras clave: Práctica clínica basada en la evidencia. Parto. Enfermería obstétrica.

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INTRODUCTION

Currently, there has been increased awareness of the importance of applying knowledge gained through research to clinical practice and health policies. However, such knowledge has been underused[1].

Evidence-based healthcare practice can be defined as clinical decision-making that considers the best available evidence, the context of care provision, client preference, and judgment of the healthcare provider. This evidence is then summarized and transferred to health services and professionals[2].

According to this model, the stage of knowledge translation has been described as a process that reduces the gap between health research and clinical practice, through its implementation[3].

There are many barriers to the dissemination and application of research findings to healthcare, with emphasis to lack of awareness and motivation of professionals, disagreement with research evidence or outcomes, and knowledge apparently useless in clinical practice[4].

In Brazil, the main barrier in this regard is the lack of familiarity with knowledge transfer and the difficulties in the implementation of this new field, e.g. related to the definition of relevant research problems, low budget and little concern for translational research by the funding agencies[5].

Transfer of knowledge is one of the evidence-based healthcare components proposed by the Joanna Briggs Institute (JBI), headquartered in Adelaide, Australia. It concerns the transfer of knowledge to professionals and healthcare systems around the world based on decision-making methods[2].

According to the JBI model, transfer and implementation of evidence in clinical practice are different components. Thus, after the generation, synthesis and transfer of evidence, evidence-based practices are implemented through the assessment of their impact on the healthcare process[2].

Over the past decades, research in maternal health has sought solutions to various problems, such as perineal trauma, defined as any damage to the genitalia during childbirth that occurs by spontaneous laceration or intentionally by surgical incision (episiotomy)[6].

It is estimated that approximately 70% of women having vaginal birth sustain some sort of perineal trauma, and three quarters of them will require suturing[7].

The rates of episiotomy vary widely, ranging from 9.7% (Sweden) to 100% (Taiwan), with lower rates in English-speaking countries such as Canada (23.8%) and the United States (32.7%), and high rates in countries such as Ecuador (96.2%), China (82%) and South Africa (63.3%). Rates of episiotomy are usually higher than 65% in primiparous women[7].

In Brazil, the national hospital-based survey "Birth in Brazil"[8], with 23,940 mothers found that episiotomy was performed in 53.5% of women.

Accordingly, preventing perineal trauma during childbirth has impact on the main resulting morbidities, especially bleeding, pain, infection, dehiscence and dyspareunia[9]. Other possible consequences that can be avoided are ecchymosis, hematoma, rectal fistula, urinary and anal incontinence. Aspects such as psychological distress, breastfeeding problems, negative birth experience, and future sexual dissatisfaction of the woman and her partner can be minimized by promoting perineal integrity. Also, nurses, midwives and physicians should be able to prevent, assess, and repair perineal trauma by ensuring that the tissues and structures involved are properly repaired, with the use of suitable techniques and materials to promote healing and reduce morbidity, as recommended by the evidence[10].

However, despite the knowledge gained, little attention was paid to these important aspects related to management of perineal care at childbirth, since many professionals routinely use practices considered harmful to perineal integrity, characterizing practices that are not evidence-based.

Thus, the general purpose of this study was to implement care practices targeted to the prevention and repair of perineal trauma during normal birth. The specific objectives were assessing the healthcare practices used to prevent and repair perineal trauma in normal birth; assess the impact of these practices on perineal outcomes.

METHOD

Before and after quasi-experimental intervention study, according to the methodology of implementation[11] of scientific evidence in clinical practice, from the Joanna Briggs Institute (JBI). This methodology consists of a clinical audit process and comprises three phases: 1) pre-audit and baseline audit; 2) implementation of best practices; 3) post-implementation audit.

The study was conducted from July 2015 to March 2016, at Hospital da Mulher Mãe-Luzia (HMML), in Macapá, Amapá, which provided care under Brazil's Unified Health System (SUS), attached to the State Department of Health of Amapá.

The population consisted of nurses, physicians and residents of both categories of the HMML and the postpartum women who attended the service.

Eligible professionals were all nurses (n = 42) and physicians (n = 29) who met the following inclusion criteria: holding a degree of obstetrical specialist, or doing specialization or residency in obstetrics; providing direct assistance to normal birth. For participating in phase 3, the professionals were also supposed to have participated in phase 2. The final sample of participants in phases 1, 2 and 3 was composed of 42 individuals (25 nurses and 17 physicians), 32 and 32 (20 nurses and 12 physicians), respectively.

The sample of postpartum women consisted of two groups: hospitalized postpartum women and records of women who gave birth at the HMML. Thirty-five women who gave birth before and 35 who gave birth after the intervention (phases 1 and 3, respectively) were included in the sample of hospitalized women, totaling 70 women, according to the following criteria: not belong to an indigenous ethnic group; considered to be at habitual obstetric risk; admitted to hospital during active labor phase with cervical dilation up to 8 centimeters; had vaginal birth; accessible through the telephone for interviews 10-12 days and 30 days after childbirth. Convenience sampling was used and the sample size was calculated based on the rate of episiotomy of the Northern region (48.6%), the lowest regional rate in Brazil[8]. For the intentional sample of women's records, all records of pregnant women who were discharged one month before the intervention (n = 424) and one month after the intervention (n = 440) were considered. Regarding the inclusion criteria participant does not belong to any indigenous ethnic group, at habitual obstetric risk, admitted to hospital during active labor phase with cervical dilation up to 8 centimeters, vaginal birth, the final sample of patient records was 291 in phase 1 and 264 in phase 3.

During pre-audit and baseline audit (phase 1), the following activities were carried out: stablishment of the audit team; definition of audit criteria; preliminary assessment of the perineal outcomes and identification of the practices used in perineal trauma prevention and repair.

The composition of the audit team was discussed in meetings with stakeholders. It included the general manager, clinical director and technical director of HMML, the nursing coordinator and the head of obstetrics, the Permanent Education Center of the hospital, the researcher and a resident nurse.

For determining the levels of adherence to the recommendations, obstetric practices and perinatal outcomes related to normal birth, the following audit criteria were used: maternal position; directed pushing; Kristeller maneuver; prevention of perineal trauma; rates of episiotomy and spontaneous laceration; assessment and classification of laceration; first-degree laceration repair; perineal trauma suturing technique; type of material (thread); anesthesia in perineal repair; spontaneous perineal pain and perineal pain during activities (walking, sitting, urinating, evacuating, breastfeeding, dyspareunia); level of satisfaction of the postpartum woman with perineal repair.

Face to face interviews were conducted with the health professionals and postpartum women with a structured form, and the duration was approximately 10 minutes. The interviews with the health professionals were conducted in the hospital, on different days of the week, during their work hours, at a prescheduled date. Face to face interviews were conducted with hospitalized postpartum women and telephone interviews were conducted after hospital discharge, between 10-12 days and 30 days postpartum.

Phase 1 was concluded with collection of data from records of non-interviewed postpartum women. The records (n = 424) of postpartum women discharged in July 2015 were requested to the medical archival service one week before the start of the baseline audit, and the sample was selected (n = 291), considering the same inclusion criteria established for the respondents.

Three weeks after the end of the pre-audit and baseline audit (phase 1), an educational intervention entitled "Seminar on evidence-based practices in care to normal birth" (phase 2) was conducted with the health professionals who participated in this study. The purpose of the referred intervention was to present the results of the preliminary assessment of perineal care practices in normal birth implemented in the study setting and discuss the scientific evidence on best practices in perineal trauma management, considering the professional experience of each participant.

The presentation of evidence was made with a data-show projector and an animated video about perineal suture, with emphasis on the continuous suture technique. The Seminar was held in the morning and was repeated in the afternoon to allow the participation of all professionals involved, and had a duration of 4 hours in each period, and at the time of the event, folders with updated material recommended by the World Health Organization and the Ministry of Health were made available, including the main systematic reviews of the Cochrane Collaboration and randomized clinical trials indexed by the Virtual Health Library, duly translated into Portuguese.

The post-implementation audit (phase 3) started 60 days after the end of phase 2, and was aimed to assess the

impact of the proposed intervention on the implementation of best practices in perineal trauma care. Post-implementation audit data were collected in the same manner as in phase 1, with independent samples from women and records, as previously described.

Inferential data analysis was made by comparing the results of phase 1 with phase 3. The Generalized Estimating Equations (GEE) model was used to compose the sample of health professionals and for the variables collected at more than one postpartum moment, in the sample of postpartum women. Fisher's exact test was used for the variables collected only once in the postpartum period and for the sample of patient records. All analyzes were performed with SPSS 22 software, in two-tailed tests, assuming a probability of type 1 error of 5% (p-value = 0.05).

The project was approved by the Research Ethics Committee of the School Nursing of Universidade de São Paulo (CAAE: 31700414.50000.5392, no 698.421, of June, 10, 2014). HMML authorization was obtained and the participation of health professionals and women was voluntary, after reading and signing the Free and Informed Consent form and Term of Assent, when indicated, according to Resolution no. 466/12 of Brazil's National Health Council.

RESULTS

Table 1 presents the answers of the professionals related to frequency of use of practices in birth care. Comparison between phases 1 and 3 of the study showed increase in the percentage of professionals who rarely or never encourage directed pushing (p = 0.009), use episiotomy restrictively (p = 0.021), and do not repair first-degree lacerations (p = 0.011).

Table 2 shows the responses of postpartum women related to obstetric interventions and perineal outcomes that occurred during childbirth. Lithotomy position at birth was adopted by most women in phase 1 and was also more frequent in phase 3, with statistically significant difference (p = 0.028).

Table 3 shows complaint of perineal pain, spontaneous or caused by some activities (walking, sitting, urinating, evacuating or breastfeeding) and the level of satisfaction of postpartum women with perineal repair. It can be seen that the frequency of spontaneous pain in postpartum women is small or absent in all postpartum periods. Regarding pain resulting from some activities, the frequency decreased during the postpartum period, with statistically significant difference for the different periods (p = 0.019), but with no difference between phases 1 and 3. It is worth mentioning that all the postpartum women in both phases of the study, denied dyspareunia, in the period of 10-12 days and 30 days after childbirth.

The results related to patient records are presented in Table 4. The high number of records without recording of all variables was observed in both phases. The only obstetric practices in which there was statistically significant difference were repair of the perineal laceration and the type of material used to suture the mucosa and the skin. Proportionately, fewer women had perineal laceration sutured (p = 0.039) and more professionals used Vicryl® in the mucosa (p = 0.006) and skin (p = 0.033).

Table 1 – Distribution of the practices used in childbirth by professionals in the pre-audit and baseline audit (phase 1) and post-implementation audit (phase 3) and p-value – Macapa, AP, 2015-2016 (continue)

Practices used in childbirth	Professionals				p-value*
	Phase 1		Phase 3		
	n	%	n	%	
Recommends lithotomy position in childbirth	**42**	**100**	**32**	**100**	
Always or most often	22	52.4	12	37.5	0.059
Rarely or never	20	47.6	20	62.5	
Encourages directed pushing	**42**	**100**	**32**	**100**	
Always or most often	19	45.0	6	18.8	**0.009**
Rarely or never	23	55.0	26	81.2	
Uses technique of perineal trauma prevention	**42**	**100**	**32**	**100**	
Always or most of the times	29	69.0	19	59.0	0.425
Rarely or never	13	31.0	13	41.0	

Table 1 – Distribution of the practices used in childbirth by professionals in the pre-audit and baseline audit (phase 1) and post-implementation audit (phase 3) and p-value – Macapa, AP, 2015-2016 (conclusion)

Practices used in childbirth	Professionals				p-value*
	Phase 1		Phase 3		
	n	%	n	%	
Performs episiotomy	**42**	**100**	**32**	**100**	
Always or most often	7	16.7	1	3.1	**0.021**
Rarely or never	35	83.3	31	96.9	
Repairs 1st degree laceration	**42**	**100**	**32**	**100**	
Always or most often	16	38.1	6	18.8	**0.011**
Rarely or never	26	61.9	26	81.2	
Performs rectal examination after 3rd or 4th degree lacerations repair	**42**	**100**	**32**	**100**	
Always or most often	26	61.9	23	71.9	0.232
Rarely or never	16	38.1	9	28.1	
Mucosa suturing technique	**42**	**100**	**32**	**100**	
Interrupted	3	7.0	3	9.4	
Continuous simple	13	31.0	13	40.6	0.250
Continuous anchored	26	62.0	16	50.0	
Muscular layer suturing technique	**42**	**100**	**32**	**100**	
Interrupted	23	54.8	17	53.1	
Continuous simple	7	16.6	7	21.9	0.932
Continuous anchored	12	28.6	8	25.0	
Skin suturing technique	**42**	**100**	**32**	**100**	
Interrupted	23	54.8	16	50.0	
Continuous simple	10	23.8	13	40.6	0.641
Continuous anchored	5	12.0	1	3.1	
Intradermal	4	9.4	2	6.3	
Suturing material (thread) in the mucosa	**42**	**100**	**32**	**100**	
Vicryl®	7	16.7	6	18.7	
Catgut	10	23.8	7	21.9	0.864
Chromic catgut	25	59.5	19	59.4	
Suturing material (thread) in the muscular layer	**42**	**100**	**32**	**100**	
Vicryl®	6	14.3	7	21.9	
Catgut	5	11.9	6	18.7	0.125
Chromic catgut	31	73.8	19	59.4	
Suturing material (thread) in the skin	**42**	**100**	**32**	**100**	
Vicryl®	12	28.5	6	18.8	
Catgut	18	43.0	13	40.6	0.089
Chromic catgut	12	28.5	13	40.6	

Source: Research data, 2016.
*GEE

Table 2 – Distribution of the practices used and the perineal outcomes identified in interviews with the postpartum women at pre-audit and baseline audit (phase 1) and post-implementation audit (phase 3) and p-value – Macapa, AP, 2015-2016

Variable	Interviewed postpartum women				p-value*
	Phase 1		Phase 3		
	n	%	n	%	
Lithotomy position in childbirth	**35**	**100**	**35**	**100**	
Yes	27	77.1	34	97.1	**0.028**
No	8	8.6	1	2.9	
Directed pushing	**35**	**100**	**35**	**100**	
Yes	8	22.9	9	25.7	1.000
No	27	77.1	26	74.3	
Kristeller's maneuver	**35**	**100**	**35**	**100**	
Yes	2	5.7	5	14.3	0.428
No	33	94.3	30	85.7	
Perineum	**35**	**100**	**35**	**100**	
Spontaneous laceration	21	60.0	13	37.1	
Intact	12	34.3	17	48.6	0.155
Episiotomy	2	5.7	5	14.3	
Perineal repair	**23**	**100**	**18**	**100**	
Yes	17	73.9	14	77,8	1.000
No	6	26.1	4	22.2	
Anesthesia in perineal repair	**17**	**100**	**14**	**100**	
Yes	14	82.4	13	92.9	0.607
No	3	17.6	1	7.1	

Source: Research data, 2016.
*Fisher's exact test

DISCUSSION

Regarding the obstetric practices used by health professionals to prevent perineal trauma at childbirth, after the intervention, the present study found that a smaller number of professionals reported the use of directed pushing and episiotomy, with statistically significant difference. Before the intervention, most professionals believed that such practices could be beneficial to the patients, but were not able to support their beliefs. Directed pushing and routine use of episiotomy during the second stage of labor are clearly harmful or ineffective practices that increase the incidence of trauma and perineal pain after birth, and hence should be eliminated[12-13].

Cross-sectional study[14], conducted in São Paulo with 317 primiparous women concluded that directed pushing is mostly related to posterior perineal lacerations. Randomized clinical trial[7], carried out in the UK, with 3,681 women used an educational intervention with midwives and physicians for assessing and repairing second-degree lacerations and episiotomies based on evidences and concluded that, after training, most professionals reported using evidence-based practices, including selective episiotomy.

Other practices of perineal trauma prevention reported by the professionals were manual protection of the perineum and perineal massage with vegetable oil, performed during the second stage of labor. There is still little evidence available in the literature to support these practices. In 2011, a systematic review[15] assessed perineal techniques during the second stage of labor to reduce perineal trauma in eight clinical trials with 11,651 women, and the use of warm compresses on the perineum was the only associated technique. This practice has been recommended by the American College of Obstetricians and Gynecologists[16] to reduce the incidence of third and fourth-degree lacerations.

Table 3 – Distribution of perineal pain and level of satisfaction with perineal repair according to the postpartum period identified in interviews with the postpartum women in the pre-audit and baseline audit (phase 1) and post-implementation audit (phase 3) and value-p – Macapá, AP, 2015-2016

Variable	Interviewed postpartum women			
	Phase 1		Phase 3	
	n	%	n	%
Perineal pain 1-2 days after childbirth*	**17**	**100**	**14**	**100**
Spontaneous	-	-	1	7.0
Related to activities (walking, sitting, urinating, evacuating or breastfeeding)	16	94.0	11	79.0
Painless	1	6.0	2	14.0
Perineal pain 10-12 days after childbirth*	**12**	**100**	**14**	**100**
Spontaneous	-	-	2	14.3
Related to activities (walking, sitting, urinating, evacuating or breastfeeding)	7	66.7	8	57.1
Painless	4	33.3	4	28.6
Did not answer the phone	6	-	-	-
Perineal pain 30 days after childbirth*	**11**	**100**	**13**	**100**
Spontaneous	-	-	-	-
Related to activities(walking, sitting, urinating, evacuating or breastfeeding)	7	63.6	5	38.5
Painless	4	36.4	8	61.5
Did not answer the phone	6	-	1	-
Satisfaction with perineal repair 1-2 days after childbirth†	**15**	**100**	**12**	**100**
Satisfied/Very satisfied	4	26.7	8	66.7
Dissatisfied/Somewhat satisfied	11	73.3	4	33.3
Does not know	2	-	2	-
Satisfaction with perineal repair 10-12 days after childbirth†	**11**	**100**	**14**	**100**
Satisfied/Very satisfied	6	54.5	10	71.4
Dissatisfied/Somewhat satisfied	5.	45.5	4	28.6
Does not know	1	-	-	-
Did not answer the phone	5	-	-	-
Satisfaction with perineal repair 30 days after childbirth†	**11**	**100**	**13**	**100**
Satisfied/Very satisfied	7	63.6	8	61.5
Dissatisfied/Somewhat satisfied	4	36.4	5	38.5
Did not answer the phone	6	-	1	-

Source: Research data, 2016.
*GEE: p-value = 0.019 (between days); p-value = 0.450 (between phases 1 and 3)
†GEE: p-value = 0.413 (between days); p-value = 0.220 (between phases 1 and 3)

The practices implemented and the perineal outcomes identified in the interviews with the postpartum women showed greater use of lithotomy position during childbirth, with statistically significant difference. This finding contrasts with some respondents' statements mentioning decrease in the use of this position. This result indicates that the educational intervention failed to promote the use of evidence-based care. The fact that lithotomy position provides better visualization of the birth canal and makes it easier for obstetricians to push the fetus during expulsion are the main reasons for maintaining this practice and resisting the use of evidence-based practices.

Systematic review[17] on different positions during the second stage of labor without epidural anesthesia included

Table 4 – Distribution of practices and perineal outcomes identified in the records in the pre-audit and baseline audit (phase 1) and post-implementation audit (phase 3) and p-value – Macapá, PA, 2015-2016

Variable	Postpartum women according to the patients' records				P-value*
	Phase 1		Phase 3		
	n	%	n	%	
Lithotomy position in childbirth	**291**	**100**	**264**	**100**	
Yes	74	57.4	63	62.4	
No	55	42.6	38	37.6	0.527
No record	162		163		
Perineum	**236**	**100**	**172**	**100**	
Spontaneous laceration	147	62.3	105	61.0	
Intact	73	30.9	51	29.7	0.642
Episiotomy	16	6.8	16	9.3	
No record	55	-	92	-	
Degree of perineal laceration	**103**	**100**	**70**	**100**	
First	40	38.8	30	42.9	
Second	57	55.4	36	51.4	0.905
Third	6	5.8	4	5.7	
No record	44	-	35	-	
Repair of perineal lacerations	**137**	**100**	**95**	**100**	
Yes	126	92.0	78	82.1	**0.039**
No	11	8.0	17	17.9	
No record	10	-	10	-	
Type of suturing material in the mucosa	**62**	**100**	**32**	**100**	
Vicryl®	3	4.8	9	28.1	
Catgut	5	8.1	3	9.4	**0.006**
Chromic catgut	54	87.1	20	62.5	
No record or not applicable	156	-	181	-	
Type of suturing material in the muscle	**49**	**100**	**24**	**100**	
Vicryl®	3	6.1	5	20.8	
Catgut	3	6.1	3	12.5	0.087
Chromic catgut	43	87.8	16	66.7	
No record or not applicable	169	-	189	-	
Type of suturing material in the skin	**49**	**100**	**24**	**100**	
Vicryl®	5	10.2	6	25.0	
Catgut	19	38.8	3	12.5	**0.033**
Chromic catgut	25	51.0	15	62.5	
No record or not applicable	169	-	189	-	

Source: Research data, 2016.
*Fisher's exact test

22 clinical trials and 7,280 women. The authors concluded that the use of vertical position during this stage was associated with reduction in episiotomies. However, it should be stressed that a positive birthing experience is achieved when the position is freely chosen by the woman.

Corroborating the findings of the national hospital-based survey "Birth in Brazil"[8], our reality does not differ from the rest of the country, with obstetricians performing interventions not based on evidences, and thus exposing women to the risk of perineal trauma.

On the other hand, in the present study, after the intervention, there were less reports of women with spontaneous laceration and more reports of intact perineum, though these differences were not statistically significant. These more favorable perineal outcomes can be explained by nurses' adherence to evidence-based practices, who were also more willing to use the "hands off" technique presented and discussed in the educational intervention as an alternative to prevent perineal trauma. Systematic review[18] with five randomized controlled trials (n = 6,816 women) and seven non-randomized trials (n = 108,156 women) aimed to compare the effect of "hands on" against "hands off" techniques concluded that evidence of the effectiveness of perineal protection during delivery on reduction of the risk of perineal trauma is scarce, and further testing is urgently needed.

Regarding the results of the implemented practices and the perineal outcomes identified in the records, most of them did not include the variables analyzed in both audit phases. One explanation for this limitation can be associated to the difficulty of health professionals in recording all care procedures related to delivery, including obstetric practices and perineal outcomes, due to the large number of patients assisted.

Regarding the practices of repair of perineal trauma during delivery identified in interviews with professionals, it was found, after the intervention, that fewer professionals reported first-degree perineal laceration repair. It is worth mentioning that the Seminar that discussed the decision of repairing perineal lacerations based on a systematic review[19], found that there is limited evidence in this regard and that the decision of suturing these perineal lacerations can be based on the professional's clinical assessment and the patient's preference. Furthermore, the National Guideline Assistance to Normal Birth[13] recommends suturing first-degree lacerations in order to improve healing.

Our study found that, after the intervention, more participants decided to implement evidence-based care, with significant adherence of these professionals to classification of perineal trauma: all of them reported performing this classification. A study[6] published in 2012 focused on the inadequate classification of perineal trauma among professionals because the anatomical variables of the vulvoperineal region may interfere with this classification, especially in the case of third and fourth-degree lacerations, which are generally underestimated. The classification of perineal trauma has been proposed and accepted internationally, as follows: first-degree trauma (involves skin and mucosa), second-degree trauma (includes perineal muscles), third-degree trauma (involves the anal sphincter and is subclassified into 3a: damage to less than 50% of the external anal sphincter; 3b: damage to more than 50% of the external anal sphincter; 3c: damage to the entire internal and external anal sphincter and fourth-degree trauma (affects the anal epithelium)[9].

There was also an improvement in the practice of health professionals (nurses and obstetricians) regarding rectal examination, which was more frequently. This finding indicates that the educational intervention was effective in transferring knowledge, because some participants reported that they were not sure of the need to perform this test. Rectal examination is recommended in cases of third and fourth-degree trauma to check whether the suture was not inadvertently inserted through the rectal mucosa[6].

In the current study, there was an improvement in the use of the non-anchored continuous suturing technique for perineal repair in all tissue layers after the intervention. A systematic review[10] with meta-analysis of 16 randomized controlled and quasi-randomized trials with 8,184 women with episiotomy or second-degree laceration, the results confirmed the evidence that the continuous suturing technique, compared to the interrupted technique, is associated with less pain, less material, analgesia and removal of suture, which can improve healing. More recent evidence suggests that continuous suturing in the repair of perineal tissues is associated with increased satisfaction of women[13, 16].

The interviews with health professionals also revealed the use of Vicryl® suturing material on all tissue layers, after the intervention, except for skin suture, where the level of use of chromic catgut increased. This result was partially satisfactory because, despite the lack of synthetic suturing material available at the study setting, during the post-implementation audit, more professionals reported its use in the mucosa and in the muscular layer. Although catgut suture is widely used in Brazil, there are recent evidences[13,16] that rapidly absorbed synthetic suture material, particularly, polyglycolic acid and polyglactin 910 (Vicryl Rapide®), is associated with less perineal pain in the postpartum period,

less dehiscence and reduced need for another perineal suturing up to three months after birth, when compared to suturing with catgut.

Regarding the questions posed to the postpartum women who had perineal trauma repair, there were few or none complaints of spontaneous perineal pain, at three moments in the postpartum period: 1 to 2 days, 10 to 12 days and 30 days. The frequency of reports of pain caused by walking, sitting, urinating, evacuating or breastfeeding also decreased during the postpartum period, with statistically significant difference for the different periods. Perineal pain is a commonly reported morbidity symptom, highly associated with perineal trauma, especially episiotomy, which tends to decline over time. Cross-sectional study[12] conducted with 473 women, to identify the association between perineal trauma and pain, concluded that the recognition of this association is important to improve the use of evidences related to the suturing technique and the type of material (thread) used.

Regarding the practices and perineal outcomes detected in patients' records, after the intervention, there were less records of sutured women and more records of use of Vicryl® in the repair of mucosa and skin, with statistically significant difference. However, since most records were incomplete, the results suggest that these data are underestimated and that more women may have been sutured. Moreover, as more professionals reported using Vicryl® to repair the mucosa and muscle, there were also more records of use of this material in skin and mucosa suturing. Therefore, we can assume that, after the intervention, there was a significant increase in the use of this practice, which is based on available evidences[13,16].

In the present study, which was part of a doctoral thesis[20] developed in the Postgraduate Nursing Program in the School of Nursing of the University of Sao Paulo, the lack of information in patients records was an important limitation. Other limitations included the use of convenience sampling of the hospitalized postpartum women, without randomization; difficulties in data collection and unavailability of health professionals, mainly physicians; the lack of synthetic suturing material in the study setting during the research and the lack of practical training during the educational intervention, to improve perineal trauma assessment and classification.

Still, the findings confirm the importance of permanent and standardized education for the maintenance of evidence-based care, as recommended in the literature, and provide contributions to knowledge and clinical practice of nursing professionals, demonstrating that many practices are empirical and that there are evidences to prevent morbidities. The study also highlights the importance and the need to improve the quality of patients' records. There is also the possibility of implementation of these results in clinical practice. Despite the barriers and difficulties, the audits allow the timely identification of potential gaps in care, in order to local managers may establish the appropriate strategies to deal with them.

CONCLUSION

The findings of the present study allow to conclude that the methodology of implementation of evidence-based practices in the prevention and repair of perineal trauma in normal birth improved the birth care and the perineal outcomes, in the study setting, as follows: less nurses and physicians that adopt directed pushing and routine episiotomies, fewer reports of women with postpartum perineal pain and more records of the use of Vicryl® to suture the mucosa and skin.

On the other hand, the study identified gaps in the implementation of best practices and some inadequacies in the management of perineal care, e.g. professionals who did not use repair first-degree lacerations, more women reporting the lithotomy position and less information on perineal lacerations suture in the patients' records. Educational interventions on evidence-based practice may result in improvements in care and maternal health outcomes.

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Received: 09.28.2016
Approved: 02.14.2017