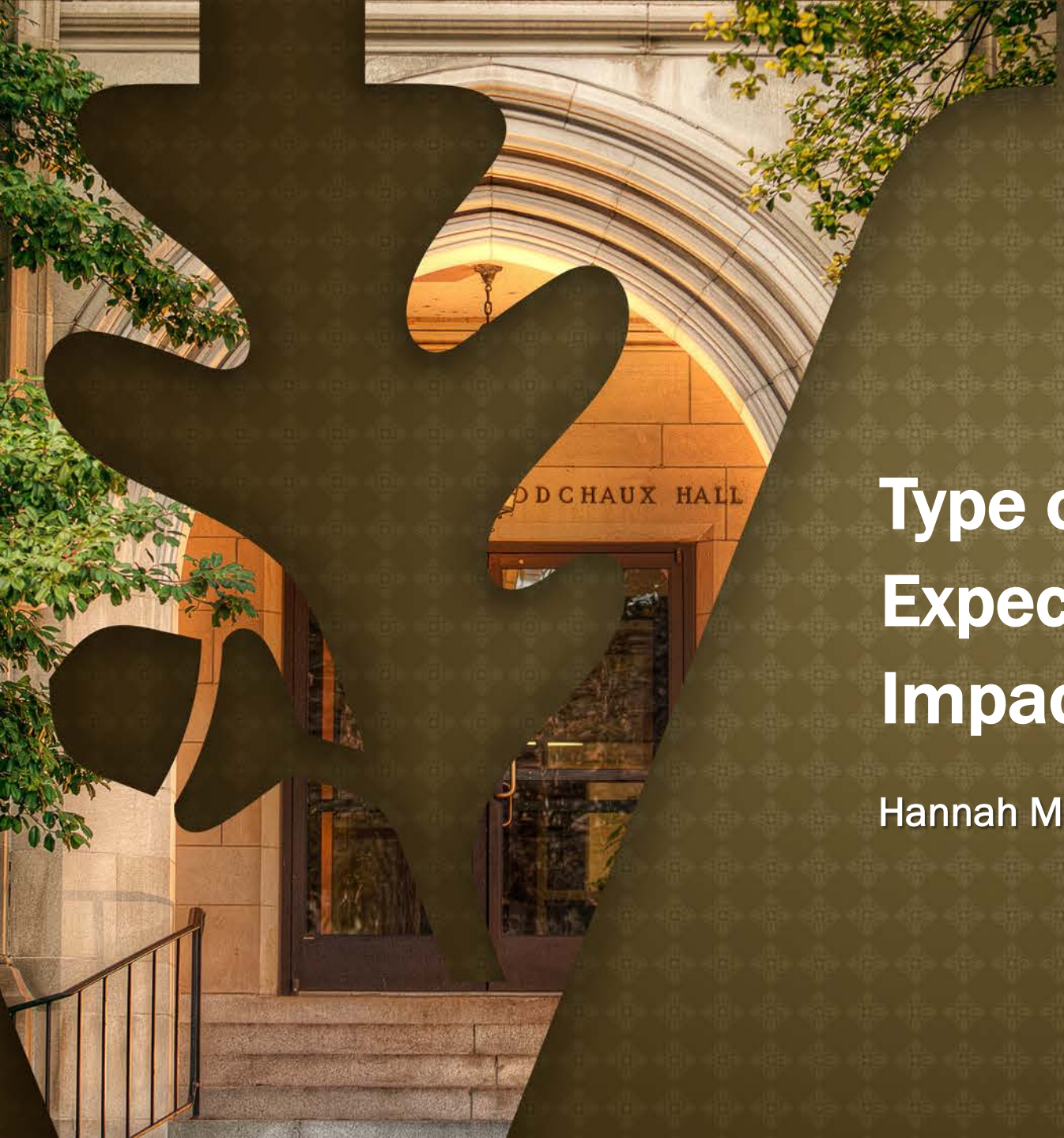

Type of Prenatal Education for Expectant Mothers and its Impact on Birthing Outcomes

Hannah Mehochko, MSN, FNP-BC

Introduction

- Patient education can be beneficial in several ways
- Different methods of education should be explored as well
- The impact of patient education on birth outcomes should be explored
  - More importantly, if method of education impacts patient outcomes

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Introduction

- Birth outcomes
  - Internationally, the United States (U.S.) is already behind
  - Increased age and minority groups are more affected by this problem
- Patient education can affect patient outcomes
  - Patient outcomes are improved
  - Patient-provider relationships are improved
  - Healthcare costs are decreased
- Due to the COVID-19 pandemic, education had to be modified
  - Virtual education became commonplace
  - Virtual education can be effective and useful for patient education

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Problem Statement

- Is there a difference between outcomes for patients who attend in-person versus virtual education?
- Currently, virtual prenatal birth classes are being offered due to COVID-19
- The focus of the problem is education
- The problem was identified due to adaptations that had to be made due to COVID-19.
- Parameter of the problem: practice-wide
  - Addressing the population that the practice cares for

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Purpose and Objectives

- Purpose: to evaluate the impact of childbirth classes during the prenatal period
- Outcomes will be compared between those who attended in-person birth classes and those who attended birth classes virtually
- Objectives:
  - Assess attendance rates
  - Evaluate several outcomes comparing patients who attended in-person versus virtual prenatal birth classes

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Background

- Differences between birth outcomes for patient who attended in-person versus virtual classes were compared
- Observed patients through the The Vanderbilt Midwives Melrose Clinic
- Project was necessary due to changes that had to be made due to the COVID-19 pandemic
- Hypothetically, virtual classes should lead to no differences in patient outcomes

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Concepts

- Patient Education
  - The American Academy of Family Physicians definition
  - Importance of patient education
- Maternal Health
  - World Health Organization definition
  - Improving maternal health is crucial
- Childbirth
  - Meriam-Webster Dictionary definition

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Framework

- Adaptation Model
  - Presented by Callista Roy
  - Four Different Categories of Behaviors
- Behaviors
  - Physiological-physical
  - Self-concept-group identity
  - Role function mode
  - Interdependence mode
- Framework application to the project
  - Patient education as a mode of adaptation to the birthing process
  - Self-concept-identity mode

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Synthesis of the Evidence: Evidence Search

- PICOT Question: Is there a difference in birth outcomes when comparing expectant mothers who attend an in-person birth class versus mothers who attend a virtual prenatal birth class?
- Search terms
- Databases utilized for literature research
- Inclusion/Exclusion criteria

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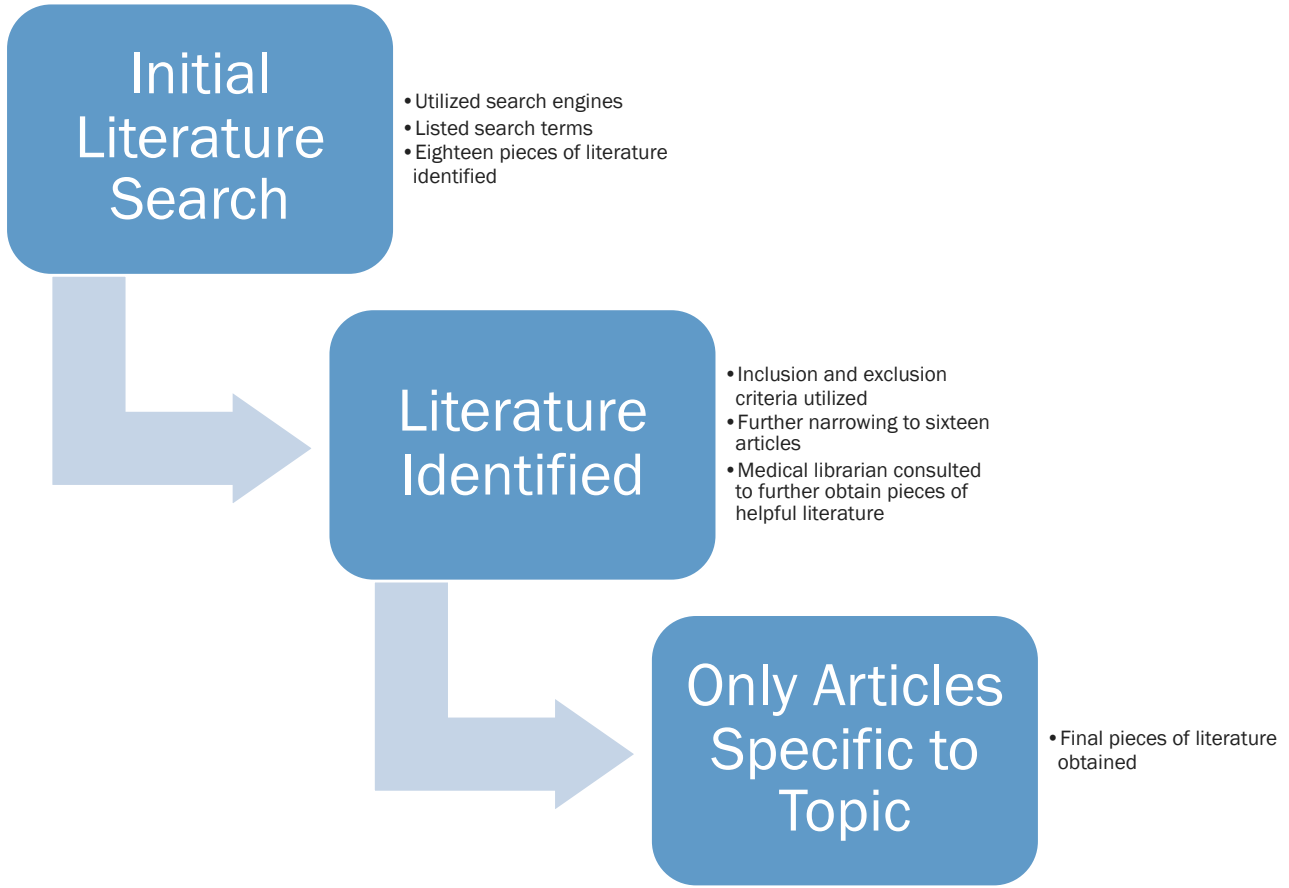
Synthesis of the Evidence



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Synthesis of the Evidence

- Benefits of Patient Education
  - Impact on chronic illness management
    - Asthma Patients
    - Patient with diabetes
  - Benefits of education for maternal and fetal health

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Synthesis of the Evidence

- Mode of Education
  - Virtual education versus in-person education
  - Obstructive lung disease patients
    - Inhaler education in-person versus virtually

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Synthesis of the Evidence

- Breastfeeding Outcomes
  - Post-partum breastfeeding rates related to patient education
  - Increased breastfeeding rates following patient education

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Synthesis of the Evidence

- Birth Type
  - Epidural Usage and various medical interventions: artificial rupture of membranes, oxytocin augmentation, labor induction
    - Patient education found to be useful in reducing both
  - Cesarean Section (C-section) versus vaginal deliveries
    - Patient education not found to directly decrease C-sections

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Weaknesses/Gaps in the Evidence

- Gaps in Literature
  - Lack of literature related to prenatal education
  - Lack of literature reporting several different birth outcomes
  - Lack of literature about virtual education

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Methods

- Project Design
  - Practice-base inquiry
- Setting
  - Midwife practice
    - Part of the Vanderbilt Medical Center
    - Nurse midwifery led practice
    - Reported majority vaginal births (81.2%) versus C-sections (18.8%) in 2019
- Participants
  - Women who attended prenatal classes over two different time periods, in order to compare virtual and in-person participants
  - Ages: 18-39
  - Attended as well as completed classes

Resources

- No monetary resources are needed
- Funding for Epic access/training provided through Vanderbilt Medical Center
- Time was the biggest resource needed

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Methods

- Data Collection
  - Outcomes observed: Type of birth, medicated versus unmedicated births, type of pain relief utilized, breast feeding rates, and five-minute APGAR scores
    - Gravity and parity, age of the mothers, and number of classes attended were also observed
  - A survey in Redcap was utilized as a data collection tool.
    - Allowed for de-identified outcomes to be collected and quantified
    - The approach to data collection:
      - Survey development
      - Retrospective chart review
      - Data analysis

Confidential

Prenatal Education Data Collection

Please complete the survey below.

Thank you!

1)	Gravity/Parity?	_____
2)	Number of Prenatal Classes Attended	_____
3)	Type Of Classes Attended?	◯ In Person ◯ Virtual
4)	Pain Control Methods	☐ Epidural ☐ IV Pain Medication ☐ Oral ☐ None
5)	Breast Feeding 24 Hours Postpartum?	◯ Yes ◯ No
6)	Breast Feeding 48 hours postpartum?	◯ Yes ◯ No
7)	Postpartum Depression Screening Score (Inpatient)	_____
8)	Postpartum Depression Screening Score (2 weeks postpartum)	_____
9)	Postpartum Depression Screening Score (6 weeks postpartum)	_____
10)	Apgar Score	_____

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Methods

- Data was collected over a continual six-hour period
  - Increased consistency in collection
  - The two groups of participants were developed from class lists from two separate three-month time periods
    - First time period:
      - In-person class participants
      - Attended between November 2019 and January 2020
    - Second time period:
      - The virtual class participants
      - Attended classes between January 2021 and March of 2021

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Analysis

- Data was analyzed by quantifying each result in each comparison group
  - Outliers and trends in the data were identified
  - Outcome was observed separately for the two groups
- Inconsistencies in the data were noted
- Data was compared between the groups
  - Relation to gravity/parity or number of classes attended was also observed.

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Results: Patient Demographics

- 33 total participants (N=33)
  - 15 in-person class participants (n=15)
  - 18 virtual class participants (n=18)
- Ages 18-39
- Comparable gravity/parity

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Results: Type of Birth

- Total Participants (N=33)
  - Nine patients had C-sections (27%)
  - One assisted vaginal delivery
  - 23 remaining participants had spontaneous vaginal deliveries (69%)
- In-person class participants (n=15)
  - Five participants had a C-section (33%)
  - Ten participants had spontaneous vaginal deliveries (67%)
- Virtual class participants (n=18)
  - Four participants had a C-section (22%)
  - One assisted vaginal delivery
  - Remaining 13 participants had spontaneous vaginal deliveries (72%)

Results: Breastfeeding

- Majority of all participants breastfeeding by postpartum day two
- Only one outlier not breastfeeding for personal reasons
  - In-person class participant

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Results: Pain Control

- Total Participants (N=33)
  - Three participants did not have documented pain control (9%)
    - These were all from the virtual class group
  - Two participants utilized nitrous oxide (6%)
    - One of these participants also had an epidural
    - Both of these participants were from the virtual class group
  - 29 total participants had epidural analgesic (88%)
    - All in-person class participants had an epidural
    - The majority (77%) of virtual class attendees had an epidural as well

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Results: APGAR Score

- Majority with a five-minute APGAR score of 9
  - Only one outlier with score of 8

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Results: Relating to Objectives

- Relating back to purpose and objectives
  - Outcomes support the original purpose and objectives
    - Attendance rates were assessed
    - Birth outcomes between the two comparison groups were observes and compared

Discussion

- No significant difference noted across the measures between the two comparison groups
- Type of class attended does not affect outcomes
- Majority of patients across both groups had:
  - Vaginal delivery
  - Breastfeeding by postpartum day two
  - APGAR score of nine

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Discussion: Type of Birth

- Majority of patients across both groups had a vaginal delivery
- No correlation between type of birth and number of classes attended
- Low occurrence of C-sections indicates the benefit of prenatal education
  - This agrees with some of the literature in the review

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Discussion: Breastfeeding

- Majority of participants across both groups were breastfeeding at postpartum day two
- Prenatal education can have a positive impact on breastfeeding
  - Aligning with the literature review

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Discussion: Pain Control

- The majority of patients across the groups (88%) had epidural analgesic
  - All in-person class participants had an epidural
- This does not correlate with the literature review
  - May be due to difference in prenatal education material/curriculum

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Discussion: APGAR Score

- Majority of infants had an APGAR score of 9
  - Only one outlier had a score of 8

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Discussion: Limitations and Future Implications

- Limitations
  - Sample Size
  - Restrictions from the COVID-19 pandemic
  - Inability to observe postpartum depression scores
- Future Implications
  - Further research needed looking into the impact of patient education on birth outcomes
  - Continued observation and comparison of in-person versus virtual education on a larger scale
  - Impact of patient education on postpartum depression
  - Impact of the COVID-19 pandemic on birth outcomes

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Conclusion

- Importance of patient education
- Patient education can be crucial in improving patient outcomes
- Virtual education does not change quality of education
- Crucial to continue to provide patient education in all circumstances

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