“Worldviews” Shape Parents’ Approach to Vaccinating Their Children

Washington, D.C. – New research suggests that a person’s cultural “worldview” helps explain much of the opposition to vaccination evident in the United States despite strenuous efforts by public health officials to communicate their message that immunizing children is necessary and safe. This study reveals that the vaccine controversy does not depend just on a lack of education about vaccine-related scientific knowledge. Differences in perceived benefits and risks that arise from individuals’ values and beliefs also are key.

The study finds that individuals who have a “hierarchical” worldview see the greatest benefits and fewest risks to vaccination. In contrast, those who have a “fatalistic” orientation see the fewest benefits compared to the risks of vaccination. Understanding the cultural bases of perceptions about vaccines may help health officials better communicate with different groups about vaccine risk and protect communities.

Recently, there has been deepening concern about the resurgence of several preventable contagious diseases in the United States such as whooping cough and measles. With 41,000 cases reported, 2012 was a record year for whooping cough. In 2011, 222 measles cases and 17 measles outbreaks were reported. In certain areas of the United States, vaccination rates are too low to protect the community as a whole. This leaves unvaccinated newborns vulnerable to serious infections, according to Dr. Geoboo Song’s study “Understanding Public Perceptions of Benefits and Risks of Childhood Vaccinations in the United States.” The research was recently published online in the Society of Risk Analysis’ journal Risk Analysis. Dr. Song is an assistant professor in the political science department at the University of Arkansas.

Dr. Song, through a collaborative effort with Dr. Hank Jenkins-Smith and Dr. Carol Silva, at the University of Oklahoma, surveyed 1,213 American adults to determine what influences their perceptions of the risks and benefits of vaccination. Respondents were asked about demographic and other factors, such as their perceptions about disease prevalence, general trust of health professionals, and knowledge about vaccines. Dr. Song also assessed respondents’ cultural orientations. According to “grid-group cultural theory,” originally proposed by Dr. Mary Douglas and Dr. Aaron Wildavsky, people can be grouped into four cultural prototypes that describe the degree to which they believe their social interactions ought to be governed by societal institutions and group identity. Hierarchs and egalitarians prize group identity, but egalitarians tend to reject a stratified society controlled by rules, whereas the former prefers such social settings. Individualists are not accepting of societal authority or institutionalized coercion and have weak ties to organized groups. Fatalists also tend not to join groups, but they are submissive toward authority and enforcement mechanisms.
Experts and most of the U.S. population believe that childhood vaccines reduce infant mortality rates by preventing the spread of deadly disease. It also is widely accepted by health professionals and the general population that the risk of serious side effects is very low. Opponents of vaccination, however, argue that vaccines are neither necessary nor safe. They contend that most of the diseases that vaccines target have for the most part disappeared in the United States. In addition, there has been concern about vaccine safety because of toxins such as aluminum and mercury. The mercury-based preservative thimerosal was once present in some vaccines. A possible link between vaccines and autism largely has been discredited by the scientific community but still is widely cited by anti-vaccine activists. As an alternative, those opposed to vaccination have advocated for an “organic” approach by which children develop a natural immunity to illnesses.

Dr. Song explored the factors that explain such different attitudes to vaccines. Perceptions about the value of childhood vaccinations depend on a balance of perceived benefits and risks. The benefits and risks can apply to individuals or the society as a whole. The major public health benefit of childhood vaccination is the prevention of epidemics. For the individual child, vaccines protect against the risk of contracting dangerous illnesses. The risk for the child is an adverse vaccine reaction, which in extremely rare cases can be serious.

The research confirmed past work that indicated that people who trust health care professionals more and have greater knowledge about vaccines perceive higher benefits and lower risks from vaccinations. As other researchers have shown, older, more educated and more affluent people believed in greater benefits and fewer risks from vaccines. This study provides insight into the role of cultural orientation in forming people’s conceptions of the danger associated with vaccinations. Hierarchists and fatalists represented the extremes of perceived risks and benefits, with strong egalitarians and individualists falling between the two groups: egalitarians perceived a higher benefit-risk ratio for vaccination than individualists.

All 50 states require that children receive the federally recommended vaccinations before attending school, but all of the states allow medical exceptions. Most states also grant religious exemptions, and almost half of the states permit exemptions on philosophical grounds. The majority of the parents who choose not to vaccinate their children state that they do so for religious and philosophical reasons.

To date, public health authorities have focused on sharing high-quality information between health experts and the general public. Dr. Song suggests that government health officials consider related concepts from risk communication that affect the acceptance of new information by individuals, including: presenting information in a way that affirms an individuals’ worldview, enlisting experts from a variety of cultural backgrounds to communicate information, and customizing narratives to confirm culture-based biases.

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