

## KRISTELLER MANEUVER: IS THERE BENEFIT IN THIS TECHNIQUE?

Manobra de Kristeller: há benefício nesta técnica?

Manobra de Kristeller: ¿hay beneficio en esta técnica?

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### How to cite this article:

Araújo AAC, Nery IS, Brito MPM, Mesquita MKR, Santos JDM. Kristeller Maneuver: is there benefit in this technique?. 2021 jan/dez; 13:276-281. DOI: <http://dx.doi.org/0.9789/2175-5361.rpcfo.v13.8513>.

### ABSTRACT

**Objective:** to analyze the benefits and harms that the Kristeller Maneuver presents in obstetric practice for women and the concept. **Method:** this is an integrative review carried out in LILACS, BDENF, IBECs e MEDLINE. The results were interpreted by synthesizing them in a critical and descriptive way. **Results:** the sample was made by nine studies launched in 2007 to 2017. These subjects showed that this is not a benefit option, in contrast, it can bring several harm to the woman such as dysfunctions in the urinary system, dyspnea, perineal pain, anal incontinence, in addition to an increase in the number of episiotomies. Regarding the concept, the records of cephalhematomas, increased cardiac rhythm, epidural hemorrhage and Caput subdudum were found. **Conclusions:** The publications referenced this maneuver to a reproductive culture marked by traumas, besides promoting the non-use of this technique.

**Descriptors:** Patient safety; Evidence-based practice; Professional practice; Delivery rooms.

### RESUMO

**Objetivo:** analisar os benefícios e os malefícios que Manobra de Kristeller apresenta na prática obstétrica para a mulher e o conceito. **Método:** trata-se de uma revisão integrativa realizada nas bases de dados LILACS, BDENF, IBECs e MEDLINE. Interpretou-se os resultados sintetizando-os de forma crítica e descritiva. **Resultados:** a amostra foi composta por nove estudos publicados entre 2007 a 2017. Estas publicações evidenciaram que esta manobra não possui benefício, em contrapartida, pode trazer vários malefícios à mulher como disfunções no sistema urinário, dispneia, dor perineal, incontinência anal, além do aumento do número de episotomias. Em relação ao conceito, foram encontrados registros de cefalohematomas, aumento do ritmo cardíaco fetal, hemorragia epidural e Caput

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sucedaneum. **Conclusão:** as publicações referem que esta manobra trará uma história reprodutiva marcada por traumas, além de reforçar o não uso desta técnica.

**Descritores:** Segurança do paciente; Prática clínica baseada em evidências; Prática profissional; Salas de parto.

## RESUMEN

**Objetivo:** analizar los beneficios y los maleficios que la Manobra de Kristeller presenta en la práctica obstétrica para la mujer y el concepto. **Método:** se trata de una revisión integrativa realizada en las bases de datos LILACS, BDNF, IBECs e MEDLINE. Se interpretó los resultados sintetizándolos de forma crítica y descriptiva. **Resultados:** la muestra fue hecha por nueve estudios lanzados en 2007 a 2017. Estas materias evidenciaron que ésta no es una opción de beneficio, en contrapartida, puede traer varios maleficios a la mujer como disfunciones en el sistema urinario, dispareunia, dolor perineal, incontinencia anal, además del aumento del número de episotomías. En relación al concepto, se encontraron los registros de cefalhematomas, aumento del ritmo cardíaco, hemorragia epidural y Caput succedaneum. **Conclusión:** Las publicaciones referenciaron esta maniobra a una cultura reproductiva marcada por traumas, además de promover el no uso de esta técnica.

**Descriptores:** Seguridad del paciente; Prática clínica basada em la evidencia; Prática profesional; Salas de parto.

## INTRODUCTION

Pregnancy corresponds to a critical period of transition marked by major changes in the woman's body and emotional state, in addition to being an important stage in the development of the female personality. One factor that emerges from the feelings expressed during this period is fear. As a result, obstetric practice has become more interventionist due to women's insecurity during their parturition process. Currently, the hospital environment aims to update itself, looking for new ways to make delivery safe for women and babies.<sup>1-3</sup>

In this sense, the World Health Organization (WHO) has made efforts in the sense that professionals do not carry out practices without scientific evidence, recommending the use of good practices in childbirth care and reducing unnecessary interventions during this period.<sup>2</sup>

In Brazil, the Ministry of Health since 1998 has published ordinances and carried out several strategies to reduce maternal and child morbidity and mortality. To this end, in 2011 with Ordinance No. 1459, which created the Rede Cegonha, whose objectives aim at attention throughout the female reproductive history, access and reception through the Maternal-Child Health Care Network; and, to reduce maternal and child mortality in the country.<sup>4</sup> This legal provision has been the object of updates and improvements since it was implemented by the Federal Government. Even so, it aims to guarantee the preservation of the rights of women so that the parturient is oriented about her safety and the concept of childbirth during the labor and delivery process.<sup>5-6</sup>

In Brazil, there are discussions about obstetric practices marked by invasive procedures without clinical justification

that compromise the biopsychosocial status of the parturient. In addition, the lack of information and denial of their rights is present, going completely opposite to Ordinance No. 353, of February 14, 2017.<sup>7-10</sup> This ordinance establishes parameters for the performance of normal childbirth in Brazil and presents recommendations on the various actions during the pregnancy period, in addition to determining that women should have their decisions respected in labor.<sup>11</sup> Among the procedures performed on parturients by health professionals to expedite labor, the administration of oxytocics stands out to stimulate labor, episiotomy, amniotomy and Kristeller's maneuver, as they are often unnecessary practices without an indication to justify them.<sup>12-13</sup>

Among these interventions, Kristeller's maneuver stands out. This maneuver created by the German gynecologist Samuel Kristeller (1820–1900) had its first description made on February 11, 1867, in the magazine *Berline Klinische Wochenschrift*, in which principles were described that related pushing and pulling forces that would have beneficial influences, besides to accelerate labor. This procedure consists of applying constant pressure on the fundus of the uterus lasting between 5 and 8 seconds.<sup>14-16</sup>

This technique was used constantly during antiquity. This procedure has permeated practices in obstetric services ever since with the intention of accelerating fetal expulsion. Samuel Kristeller also described that this maneuver should be used when the uterine contractions were at low intensity, for this an external factor that would assist during labor would be essential.<sup>15,17</sup> However, on February 14, 2017, the Ministry of Health through the publication of the National Childbirth Assistance Guidelines, it made Kristeller's maneuver contraindicated regardless of the mode of delivery because it did not show scientific evidence to justify its application. As a result, institutions that use this method are subject to indemnity by the public authorities.<sup>11</sup>

Discussions about the theme are important, in view of the recent repercussions and movements on the humanization of childbirth. In addition, this theme is not much discussed in the literature. In this way, this study allows professionals to be informed or updated about the Kristeller Maneuver, by contributing with necessary information for obstetric practice. In light of the above, this study aims to analyze the benefits and harms that Kristeller's Maneuver presents in obstetric practice for women and the conceptus.

## METHODOLOGY

It is an integrative review of the literature that made it possible to gather and carry out a synthesis of the results of research on the topic. This research modality has as main objective to generate a source of current knowledge to be incorporated into clinical practice, thus improving decision making. In addition, it indicates and eliminates the gaps on the issues raised in the chosen area.<sup>18-20</sup>

To elaborate the guiding question, the PICO strategy was used, in which four important pillars are described that help guide the questioning in the literature, among them: P- Patient; I- Intervention; C- Comparison (Control); and O - Outcome.<sup>21</sup> From that, P - Parturients was established; I - Kristeller's maneuver; C- There was no standard intervention; and O - Impacts of this practice. Therefore, the guiding question was: "What are the benefits and harms that the Kristeller Maneuver presents in obstetric practice for women and the conceptus"?

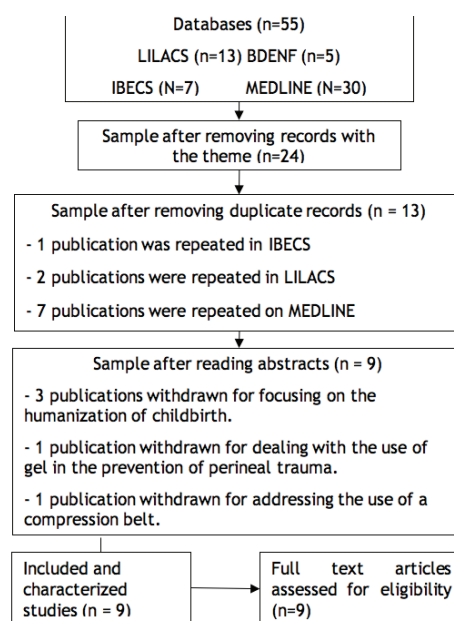
The revision process was organized based on six steps for the preparation of the study: 1st Phase: Identification of the theme or questioning of the integrative review; 2nd Phase: Sampling or searching the literature; 3rd Phase: Categorization of studies; 4th Phase: Evaluation of the studies included in the integrative review; 5th Phase: Interpretation of results; 6th Phase: Synthesis of the knowledge evidenced in the analyzed articles or presentation of the integrative review.<sup>19</sup>

The databases chosen were: Latin American Health Sciences Literature (LILACS), Nursing Databases (BDENF), Spanish Health Sciences Bibliographic Index (IBECS) and International Health Sciences Literature (MEDLINE). The study has as descriptors the following terms registered in Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH): "Patient Safety", "Evidence-Based Practice", "Women's Health", "Professional Practice", "Obstetrics". An uncontrolled descriptor was also used: "Kristeller".

Scientific articles published between 2007 and 2017 were included, available in summary and full text for download, published in English, Portuguese or Spanish and which encompassed the implications of applying the Kristeller Maneuver (thematic axis). Incomplete researches that were disconnected with the topic were excluded.

The database search was performed using three different combinations: "Labor, Obstetric" and "Kristeller", "Female" and "Kristeller" and "Evidence-Based Practice" and "Kristeller". These combinations resulted in 55 publications that after refinements resulted in the final sample of 9 studies. The method used is shown in Figure 1.

**Figure 1** - Flowchart of identification, selection and inclusion of the investigated articles. Teresina, PI, Brazil, 2018



## RESULTS AND DISCUSSION

In this integrative review, the nine publications that converged with the criteria of this research were evaluated. The data obtained from the analysis of the selected studies are presented in Table 1, in which it will be described: title of the publication, year, journal, authorship and the outline.

As for the number of publications per year of the sample studied, 2014 stood out with a greater number, being equivalent to 33.3% for this year. Regarding the method, the follow-up study represented about (22.2%) of the total publications. Dysfunctions in the urinary system were mentioned in (33.3%) of the studies, the most mentioned complication being. Regarding the main findings about Kristeller's maneuver, those presented in Chart 1 stand out.

**Table 1** - Characterization of the evaluated publications. Teresina - PI, Brazil, 2018.

Nº	TITLE OF PUBLICATION	YEAR/MAGAZINE	AUTHORS	TYPE OF PUBLICATION
1	The effects of uterine fundal pressure (Kristeller maneuver) on pelvic floor function after vaginal delivery <sup>28</sup>	Archives Gynecology Obstetrics, 2012	Sartore A, <i>et al.</i>	Follow-up study
2	Rotura uterina en gestante con cesárea anterior tras maniobra de Kristeller. Reporte de caso <sup>25</sup>	Revista Chilena de Obstetricia y Ginecología.2014	Redondo R, <i>et al.</i>	Case study
3	Morbilidad neonatal en el parto instrumentado: mención especial a la ventosa obstétrica <sup>30</sup>	Acta Pediátrica Española, 2007	AS Andrés, <i>et al.</i>	Literature review
4	La maniobra de Kristeller: revisión de las evidencias científicas <sup>22</sup>	Matronas Profesión, 2011	Díaz, C.R.	Integrative review
5	Intervenções obstétricas durante o trabalho de parto e parto em mulheres brasileiras de risco habitual <sup>23</sup>	Cadernos de Saúde Pública, 2014	Leal MC, <i>et al.</i>	Ecological study

Nº	TITLE OF PUBLICATION	YEAR/MAGAZINE	AUTHORS	TYPE OF PUBLICATION
6	Incontinência urinaria a los 6 meses del parto <sup>24</sup>	Medicina Clínica, 2013	Hernández, RRV, <i>et al.</i>	Follow-up study
7	Implementação de evidências científicas na assistência ao parto normal: estudo longitudinal <sup>26</sup>	Enfermagem em Foco, 2017	Santos RCS.	Longitudinal studt
8	Acute post-partum urinary retention: analysis of risk factors, a case-control study <sup>29</sup>	Archives of Gynecology and Obstetrics 2014	Pifarotti P, <i>et al.</i>	Retrospective case control study
9	Associated factors to urinary incontinence in women undergoing urodynamic testing <sup>27</sup>	Revista da Escola de Enfermagem da USP, 2016	Silva JCP, <i>et al.</i>	Cross-sectional study

**Table 1** - Risks for the woman and the child arising from the Kristeller Maneuver. Teresina - PI, Brazil, 2018.

- Risk of causing dysfunctions in the urinary system; <sup>23,28-29</sup>
- Loss of control during bowel movements and lacerations of the anal sphincter;
- Perineal trauma and loss of pelvic floor strength; <sup>22-27</sup>
- Risk of causing amniotic fluid embolism and lacerations of the anal sphincter; <sup>25</sup>
- Risk of epidural hemorrhage; <sup>30</sup>
- Cardiac changes in the newborn, asphyxia, hypoxemia, possible complications in his skeleton, in addition to Caput succaneum; <sup>22-26,30</sup>

Some women may still be subjected to Kristeller's maneuver in unregulated obstetric institutions, many of these sites have not yet properly documented the occurrence of the maneuver during labor. This makes it difficult to access data on the number of patients undergoing the maneuver and what complications occur after its use, in addition to hurting the patient's rights since every intervention must be reported in the patient's medical record, especially the one that causes parturient pain and discomfort during its performance.<sup>22</sup>

This maneuver offers risks and affects the woman's integrity, as it causes pain during its performance, as described by them. In addition, the maneuver initiates a reproductive history, in which there is scarring and loss of integrity of the perineal and uterine tissue. There are reports of an increase in instrumental deliveries, in view of the risk of causing abnormalities in the fetal heart rhythm, in addition to hypoxemia and asphyxia.<sup>22-26</sup>

This compressive technique is considered harmful to obstetric care, considering that it is considered an invasive procedure and is related to the inadequate conduct of labor, which causes complications, such as perineal trauma for the mother, so it must be thus avoided.<sup>27</sup> Despite this, there are still those who believe that this practice contributes to accelerate the expulsive period of women in childbirth, being still widely used as an obstetric maneuver. The practice of this practice, in a common way, is an activity that must be abandoned. It is also noticed that this maneuver is applied with a greater proportion in women without companions during labor.<sup>26</sup>

A study that compared two groups of parturients, one subjected to the Kristeller maneuver, while the other did not suffer any uterine compression, showed, mainly, an increase in the number of episiotomies and epidural analgesia

in women who underwent this technique of compression. In addition, other impacts were more frequent in the presence of this maneuver, among them: dyspareunia, perineal pain, in addition to possible lacerations in this region, anal incontinence, overactive bladder and impulse incontinence. The same study found no functional changes in the pelvic floor.<sup>28</sup>

Another worrying situation regarding the performance of this technique would be the risk of injury to the perineum that the maneuver offers when performed on women who underwent cesarean section. Uterine rupture accounts for approximately 5% of all maternal deaths and 2.6 to 6% of neonatal mortality each year. If this maneuver was performed on a pregnant woman with segmental uterine scarring, there is a possibility of uterine rupture.<sup>24</sup>

The performance of this compressive method allows a risk in the development of urinary incontinence which, depending on its intensity, can remain for 3 to 6 months from the end of delivery. When compared to other interventions during childbirth, such as, for example, episiotomy or age under 16 years old, this procedure makes the pregnant woman 3.04 times more susceptible to this manifestation. In deliveries without dystocia or using this compression technique, there is less risk for this problem, requiring prenatal consultations for guidance on these complications in the puerperium, in addition to encouraging normal delivery.<sup>23</sup>

Postpartum urinary retention has a multifactorial cause and a Kristeller technique is a risk factor for this problem. The increase in abdominal pressure during the application of this technique makes the pelvic and prone nerves susceptible to damage, compromising sensory and motor functions in this region. The loss of control by the nervous system in the contraction of the detrusor muscle of the bladder,

in addition to implications for urethral relaxation lead to urinary retention.<sup>29</sup>

This procedure is considered, therefore, one of the most controversial techniques that is used in the second stage of the work, given the maternal and fetal complications that can cause embolism of the amniotic fluid, lacerations of the anal sphincter, thus, it needs further studies that attest to the direct harm from its use.<sup>25</sup> In Brazil, it was seen that this maneuver has a greater occurrence in the Midwest Region, in elderly and primiparous women, in addition to being present in 37% of vaginal births, which portrays a problem in prenatal care, which if done with good guidance and with an adequate number of consultations it will be important to guide women about obstetric violence, in addition to other factors.<sup>22,24</sup>

Regarding the conceptus, Kristeller's maneuver can lead mainly to Caput succaneum, characterized by being a swelling of the newborn's scalp, cephalohematomas due to the rhythmic force used in this region, in addition to eye problems such as retinal hemorrhage. In addition, another possible consequence is epidural hemorrhage. This lesion is located between the bone and the periosteum, inside the skull and always has a traumatic origin. Despite being a rare neonatal lesion, it is fatal since it is one of the causes of neonatal morbidity associated with childbirth.<sup>30</sup>

Obstetric practices are increasingly being used during childbirth, so they must be performed carefully, and some must be abolished, such as the Kristeller maneuver. This practice can have consequences for the newborn and for the mother, avoiding the obstetrics objective of providing a delivery that culminates in a healthy mother and child.

Based on the reading of the selected platforms, it was not possible to identify any benefit to the woman or the conceptus in the application of this maneuver, with strong recommendations for its non-use due to its ineffectiveness and potential risk.<sup>25, 28</sup>

## FINAL CONSIDERATIONS

From this study it was possible to identify the harms in the practice of the Kristeller maneuver, in addition to finding no benefit from this technique. The performance of this procedure has no evidence that will benefit the woman or the fetus during labor and the puerperium. On the contrary, its performance will bring a reproductive history marked by traumas, where its main manifestations include: loss of perineal and uterine tissue, possible uterine inversion risk of urinary incontinence, psychological impacts on the puerperal woman, in addition to impacts on the fetus marked by cephalohematomas and fractures in the uterus clavicle.

In addition, it could be seen that this practice is widespread in an institution of obstetric value. This is justified by the lack of updating of professionals in these places on the theme, in addition to being considered a "vice" by some obstetricians during the delivery. Thereafter, it is necessary to restructure these services and train professionals

to reformulate the approach of this maneuver, in order to provide a better quality of assistance to users, ensuring protection for them and the conceptus.

In this sense, this study will contribute to updating professionals on this topic, once they can identify the possible complications for the parturient and the fetus will be able to rethink during the possibility of carrying out the Kristeller maneuver. It is worth mentioning the difficulty found in the literature to obtain publications related to the theme, a situation that makes the research relevant and current, given the constant movements that aim at humanized childbirth. Therefore, new qualitative studies are needed to evaluate the experiences of nursing professionals in relation to this maneuver, as well as possible alternatives to it have been observed in maternity hospitals.

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Received in: 16/01/2019

Required revisions: 30/07/2019

Approved in: 31/07/2019

Published in: 15/03/2021

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**Disclosure:** The authors claim to have no conflict of interest.