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Commentary

Extension: Beliefs about causes of autism and vaccine hesitancy

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Abstract

There are many reasons why people may feel hesitant to accept vaccines for their children, with fears about a link between vaccines and autism spectrum disorder (ASD) being one of the most common. In fact, parents of children with ASD are among those most likely to become vaccine hesitant. Vaccine-hesitant parents may delay and/or refuse one or more vaccines for their children, which subsequently places them at increased risk for contracting and spreading vaccine-preventable diseases. In this extension report, I briefly review two specific studies that followed our publication of "Beliefs About Autism and Vaccine Hesitancy Among Parents of Children with Autism Spectrum Disorder" (Goin-Kochel et al., 2020). The first extended our efforts to understand factors that predict vaccine hesitancy in a large sample of more than 8,800 families participating in the SPARK study (Simons Foundation Powering Autism Research for Knowledge). The second focused on a local sample of parents awaiting developmental/behavioral evaluation for their children to characterize beliefs about causes of children's developmental delays and identify factors associated with vaccine hesitancy. Current approaches to successfully address vaccine hesitancy are limited, and novel strategies that resonate with targeted population segments are urgently needed.

Extension: Beliefs About Causes of Autism and Vaccine Hesitancy

It is clear that families managing autism spectrum disorder (ASD) are at greater risk for becoming vaccine hesitant largely because of an erroneous link drawn between vaccines and the development of ASD [1,2]. However, many factors work in concert to influence vaccine hesitancy, including personal, cultural, and demographic factors. Understanding which factors are most influential for whom and when is key to the development and success of strategies designed to assuage vaccine concerns and improve vaccine acceptance [1]. Since the publication of our findings in *'Beliefs About Autism and Vaccine Hesitancy Among Parents of Children with Autism Spectrum Disorder'* [1], we have continued to study predictors of vaccine hesitancy among parents of children with ASD within both (a) a larger sample of more than 8,800 families participating in the national SPARK study and (b) a local sample of families awaiting developmental/behavioral evaluation. Among our larger sample of SPARK families, we observed high rates of vaccine hesitancy that were similar to those in our initial SPARK study[1], with 22% of families being vaccine hesitant, ranging from a low of 20% to a high of 41% across racial and ethnic groups [1,3]. We also found higher rates of vaccine hesitancy among families with lower levels of education and in lower socioeconomic brackets, which is also consistent with our earlier observations. Vaccine hesitant and non-hesitant parents differed significantly in their endorsement of 19 of 21 ASD causal factors (i.e., all but "will of God" and "my own tobacco use" from the Cause subscale of the Illness Perception Questionnaire-ASD). Differences in beliefs about causes of ASD across racial and ethnic groups were also seen, with families of color more often endorsing "toxins in vaccines," "environmental pollution," "poor past medical care," and "diet/eating habits" as causes compared to White families, and White families more often endorsing "genetics," "my child's brain structure," and "chance/bad luck." Collectively, these results confirm the need for improvements in communicating/sharing information about putative causes of ASD that have the strongest evidence bases, particularly with families in racially/ethnically and socioeconomically marginalized communities. This is particularly important in the current context

of COVID-19 vaccine hesitancy, which is also more common in medically underserved communities [4-8] and has also been partially attributed to concerns about a link between vaccines and ASD [9]. Our continued research with this large SPARK sample is focusing on additional factors that may influence vaccine hesitancy (e.g., child's level of functioning/ASD severity, parental adjustment to the ASD diagnosis) and using data-driven approaches to characterize different profiles of vaccine-hesitant parents. This will inform the messaging of subsequent educational campaigns and interventions designed to bolster vaccine acceptance and dispel the myth of an ASD-vaccine link.

In a separate study of 138 local parents awaiting their child's developmental/behavioral evaluation, we were particularly interested in determining the prevalence of vaccine hesitancy in relation to a possible ASD diagnosis. More than 40% of the sample was vaccine hesitant and one in five agreed with vaccines as a causal factor [10]. Almost half reported that their child had previously received an ASD diagnosis; however, these parents were no more likely to be currently vaccine hesitant than parents of children who had not received a prior ASD diagnosis. Yet parents of children with a prior ASD diagnosis and those who were vaccine hesitant were more likely to be seeking information about ASD. This could imply that the question of ASD is not resolved for these parents, which may explain their continued pursuit of diagnostic services. It might further suggest that information seeking largely follows receipt/acceptance of a diagnosis, which may subsequently influence beliefs about causes of ASD/developmental delays. We are poised to examine the potential influence of parental acceptance of the ASD diagnosis on both vaccine hesitancy and beliefs about causes of ASD with the aforementioned large SPARK sample, as this dataset includes information about family adjustment to the ASD diagnosis. Findings could have implications for how to support families who feel negatively about or are struggling to accept the diagnosis, which may subsequently influence their beliefs about causes of ASD and treatment decisions.

The long-term goal of this line of research is to decrease the incidence of vaccine-preventable disease outbreaks by reducing vaccine hesitancy that leads to vaccine delay/refusal. Unfortunately, efforts to assuage vaccine concerns with scientific information alone are rarely successful, and our understanding of how effectively to sway beliefs in favor of vaccine acceptance is limited [2]. A commonly recommended method involves motivational interviewing and planned dialogue between patients and trusted healthcare professionals to encourage vaccine acceptance. However, these methods often require training, can be time consuming, and are frequently dismissed by healthcare providers who lack knowledge and confidence to engage in these discussions [11], which limits their utility, reach, and impact. New strategies that are grounded in health-behavior change theory and that leverage social influencers within targeted populations/communities at high risk for disease outbreaks because of low vaccine acceptance are urgently needed. This is particularly relevant amid the current COVID-19 pandemic, where high rates of vaccine hesitancy are observed disproportionately in communities at greater risk for more severe COVID-19 morbidity and mortality.

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