

Factors Preventing Widespread Vaccine Uptake among Adults¹

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Introduction

This Ask IFAS publication was created as a companion document to “Adult Vaccine Confidence and Disparities in Florida” (Stofer et al., 2024a) and “Resources and Strategies to Build Vaccine Confidence among Adults” (Stofer et al., 2024b). Part of the *Adult Vaccination in Florida* series, the publication and initiative assist educators to facilitate learning about adult vaccination. In this document, we explore the prevailing factors preventing widespread vaccine uptake by adults in the United States. To provide proper recommendations and support open discussion, educators and the healthcare community must understand what is preventing public vaccine uptake. This document will outline the most relevant trends and patterns that are seen in direct connection to vaccine uptake among adults.

Vaccine Uptake in the United States

The lack of adult vaccine education has become a well-known issue in recent years. Even before the onset of COVID-19, vaccine uptake rates for adults residing in the United States needed “substantial improvement ... to reduce the burden of vaccine-preventable diseases” (CDC, 2020, Summary para. 4) compared to medical recommendations (MacDonald and the SAGE Working

Group on Vaccine Hesitancy, 2015). For more information on the need for more adult vaccine communication among particular communities, see Ask IFAS publication AEC803, “Adult Vaccine Confidence and Disparities in Florida” (Stofer et al., 2024a). Beyond the general scarcity of vaccine education for adults, multiple factors contribute to vaccine uptake and hesitancy in the adult population. These factors can be grouped into three general intersecting categories: *complacency*, *confidence*, and *convenience* (Table 1).

Table 1. Intersecting categories impacting vaccine uptake.

Category	Definition
Complacency	Level of perceived threat of illness or ability to take action
Confidence	Level of trust in the vaccines, the healthcare system and providers, and/or policymakers; includes health literacy issues
Convenience	Level of perceived and structural factors affecting vaccine access

A deeper understanding of the factors that contribute to vaccine uptake among adults in the U.S. can serve as a valuable tool for guiding health educators in their initiatives to support adult vaccination.

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Complacency, Confidence, and Convenience

Complacency

An individual's perceived threat of an illness directly influences complacency. Many healthcare professionals note that the success of vaccines at initially eradicating sickness often leads to a complacency where people no longer see these vaccines as necessary due to the lowered risk of disease (Baumgaertner et al., 2020). Without the stress of contracting the disease pushing people to get vaccinated, the public becomes complacent that vaccination is not necessary, due to their belief that the imminent threat is over. However, decreased vaccination rates allow cases of previously controlled diseases to begin increasing again.

Vaccination rates and disease outbreaks are closely linked and influenced by how people perceive the threat of illness, which in turn motivates them to get vaccinated (Quinn et al., 2019). This connection between public perception of risk and vaccine hesitancy is referred to as vaccine propensity, which represents an individual's willingness to accept vaccination (Baumgaertner et al., 2020). Vaccine propensity varies per individual and can have fluctuating effects on overall confidence in vaccines, as each person has a different response to their perceived threat. Understanding how the public views the threat of illness is crucial to discerning the role that complacency plays in vaccine uptake. A major part of public perception towards vaccines and complacency delves into self-perception and self-efficacy, defined as "the self-perceived ability of an individual to take action to be vaccinated" (MacDonald and the SAGE Working Group on Vaccine Hesitancy, 2015, p. 4163). Rogers (1975) suggests that public interpretation of the risk of illness correlates to the protection motivation theory, which essentially accounts for how an individual's interpreted risk of illness and perceived probability of contracting the illness account for their motivation to evoke protective measures, such as vaccination. As the risk of contracting illness and the resulting stress increase, people are more motivated to use available vaccines to protect themselves.

Understanding how the perceived risk of contracting disease impacts vaccine complacency is crucial for interpreting and altering vaccine uptake rates. Individual-level complacency is impacted by perceived efficacy in terms of how disease risk is internalized. The lower the risks associated with infection are, in terms of likeliness of contraction and illness complications, the less likely individuals are to make the choice to get vaccinated (Robinson et al., 2022). By ensuring that personal health decisions regarding

vaccine acceptance are more informed and guided by healthcare provider communications, vaccine complacency can be targeted while maintaining patient involvement in the decision-making process. Efforts to address complacency must consider the perceived impact of the threat of illness and how it influences vaccine decision-making when designing strategies to increase vaccine uptake rate.

Confidence

Quinn et al. (2019) defined *vaccine confidence* as "trust in the effectiveness and safety of vaccines, the system that delivers them, including the reliability and competence of the health services and health professionals and the motivations of policymakers who decide on the needed vaccines" (1.1 Defining Vaccine Hesitancy). Confidence in vaccinations is intertwined with value systems and the social, economic, and political background of the individual, as these deeply impact their resulting trust in vaccines. It therefore becomes crucial to interpret the intersecting backgrounds and values for each individual when trying to assess their vaccine confidence. For example, COVID-19 highlighted attitudes toward vaccine refusal (e.g., Craig, 2021; Kreps et al., 2020; Prosser et al., 2023; Surgo Ventures, 2021). Current research literature on adult vaccines and vaccination rates other than for COVID-19 reflects this contextual complexity through a major focus on factors relating to vaccine confidence. Overall, it is critical to consider the contextual and cultural background of different communities when trying to increase vaccine confidence and trust.

Confidence in vaccines is more nuanced than simply a lack of education or understanding about vaccination. For some vaccines, there appears to be a positive correlation between education levels and high vaccination rates, while for others no strong correlation exists (Rencken et al., 2020; Larson et al., 2014). For example, U.S. adults with higher education levels were more likely to be up to date on their vaccines, such as for COVID-19, tetanus, and influenza, but this was not applicable for all vaccines nor across all countries (Trepanowski et al., 2024; Rencken et al., 2020; Larson et al., 2014). It is crucial to examine how individual background beyond education impacts vaccine confidence.

Social, political, cultural, economic, and racial values strongly impact overall trust in the vaccination process and its providers. Socioeconomic status and level of income are major contributors affecting vaccine confidence, as communities with lower incomes, monetary, and wealth resources tend to have lower levels of trust in healthcare providers (Larson et al., 2014). Geographical location in relation to either economic or political majorities also impacted

overall vaccination rates. Rural areas similarly had lower vaccination rates for many vaccines, reflecting structural barriers to healthcare provisions and discussions (Gatwood et al., 2020). For example, areas with primarily democratic voters had higher rates of pneumococcal vaccine uptake (Gatwood et al., 2020). On the other hand, adults in the United States who identified as politically moderate or conservative were less likely to vaccinate and more likely to support anti-vaccination viewpoints (Baumgaertner et al., 2018). Areas with lower health literacy, defined as an individual's capacity to interpret and understand basic health information to make informed health decisions, also followed this trend of lower vaccine uptake rates (Gatwood et al., 2020; Centers for Disease Control and Prevention, 2023). It is important for Extension workers and clientele to acknowledge this disparity impacting rural populations and how it manifests in healthcare decisions, such as for vaccine confidence. We further discuss the relationship between rural areas and vaccination in Florida in the Ask IFAS overview document, "Adult Vaccine Confidence and Disparities in Florida" (Stofer et al., 2024a).

Confidence in vaccines relies heavily on trust in not only the vaccine, but also in the United States healthcare system and administering health institutions. The history of discrimination against African Americans in the U.S. has resulted in a lower trust in the government and, correspondingly, in vaccines (Stroope et al., 2021). The continued racial disparities that reside in the U.S. healthcare system are complex in their relationship with trust in vaccinations. Trust tends to vary based on which institution is referenced, such as pharmaceutical companies or government agencies. Conspiracy beliefs, or misinformed stories that attribute the actions of a person or institution to be rooted in a deeper and more sinister purpose, also correspond to distrust in institutions, resulting in lower vaccine uptake; such beliefs were most common in historically marginalized populations, such as Hispanic/Latine populations and women (Stroope et al., 2021). The spread of misinformation such as conspiracy beliefs or slander throughout communities can decrease the overall trust in the institutions that administer vaccines.

Religious affiliations can have varying impacts on their members' views towards vaccines. Specifically, the authority that religious leaders have over their followers grants them a unique position to increase or decrease vaccine confidence. Even though most major religions support the principle of vaccinations, the views that many religious leaders have towards vaccinations are extremely nuanced and do not always align with traditional perspectives

(Williams et al., 2020). Many religious leaders do not have specific doctrine guiding their vaccine perspectives, so their teachings regarding vaccines tend to rely on their personal perspectives and experiences. While this can be helpful if religious leaders express support of vaccines, it is also harmful if the opposite is true; lack of support for vaccination can lead to vaccine-preventable illnesses spreading through those congregations.

Another major influencer of vaccine confidence is social media as well as the spread of different perspectives concerning vaccines. Similar to the impact of religion on vaccine confidence, social media can both increase and decrease vaccine confidence. Networking platforms allow for more extensive outreach by medical professionals and health advertisements to individuals who were previously unreachable (Wilson et al., 2013). Consumers on social media and the internet can more easily access important health information and care providers. However, social media also accounts for the spread of misinformation that can have extremely harmful impacts on vaccine confidence and trust (Frampton, 2022). Additionally, people with anti-vaccination viewpoints are better able to connect with those with similar beliefs, resulting in bolder and more polarized anti-vaccination views (Wilson et al., 2013). The influence that social media has on vaccine confidence depends on the type of interactions that occur and people who view that media.

Healthcare workers' communication with their patients about vaccines can be an effective tool in raising vaccine confidence through creating trust and using good communicative skills to provide vaccine recommendations. However, inadequate or vague communication from providers about vaccines can have devastating impacts on vaccine confidence. Improving health communications for vaccines is necessary to support vaccine confidence. A companion document to this article outlines resources and strategies to build vaccine confidence among adults (Stofer et al., 2024b).

Convenience

Convenience takes into account vaccine availability, accessibility, and affordability, in addition to perceived physical barriers that prevent people from getting vaccinated. Perceived barriers are the assumed issues with vaccination that many people have concerning vaccine costs and logistics (Luz et al., 2017). Examples of commonly reported perceived barriers include the known risks of the vaccine, potential pain and adverse events, as well as time and financial commitments (Luz et al., 2017). Both realistic

and perceived barriers have major influences on vaccine uptake. The specifics of the vaccination service also heavily influence convenience, based on factors such as where the service is offered, the cost of the service, explanation of the process, and overall comfort. Vaccine accessibility, the ease through which the vaccine can be administered and its geographical and financial availability, accounts for the overall convenience of vaccination.

In terms of the complexity of each category in relation to public opinion, convenience is directly related to availability and administration infrastructure as opposed to social issues, and therefore may be the most straightforward to address. However, addressing availability alone will likely not completely optimize adult vaccination. For example, convenience typically correlates to passive acceptance of vaccinations, as it most directly impacts people who are overall willing to get vaccinated but end up forgoing or delaying vaccination due to convenience issues (Quinn et al., 2016). Slight hesitations towards vaccination as a result of confidence or complacency may be further amplified by the existence of perceived or actual barriers in the process of vaccination. Convenience is a frequent topic of vaccination studies because small adjustments can have major impacts on vaccine uptake rates. However, a majority of the studies that have gone into reviewing contributing factors to convenience such as cost, geographical location, and perceived barriers only focus on childhood immunizations. The need for adult-centered vaccine barriers review becomes imminent in relation to the overall lack of literature evaluating adult vaccine convenience.

Recommendations

Complacency

- Ensure that individuals are aware of the risks of illness and the likelihood of contraction to guide more informed personal health decisions.
- Incorporate recommendations for personal discussion between patients and their healthcare providers that address potential concerns while maintaining patient involvement in the decision-making process.
- Highlight an individual's ability to and personal responsibility for making informed and conscious decisions regarding vaccination, including taking action.

Confidence

- Integrate acknowledgement and understanding of a patient's concerns as they intersect with their personal background in healthcare discussions to format a more individualized approach.

- Work to build trust in vaccines and the providing health-care institutions within priority populations through community involvement and communication with community leaders.
- Address and negate the spread of misinformation concerning vaccines while maintaining respect and compassion for the patient.
- Ensure that all healthcare communications regarding vaccines are cooperative and maintain patient autonomy in their health decisions to build trust and collaboration.

Convenience

- Increase vaccine availability by removing structural barriers, specifically concerning financial and geographical vaccine provision limitations.
- Address perceived barriers to vaccination by incorporating healthcare discussions that outline the vaccination process and answer any potential questions regarding accessibility and availability.

These recommendations are general suggestions that should be deployed strategically by healthcare providers and educators as they deem appropriate for the given situation. As an individualized approach must be taken with each patient, it is crucial to interpret the specific situation to know which recommendations will be the most successful at increasing vaccine acceptance. For more information, consult the Ask IFAS publication, "Resources and Strategies to Build Vaccine Confidence among Adults" (Stofer et al., 2024b).

Conclusion

The contributing factors to adult vaccine uptake are incredibly nuanced, due in part to the sheer variety of contributing elements as well as to the deep ties with identities, value systems, and public trust in institutions. When encountering people with concerns about vaccines, evaluate the contributing factors in order to plan an individualized approach that most accurately provides reassurance and builds vaccine confidence. Tailoring your approach to the concerns and barriers of your priority population can ensure the most effective approach, whether it be educational, or deploying resources strategically. Understanding the context for individuals and groups and for specific vaccines and illnesses is crucial for assessing and building vaccine confidence.

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