The Impact of Prenatal Infant Immunization Education on Maternal Knowledge, Attitudes, Intention and Behavior of Vaccination

Purpose: The purpose of this quality improvement project was to increase maternal knowledge about infant vaccines in prenatal period and measure intention to vaccinate before and after education.

Specific Aims: 1) Identify mothers’ source of vaccine information, 2) describe mothers’ attitudes and subjective norms about vaccines 3) measure knowledge change and intention to vaccinate before and after education about infant immunization and 4) assess infant vaccination status at 2 months of age.

Background: Thirty percent of American children under the age of two are partially vaccinated according to the recommended schedule. One in ten parents are intentionally delaying vaccines, thus these children are at risk for vaccine-preventable infections. Parental vaccine concerns and misinformation have been cited as reasons for declining vaccine rates. Furthermore, the lack of time spent discussing vaccine risks/benefits with a health care provider (HCP) is a contributing factor to reports that mothers state they do not have adequate information about infant vaccines at the time of the vaccine visit.

Innovation: The prenatal period has been identified in the literature as a time to introduce vaccine education to mothers, as this is the time mothers are preparing for their newborns. However, few studies have piloted this idea to quantify knowledge change. This project evaluated the outcome of pre-natal infant immunization education in two settings, a baby-care class and county health department maternal child health program.

Procedures: This project utilized a pre-post design using a questionnaire before and after pre-natal vaccine educational session. Centers for Disease Control infant vaccine schedules and parental vaccine educational books were used for the session. These materials were discussed on a one-on-one basis with mothers. Follow-up at age 2 months assessed vaccine uptake.

Outcomes: A total of 13 mothers participated in the project. Most participants were primigravida (69.2%) and were between 26-32 years of age (53.8%). Most women listed on pre and post questionnaire that a HCP was the primary source of vaccine information. The attitude score from to pre to post test (11.2 ± 4.2 vs. 9.4 ± 3.4) indicated a more favorable attitude; norm score (10.0± 4.0 vs. 9.4 ± 3.4) also suggests more favorable norms related to vaccines. From pre-to-post the participants’ knowledge scores increased by 37.1%; the mean scores respectively were 51.7 (SD=26.1) to 88.8 (SD= 14.0). Also, 92.3% of mothers indicated intention to vaccinate on the pre/post questionnaires. Fifty-four percent of the participants completed the 2-month follow-up and indicated that their infant received the recommended 2-month vaccines.

Implications: Prenatal infant immunization education may help increase vaccination rates and decrease preventable infectious diseases. Anecdotally, mothers indicated that they prefer receiving this education in the prenatal period. This pilot project shows the feasibility a 10-15 minute infant vaccine educational session can increase mothers’ knowledge of vaccines.

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OBJECTIVES

Specific Aims:
1. Identify mothers’ source of vaccine information
2. Describe mothers’ attitudes and subjective norms about vaccines
3. Measure knowledge change and intention to vaccinate before and after vaccine education
4. Assess infant vaccination status at 2 months of age

METHODS

• Theory of Planned Behavior used to analyze maternal factors that contribute to vaccination decisions, such as attitudes and subjective norms 10

• Settings: Local academic urban hospital sponsored baby care basics class and with health department home care visits

• Design: Pre/post with prim investigator (PI) developed questionnaires

• Questionnaire based on TPB concepts and a survey from Wu et al. PI obtained permission

• Intervention: Baby Care Basics Class:
  - Mothers completed demographic/pre questionnaire
  - Mothers were given CDC materials
  - Attended 10-15 minute infant vaccine educational session
  - Post Questionnaire emailed via Qualtrics

• Health Department:
  - PI attended home visits with health department nurses
  - Mothers completed demographics/pre questionnaire
  - One-on-one educational session
  - Post questionnaire completed after session
  - Follow-up: When infant was 2 months old, assessed vaccine uptake

• Measure knowledge change and intention to vaccinate before and after vaccine education

• Pre-to-post aggregate participants’ knowledge score increased by 37.1%. Mean scores respectively were 51.7 (SD = 26.1) to 88.8 (SD = 14.0) 3

• 12 mothers indicated intention to vaccinate on pre/post questionnaire

FINDINGS

• Descriptive statistics (mean, percentage, frequency and standard deviation [SD]) were used to generate results

• Eight mothers (62%) were recruited from the baby-care class and 5 mothers (38%) from the health department

• Setting: Most participating primigravida (69.2%) and between 26-32 years of age (53.8%)

• Caucasian Race (53.8%)

• Post graduate with degree (46.2 %)

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• Income <$59,999 (53.9%)

• Source: Bareis et al, 2015

FINDINGS CONT.

• Assess infant vaccination status at 2 months of age. 7

• Seven (54%) mothers completed the 2-month follow-up; all indicated that their infant received the recommended 2-month vaccines

• HCP was the primary source of vaccine information 7

• Majority (84.6%) listed on pre-questionnaire that a HCP was the primary source of vaccine information

• Mothers’ attitudes and subjective norms about vaccines

• The mean attitude score and subjective norm score respectively on the pre-post questionnaire was 11.2 (SD = 2.0) compared to 9.4 (SD = 3.4) and 10.8 (SD = 4.0) (compared to 9.4) (SD = 3.4)

• It is important to note that the decreased value on post-questionnaire indicated a more favorable attitude and subjective norm towards vaccines

• Statistical significance was performed for each item using paired t-test and independent sample t-test

• Questionnaire was designed to have 7 items per construct.

• Cronbach’s alpha: 0.782 = moderate

• Compare pre and post questionnaire, question scores indicated significance change measured.

• Validated measure

• Pre/post intervention in the population of interest

• The measures were consistent with the theoretical framework, TPB

CONCLUSIONS

• Project shows that an infant vaccine educational session can increase mothers’ knowledge of vaccines and support intention to vaccinate

REFERENCES


