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A Literature Review of Outcomes Related to Delayed and Spontaneous Pushing in Women During the Second Stage of Labor

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PATIENT CARE ISSUE

- ❖ 267 births each minute throughout the world¹²
- ❖ Two different pushing methods:
 - ❖ *Delayed & spontaneous*: withhold pushing after full dilation until irresistible urge¹⁰
 - ❖ *Immediate*: push as soon as completely dilated^{4, 15}
- ❖ Inconsistencies and gaps in research regarding the two methods of pushing in terms of maternal and fetal outcomes⁴

4. Chang, RN, CNM, MS, S. C., Chou, MD, M. M., Lin, PhD, K. C., Lin, RN, MS, L. C., Lin, RN, CNM, MS, Y. L., & Kuo, RN, CNM, PhD, S. C. (2011). Effects of pushing intervention on pain, fatigue and birthing experiences among Taiwanese women during the second stage of labour. *Midwifery*, Vol. 27, 825-831.

10. Lai, M. L., Lin, K. C., Li, H. Y., Shey, K. S., & Gau, M. L. (2009). Effects of delayed pushing during the second stage of labor on postpartum fatigue and birth outcomes in nulliparous women. *Journal of Nursing Research*, Vol. 17(No. 1), 62-71.

12. Roberts, S. (2010, July 29). Population research presents a sobering prognosis. *The New York Times*. Retrieved from http://www.nytimes.com/2010/07/30/world/30population.html?_r=2.

15. Yildirim, PhD, G., & Beji, MD, N. K. (2008). Effects of pushing techniques in birth on mother and fetus: A randomized study. *Birth*, Vol. 35, 25-30.

EVIDENCE-BASED PRACTICE QUESTION

Is delayed and spontaneous pushing in the second stage of labor the safest and most effective method?

Population – hospitalized women in labor

Interventions – making the labor & delivery process as comfortable and problem-free as possible

Comparison – delayed & spontaneous vs. immediate pushing

Outcomes – length of labor, maternal pain and fatigue, instrument assistance, newborn outcomes, and overall experience⁶

6. Higgins, J. P., & Green, S. (2008). *Cochrane handbook for systematic reviews of interventions*: Cochrane book series. West Sussex, UK: The Cochrane Collaboration and John Wiley & Sons.

REGISTERED NURSE INTERVIEW

Kettering Medical Center Labor & Delivery RN interviewed but unaware of hospital policy:

- ❖ Nulliparas withhold pushing until urge is felt
- ❖ Multiparas & women with epidurals push at complete dilation

Kettering Medical Center policy:

- ❖ Upright position using delayed or non-directed pushing techniques as appropriate⁹

9. Kettering Health Network. (2010). *Policy: care of the labor patient*. Kettering, OH.

METHODS

- ❖ Exhausted six databases:
 - ❖ AHRQ, CINAHL, CU Library, Medline, NGC, & PubMed
- ❖ Key words searched:
 - ❖ *Delayed pushing, spontaneous pushing, vaginal deliveries, pushing childbirth, vaginal birth, second stage of labor, pushing, childbirth, nursing, vaginal pushing*
- ❖ Inclusion Criteria:
 - ❖ Research within past 5 years, vaginal deliveries during second stage of labor, and focused on pushing techniques
- ❖ Exclusion Criteria:
 - ❖ Non-English articles, alternative methods of birthing assistance

RESULTS

Database Searched	Date of Search	Search Strategy	Number of Articles found	Percentage of Articles Relevant
CINAHL	9/20/12, 9/25/12	Delayed Pushing	2	100%
		Spontaneous Pushing AND Delayed Pushing AND Vaginal Deliveries	178	2.8%
		Vaginal Birth AND Delayed Pushing AND Second Stage of Labor	172	2.9%
		Spontaneous Pushing AND Delayed Pushing AND Vaginal Deliveries	28	17.8% (repeated articles)
		Spontaneous Pushing AND Vaginal Delivery AND Second Stage of Labor	14	28.6%
PubMed	9/15/12, 9/20/12	Spontaneous Pushing AND Vaginal Delivery AND Second Stage of Labor	12	33.3%
		Spontaneous Pushing AND Vaginal Delivery AND Delayed Pushing	4	25%
		Spontaneous Pushing AND Vaginal Delivery AND Second Stage of Labor	8	62.5%
		Spontaneous Pushing AND Vaginal Delivery AND Delayed Pushing AND 2 nd Stage of Labor	3	33.3%
		Second Stage Labor AND Delayed Pushing	17	0% (repeated articles)
AHRQ	9/4/12, 9/19/12, 9/27/12	Second Stage Labor AND Spontaneous Pushing	17	0% (repeated articles)
		Spontaneous Pushing	16	31.3%
		Delayed Pushing AND Spontaneous AND Nursing	8	0% (repeated articles)
		Delayed Pushing	19	10.5%
		Spontaneous Pushing	7	14.3%
NGC	9/23/12, 9/27/12	Vaginal Pushing	5	0% (repeated articles)
		Second Stage of Labor	30	6.7%
		Delayed Pushing AND Vaginal Delivery	11	9.1%
		Spontaneous Pushing AND Vaginal Delivery	22	4.5%
		Second Stage of Labor AND Delayed Pushing	48	4.2%
CU Library	09/15/12	Second Stage of Labor AND Spontaneous Pushing	47	2.1%
		Delayed Pushing AND Second Stage of Labor AND 2008-2012	28	7.1%
		Spontaneous Pushing AND Second Stage of Labor AND 2008-2012	10	20%
		Delayed Pushing AND Vaginal Delivery AND 2008-2012	13	0% (repeated articles)
		Delayed Pushing AND Spontaneous Pushing AND 2008-2012	4	0% (repeated articles)
MedLine	09/24/12	Delayed Pushing AND Second Stage of Labor AND 2008-2012	28	7.1%
		Spontaneous Pushing AND Second Stage of Labor AND 2008-2012	10	20%

SYNTHESIS OF EVIDENCE

- ❖ Literature review of eight research articles provided seven findings related to delayed and spontaneous pushing
 - ❖ Lower rate of instrument-assisted delivery
 - ❖ 3/8 evaluated^{3, 10, 14}
 - ❖ 2/8 supported^{3, 10}
 - ❖ Shortened second stage of labor
 - ❖ 8/8 evaluated^{3, 4, 5, 7, 8, 10, 14, 15}
 - ❖ 8/8 supported^{3, 4, 5, 7, 8, 10, 14, 15}
 - ❖ More positive labor experience
 - ❖ 3/8 evaluated^{4, 5, 15}
 - ❖ 2/8 supported^{4, 15}
 - ❖ Improved newborn outcomes
 - ❖ 4/8 evaluated^{3, 5, 8, 15}
 - ❖ 0/8 supported
 - ❖ Decreased maternal fatigue
 - ❖ 6/8 evaluated^{3, 4, 5, 8, 10, 14}
 - ❖ 1/8 supported⁴
 - ❖ Decreased maternal pain
 - ❖ 1/8 evaluated⁴
 - ❖ 1/8 supported⁴
 - ❖ Higher Apgar score
 - ❖ 3/8 evaluated^{5, 8, 15}
 - ❖ 1/8 supported⁵

3. Brancato, R., Church, S., & Stone, P. (2008). A meta-analysis of passive descent versus immediate pushing in nulliparous women with epidural analgesia in the second stage of labor. *JOGNN: Journal Of Obstetric, Gynecologic & Neonatal Nursing*, 37(1), 4-12. doi:10.1111/j.1552-6909.2007.00205.x

4. Chang, RN, CNM, MS, S. C., Chou, MD, M. M., Lin, PhD, K. C., Lin, RN, MS, L. C., Lin, RN, CNM, MS, Y. L., & Kuo, RN, CNM, PhD, S. C. (2011). Effects of pushing intervention on pain, fatigue and birthing experiences among Taiwanese women during the second stage of labour. *Midwifery*, Vol. 27, 825-831.

5. Gillesby, E., Burns, S., Dempsey, A., Shirley, K., Mogensen, K., Naylor, K., ... & Whelan, B. (2010). Comparison of delayed versus immediate pushing during second stage of labor for nulliparous women with epidural analgesia. *JOGNN*, 39(6), 635-644. doi:10.1111/j.1552-6909.2010.01195.x

7. Jahdi, F., Shahnazari, M., Khashanian, M., Farahani, M. A., & Haghani, H. (2011). A randomized control trial comparing the physiological and directed pushing on the duration of the second stage of labor, the mode of delivery and apgar score. *International Journal of Nursing and Midwifery*, 3(5), 55-59. Retrieved from <http://www.academicjournals.org/ijnm>.

8. Kelly, M., Johnson, E., Lee, V., Massey, L., Purser, D., & Ring, K. (2010). Delayed versus immediate pushing in second stage of labor. *Maternal and Child Nursing*, 35(2), 81-88.

10. Lai, M. L., Lin, K. C., Li, H. Y., Shey, K. S., & Gau, M. L. (2009). Effects of delayed pushing during the second stage of labor on postpartum fatigue and birth outcomes in nulliparous women. *Journal of Nursing Research*, Vol. 17(No. 1), 62-71.

14. Tuuli, M., Frey, H., Odibo, A., Mascones, G., & Cahill, A. (2012). Immediate compared with delayed pushing in the second stage of labor: A systematic review and meta-analysis. *American College of Obstetricians & Gynecologists*, 120 (3), 660-668.

15. Yildirim, PhD, G., & Beji, MD, N. K. (2008). Effects of pushing techniques in birth on mother and fetus: A randomized study. *Birth*, Vol. 35, 25-30.

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

- ❖ Sufficient research supports delayed and spontaneous pushing
 - ❖ Decreases length of second stage of labor
- ❖ Recommendation to educate women about benefits of delayed and spontaneous pushing during the first stage of labor
- ❖ Further research recommended regarding maternal pain levels and fatigue, Apgar scores, labor experiences, newborn outcomes, and instrument-assisted deliveries as they relate to delayed and spontaneous pushing

LIMITATIONS

- ❖ Multiple countries studied with possible differences in standards of routine vaginal delivery
 - ❖ Canada, Europe, Iran, Taiwan, and United States
- ❖ Lack of outcome overlap between studies