Baby’s Best Shot … Or Not?

An adult-learning curriculum for pregnant first-time moms in Johns Creek, Ga., deciding whether to fully vaccinate their babies

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Vaccines

• Prevent illness and death from 14 diseases
  – Prevented an estimated 2 million child deaths worldwide in 2003 (WHO)

• Scientific studies shown to be very safe, and much safer than the diseases they prevent
  – Diseases come back when vaccination rates drop
  – Some too sick or young to be vaccinated, so need herd immunity
  – Not shown to cause autism
The Problem

- Vaccination rates below optimal levels
  - Exemptions
  - Misinformation from non-scientific sources
  - Use of logic and temporality to make vaccination-autism link
  - Popularized from bad science of British journal article, and has grown from there
  - Only 70.4% of 2-year-olds in Fulton County fully immunized
  - 2nd-lowest county/regional percentage in state of Georgia (almost 10% below state average)
    - Not all due to poverty
Purpose and goals

• Purpose
  – To help mothers make a scientifically informed decision on whether to fully vaccinate their infants, through the use of adult learning theory and methods

• Goals
  – Learners will formulate their own questions about child vaccination and decide how to seek and recognize reliable information to answer them.
  – Learners will find answers to their own questions about child vaccination.
  – Learners will apply the knowledge and skills gained in sessions 1 and 2 to simulated real-life vaccine situations.
Target audience

- Pregnant first-time mothers living in, working in, shopping in or otherwise spending time in Johns Creek, Fulton County, Ga.
  - White, high-income, married, college-educated mothers with big families (eventually)
  - Matches Omer et al’s findings on moms who don’t vaccinate being likely to have the above characteristics
  - Recruit in obgyn offices, Whole Foods
  - First-time mothers the most receptive to learning new facts
  - Seek advice from mom peers
  - Accustomed to finding own health info
    - But quality of info unclear
Needs assessment

• Prior vaccine interventions with other audiences and methods
  – Doctors and Problem-Based Learning
  – Parents with decision-making booklet with facts on vaccines and omission bias in mail
  – But no in-person curriculum targeting mothers with adult learning theory and methods
Adult learning theory

• Adults learn differently than children do
  – Need facilitators, not teachers
  – Prefer self-directed curricula
  – Experience $\rightarrow$ Peer learning opportunities
  – Prefer problem-centered learning
  – Motivated internally
Scope and sequence

- Three sessions over three weeks, averaging 75 minutes apiece
  - Session 1: Introduce and debate different methods of knowing and deciding
    - Authority, tenacity, logic, scientific method and its steps
    - Omission bias
    - Methods: Brief lecture, group discussion, self-reflection (essay)
  - Session 2: Find own answers to vaccination questions online
    - Applying what was learned and discussed in Session 1
    - Methods: Online search alone or in pairs, group discussion, self-reflection (essay)
  - Session 3: Role-play simulated real-life vaccine-related
    - Apply skills and knowledge from sessions 1 and 2
    - Methods: Role play, group discussion, self-reflection (essay)
Teaching techniques

• Based on adult learning theory
  – Small- and large-group discussion (all sessions)
  – Peer learning (all sessions)
  – Role play (Session 3)
  – Non-didactic presentation of new ideas within open discussion (Sessions 1 and 2)
  – Two-minute essays (all sessions)
Use of “Ways of Knowing and Deciding” handout

• To reinforce material verbally presented in Session 1
  – Four ways of knowing something, each with example and accompanying illustration
    • Authority
    • Tenacity
    • Logic
      – If drank milk right before had allergic reaction, allergic reaction must be due to the milk. But what if you didn’t realize a bee had also stung you at the same time?
    • Scientific method
      – Omission bias and decision-making
      – Learners guided in discussion of benefits and downsides, and truth, of each
      – Connected to vaccine decision? How?
Ways of Knowing and Deciding

Four ways of knowing something or getting information:

1. Authority
   - Believing something because an authority figure says it’s true
   Examples: Knowledge from teachers, priests or ministers, parents

2. Tenacity
   - Believing something out of habit or due to tradition
   Example: “Feed a cold, starve a fever”

3. Logic
   - Believing that time or other simple “if-then” associations that make sense mean that one thing caused or led to another
   Example: If you drank milk right before you had an allergic reaction, the allergic reaction must be due to the milk. But what if you didn’t realize a bee had also stung you at the same time?

4. Scientific method
   - Believing information after it has been tested through a series of steps
   Example: FDA drug testing

Omission bias:
- Judgment that harm from not doing something is less bad than harm from doing something
Example: “I might give my teenager the idea to abuse drugs by talking to her about drug abuse the wrong way, so I just won’t say anything”
Evaluation plan

• Level 1 (Reaction): Formative focus groups with community moms, and summative paper-pencil surveys with participants
  • What need to learn to help you decide? (formative)
  • What was the most helpful? What would do differently? (summative)
  • Qualities of facilitator? Lesson time/location/start date/frequency? (both)

• Level 2 (Learning): Pre- and post-curriculum participant phone surveys
  • Immediate post-test, 6-month post-test, 15-month post-test, 2-year, 3-month post-test

• Level 3 (Behavior): Post-curriculum phone surveys of each learners’ infant vaccination-related behavior
  • Based on infant vaccination intervals
    – 3 months, 7 months, 13 months, 19 months and 25 months postpartum

• Level 4 (Results): Obtain existing epidemiologic info, or do cross-sectional survey, in city of Johns Creek examining
  • Percent of children under age 2 fully vaccinated pre- and post-curriculum (1 year before and after, 2 years before and after)
  • Level of vaccine-preventable disease in children under age 2 pre- and post-curriculum (1 year before and after, 2 years before and after)
Thank you!

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