Window or Mirror: Social Networks' Role in Immunization Decisions

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Parents' immunization decision-making is complex.¹ It can be influenced by perceptions of disease risk and vaccine effectiveness as well as external factors, such as school immunization policies and a health care providers' recommendation. Parents' immunization decisions are not always based on rational logic that incorporates scientific evidence. Rather, the cultural, emotional, political, and social context within which decisions are made may introduce substantial irrationality.² Currently, we have only a rudimentary understanding of the effects of this social context on parents' immunization behavior. In this month's *Pediatrics*, Brunson applies an innovative methodology called "social network analysis" to gain insight into how peer networks and information sources affect immunization decisions.³

During the 1950s, Solomon Asch conducted seminal studies of the impact of social influence on judgment. In one set of experiments, several groups were asked to match the length of 3 lines drawn on a piece of paper to a standard line drawn on another paper.⁴ Only 1 of the 3 lines was equal to the standard. Before the experiment, all but 1 person in each group, the critical subject, were covertly told to vocally and unanimously express the wrong judgment about which line matched the standard. The results were striking. Compared with subjects who were part of control groups in which no artificial majority was created, critical subjects were much less likely to match the correct line to the standard (95% vs 24%, respectively): their judgments were distorted by the unanimously wrong majority. When interviewed afterward, subjects most likely to agree with the majority were less confident of their rightness, more doubtful, and felt more temptation to conform.

The pressure to conform to group opinion is relevant to immunization decision-making. In a survey study, Hershey and colleagues found that among 3 factors hypothesized to be involved in immunization decisions: altruism, free-riding, and bandwagoning (ie, doing what most other people do), bandwagoning had the greatest effect on vaccine acceptance.⁵ Similarly, as part of an international ethnographic study, Streefland and colleagues observed a collective dimension to decision-making: "people have their children vaccinated because everybody does and it seems the normal thing to do."⁶

Brunson continues this inquiry into the impact of social influence by exploring the features inherent to the social groups of parents who do and do not conform to the recommended vaccination schedule. Her results lay bare a fundamental question: are social networks a window or mirror into parental immunization decisions? That is, does the collective advice from a parent's social network serve as an opportunity to explore diverse ideas and viewpoints about immunization and specific vaccines, or does it simply reflect and reinforce what that parent is already predisposed to think and do?

Recent evidence suggests the latter. For instance, the cultural cognition thesis maintains that people conform their factual beliefs to ones that are consistent with their cultural worldview. Kahan et al has shown that cultural cognition indeed mitigates our perceptions of the risks and benefits of human papillomavirus vaccination: we not only endorse or ignore information about human papillomavirus in a manner that confirms our previous beliefs, but this selectivity intensifies when we perceive the source of this information to be someone with whom we share similar values.⁷ Leask et al also found that mothers' social networks were a source of reassurance in the face of new information about vaccines and were "an important way to return to formerly established views."⁸

Brunson's study also provokes us to consider what might be the cumulative effect of social networks on parental immunization decision-making. Networks

that may initially be a window may become reflective over time, thereby strengthening and sustaining a vaccine position. It is clear that we need to understand how the influence of social networks on parental immunization decision-making evolves and matures over time if we hope to shape it.

The emerging understanding of the importance of social networks in immunization decision-making not only serves as a reminder that immunization is a social practice but also that we have much to learn about how health care decisions are made today. As a society, we respect the privacy of health care decisions; however, if we are to sustain adherence to the recommended immunization schedule as a social norm, we need to learn how to empower immunizing parents to become vocal and talk with other parents, including prospective parents, about why they chose to immunize their children. We must develop and test public health

interventions that are based on the cognitive processes actually used by parents in their immunization decision-making while working to increase the role of science in parent's decision-making.

This work is important to help lessen the burden on pediatric providers to influence parents' immunization knowledge, attitudes, and beliefs. Although the provider-parent conversation about vaccines may be the most influential to parental decision-making, these conversations can be difficult to navigate, especially during the increasingly time-limited provider-parent encounter. Public health interventions aimed at shaping the social milieu of immunization decision-making outside the examination room can complement providers' efforts to achieve the full benefit of immunizations within. Our emerging understanding of vaccine decision-making suggests that this priming of the pump is just what is needed.

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