Special roles of rural primary care and family medicine in improving vaccine hesitancy

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Abstract

Family medicine plays a crucial role in overcoming vaccine hesitancy in rural areas with a limited access to healthcare services and a higher prevalence of vaccine hesitancy. Competent information on diseases and vaccinations provided in a trusting relationship is important to overcome vaccination hesitancy and reach acceptance. This article aims to provide a critical analysis of this issue using methodologically rigorous research and evidence-based recommendations from nonsystematic literature research. Studies on the coronavirus pandemic conducted in South Tyrol, Italy, confirmed that vaccination hesitancy is more common in rural areas than in urban areas, even in economically well-developed Central European regions. The reason for this increased hesitancy is that groups with at-risk sociodemographic characteristics associated with hesitancy are more prevalent in rural areas. This fact assigns a special role to rural primary care and family medicine to be the mediators of vaccinations. Healthcare systems should invest in targeted continuing medical education to promote vaccination literacy among rural healthcare workers and physicians. Therefore, it is important to provide general practitioners with information on common vaccinations. Effective and efficient communication techniques should be improved for successful communication with patients.

Key words: vaccine hesitancy, rural medicine, primary care, prevention

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Introduction

Coronavirus disease 2019 (COVID-19) pandemic presented healthcare services with completely new medical and organizational facts.[1] The infection risk of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and severity of respiratory illness due to unestablished immune protection until the COVID-19 vaccination was developed necessitated new forms of triage as well as isolation of infectious and noninfectious patients in ambulatory and hospital care. This affected acute and intensive care medicine on the one hand,[2,3] and care of the chronically ill on the other.[4] Due to the nature of things, acute medical care could not be delayed and was prioritized, whereas other medical services, such as elective specialist care, had to be postponed, and preventive medicine interrupted.

In addition to the emergency rooms and intensive care units, primary care and family medicine were particularly challenged.[5] Online medical consultations through standard video conferencing systems were initiated to care for COVID-19 patients as pilot projects, but only a limited number of patients participated.[6] In many healthcare systems, including South Tyrol, Italy, virtual consultation disappeared after the pandemic. In South Tyrol, during the COVID-19 pandemic, there was a list of telephone numbers allowing family physicians to communicate directly with hospital departments; however, this is no longer active. In Italy, the electronic generation of prescriptions for patients (in direct communication with pharmacies) was rapidly introduced in the context of pandemic emergency regulations, which the Italian National Health Service has recently decided to maintain. The attempt to communicate online with patients has contributed little to the overall management of the pandemic. Family medicine was largely unprepared, and the pandemic highlighted weaknesses in general medical care.

Even though, especially in primary care and family medicine, new ways of communicating with patients, hospitals, health administrators, and authorities – innovations that had been considered unsuccessful before the pandemic – were quickly found within the framework of organizational adjustments, the weaknesses of the respective healthcare systems and institutions became obvious.[4] In one way or the other, better digitalization in the whole healthcare system would have been desirable to allow a better communication and information flow between the several actors of the health system and patients.[7] The negative effects resulting in the overstrain of human actors have been documented in numerous ways, including among general practitioners.[7] Moreover, the inevitable inadequacy of medical services for some patients has been reported.[4]

This article aimed to raise awareness on the issue of vaccine hesitancy in family medicine and offer recommendations for healthcare providers on how to address it. The commentary should contribute to a wider discussion about vaccine hesitancy and promote evidence-based practices in family medicine.

Materials and methods

A nonsystematic review of the literature in PubMed and EMBASE for data collection and analysis was performed in order to identify the key factors contributing to vaccine hesitancy in family medicine, and provide evidence-based recommendations for healthcare providers on how to address vaccine hesitancy, such as effective communication techniques and addressing patient concerns. This highlights the importance of addressing vaccine hesitancy in family medicine for public health and community wellbeing.

Results

SARS-CoV-2 vaccines

In dealing with the pandemic, attention was initially limited to nonpharmacological measures. Vaccines against SARS-CoV-2 were then developed, tested and approved at unprecedented speed.[8] It soon became clear that because of the global spread of the disease, herd immunity could no longer be achieved even with mass vaccination.[9] However, observational studies and pharmacovigilance were conducted globally to create large datasets and confirm the safety and effectiveness of the vaccines, making it clear that vaccinations would end the pandemic.[10] Thus, global vaccine availability, vaccination rates, and overcoming vaccination hesitancy and aversion have become a focus of public health research.[11,12]

It is critical to better understand what determines vaccine acceptance, including vaccination intention and the factors that could determine hesitancy and resistance. The determining factors for hesitancy included individual and demographic characteristics such as distrust in authority, risk aversion, disgust sensitivity, age, economic situation, educational status, type of parenthood, and rural residence.[13] From a public health perspective, special attention must be paid to vaccination hesitancy among the rural population. Overcoming vaccination hesitancy is accomplished by providing information through a trusted and competent medical specialist.[14] This task falls primarily to primary care and family medicine.

Urban–rural disparities in vaccine hesitancy

There are several urban–rural disparities in vaccine hesitancy which may affect the vaccination rates of different geographic areas.[15] Rural areas can have limited access to healthcare facilities and providers, which makes it more difficult for residents to receive vaccinations. This lack of access to healthcare contributes to vaccine hesitancy, as patients may not trust healthcare providers or may not have received adequate education regarding

the importance of vaccinations. Rural areas may have political and cultural beliefs different from those in urban areas, which can influence vaccine hesitancy. For example, some rural areas may have higher rates of conservatism or religious fundamentalism, which may be associated with lower vaccination rates. Also, such areas may have lower levels of education and awareness of the importance of vaccinations, which contributes to vaccine hesitancy. Lack of access to information and education about vaccines and their benefits can lead to misconceptions and misinformation regarding their safety and efficacy. Social networks can also influence vaccination hesitancy. Rural areas have tight-knit communities, where social norms may discourage vaccination and increase vaccine hesitancy. Rural residents can have a greater mistrust of medical authorities, which also contributes to vaccine hesitancy. This may be due to historical or current experiences of discrimination, limited access to healthcare or lack of familiarity with medical practices.[15]

Overall, urban–rural disparities leading to vaccine hesitancy can have significant public health implications, contribute to lower vaccination rates in rural areas and increase the risk of disease outbreaks. It is important to address these disparities through targeted public health campaigns and educational programs that discuss the unique factors contributing to vaccine hesitancy in rural areas.

Urban–rural discrepancies in vaccination in South Tyrol, Italy

Italy's COVID-19 vaccination rate is among the highest in Europe.[16] Within Italy, however, significant regional differences have been reported. The northernmost province, close to the border with Austria, South Tyrol, had the lowest vaccination rate in the country and highest infection incidence in September 2021.[17] South Tyrol is an autonomous province in Italy with a special statute and language groups, and the majority of its 535,000 inhabitants are native German speakers.

In South Tyrol, a representative survey on the COVID-19 pandemic, including hesitant vaccination behaviors, was conducted in March 2021. The results showed vaccination hesitancy in 15.6% of participants.[18] Increased hesitancy was mostly observed in young patients with an absence of chronic disease, mistrust of institutions and conspiracy thinking. Also, worse economic situation was linked to vaccine hesitancy. Importantly, rural residence was associated with greater hesitancy, although due to the alpine landscape and the relatively small inhabitable area, the population density was high, and the country was economically well developed. Vaccine hesitancy differed significantly among language groups and was higher in German speakers than in Italian speakers (15.8% compared to 11.7%). However, a linguistic group was not an independent predictor of vaccine hesitancy.[18]

Since more members of the German-language group live in rural areas than in urban areas, and because rurality is a known risk factor for increased vaccination hesitancy, it was natural to look more closely at the question of the influence of residence type on vaccination hesitancy. A second analysis of the survey data showed that hesitant vaccination behaviors were significantly higher in rural than in urban areas (17.6% compared to 12.8%, $p = 0.013$). Sociodemographic differences between rural and urban areas were numerous: rural populations tended to have worsened economic situations as a result of the pandemic, were at an educational disadvantage and more often had young children (under 6 years of age) – all of these factors were associated with increased vaccination hesitancy. The fact that there were fewer chronic diseases and more COVID-19-related deaths in rural areas, other predictors of vaccination hesitancy according to the survey, are likely to be responsible for the urban–rural differences. Finally, national public health institutions placed less trust in pandemic management, as was their trust in local authorities, civil protection and local health services. Similarly to the effects of language group membership on vaccine hesitancy,[18] neither rural nor urban residence was an independent predictor in the regression analyses. The relatively higher vaccination hesitancy in rural areas of more than 1/3 can be adequately explained by known predictors.[19] Thus, several predictors of COVID-19 vaccine hesitancy were more prevalent in rural than in urban areas and among members of the German-speaking linguistic group, which may explain the lower vaccine uptake in rural areas.

Hesitant people are more likely to talk to their primary care physician about vaccinations than people who are vaccinated when it is generally recommended.[20] Larson et al. wrote in their review on vaccine hesitancy: "Given that physicians and other healthcare providers are still among the most trusted when it comes to healthcare advice, local information about the nature and scope of vaccine hesitancy in their communities may help them anticipate and support important conversations in the clinic."[21] Factors linked to vaccine hesitancy were found to be more prevalent in rural populations[19] that are amenable to targeted medical counseling.

Discussion

Family medicine plays a crucial role in overcoming vaccine hesitancy in rural areas where there may be limited access to healthcare services and a higher prevalence of vaccine hesitancy.[22,23] Details and practical examples of ways in which family medicine physicians can help address vaccine hesitancy in rural areas are presented in Table 1. By taking these steps, family physicians can increase vaccination rates and improve the health of their communities.[23]

Table 1. Family physician's steps to increase vaccination rates

Measure	Explanation
Building trust[24]	Family physicians are often highly respected members of the community in rural areas. They can use their existing relationships and credibility to build trust with patients who are hesitant about vaccines. By engaging in conversations and providing evidence-based information about vaccines, family physicians can address concerns and help patients make informed decisions about vaccination.
Educating patients[25]	Family physicians are in a unique position to educate patients about the importance of vaccines and the potential benefits and risks. They can also address myths and misinformation surrounding vaccines, which are often major drivers of vaccine hesitancy. By providing accurate information, family physicians can help patients understand the risks of vaccine-preventable diseases as well as the safety and effectiveness of vaccines.
Offering convenient access[26]	Rural areas may have limited healthcare resources, which can make it difficult for patients to access vaccines. Family physicians can help overcome this barrier by offering vaccines in their clinics or by coordinating with local health departments or pharmacies to provide vaccines in the community. By offering convenient access to vaccines, family physicians can increase vaccination rates in their communities.
Encouraging vaccination among vulnerable populations[27]	Rural areas may have populations that are particularly vulnerable to vaccine-preventable diseases, such as the elderly or those with chronic illnesses. Family physicians can play a key role in identifying these populations and encouraging them to get vaccinated. They can also work with local community organizations and public health agencies to promote vaccination among these populations.

Table 2. Communication attitudes when counselling people who are hesitant to vaccinate[29,30]

Recommendation	Explanation
Active listening and empathy[31]	An important first step is to actively listen to the patients and show empathy for their concerns and fears. It is important to understand the patient's perspective in order to address their concerns effectively.
Asking open-ended questions[32]	Open-ended questions can help initiate and guide the conversation. Open-ended questions encourage the patient to share their thoughts and concerns. For example: "What are your concerns regarding vaccination?"
Providing information[33]	It is important to provide patients with the facts and information they need in order to make an informed decision. The information should be clear and understandable to avoid any misunderstandings or misinformation.
Showing empathy[34,35]	Empathy can help build a relationship between the healthcare provider and the patient, and gain the patient's trust. Empathy involves putting oneself in the patient's shoes and understanding their feelings and concerns.
Motivational interviewing[36]	Motivational interviewing is a technique that aims to increase the patient's motivation to vaccinate. By using open-ended questions, positive reinforcement and collaboration, the patient can be encouraged to reconsider and change their attitude towards vaccination.
Avoiding persuasion[37]	The use of persuasion or pressure can cause the patient to become defensive and further entrench their position. Instead, the healthcare provider should take an open and supportive approach and help the patient make an informed decision.

Effective interviewing is crucial in the medical counseling of people who are hesitant to be vaccinated.[28] Evidence-based recommendations and techniques can be applied to improve the course of the conversation (Table 2).

Communicating with conspiracy thinkers about vaccinations can be challenging, as their beliefs can be deeply held and difficult to change. Concrete recommendations on how to counsel such individuals are presented in Table 3. It is important to keep in mind that changing the beliefs of conspiracy thinkers is a difficult and ongoing process. Healthcare providers should aim to establish a respectful and trusting relationship with their patients and continue to provide accurate information and support for vaccinations over time.

These techniques can be learned and practiced through specialized training and courses for healthcare providers aimed at ensuring effective and patient-centered interviews. For example, the United Kingdom National Health Service offers courses and training programs. However, further research on vaccine hesitancy in family medicine and the effectiveness of different interventions is warranted.

This study is limited by the nonsystematic nature of data collection and analysis. The weighting of the results could have been biased by the authors' study, which was conducted in South Tyrol.

Conclusions

Observations indicate that there is no need for a fundamentally strategic difference in communication aimed at improving vaccination readiness between urban and rural populations. Competent information on the diseases and vaccinations provided in a trusting relationship is important to overcome vaccination hesitancy and increase acceptance. Studies on the COVID-19 pandemic conducted in South Tyrol, Italy, confirmed that vaccination hesitancy is more common in rural than in urban areas, even in economically well-developed Central European regions. The reason for this is that risk groups with sociodemographic characteristics associated with hesitancy are more prevalent in rural than in urban areas.

Table 3. Communication attitudes when counselling people who are conspiracy thinkers

Recommendation	Explanation
Avoid confrontation[38,39]	It is important to avoid confrontation and argumentation with conspiracy thinkers. Instead, the focus should be on building rapport, finding common ground and addressing their concerns in a respectful and nonjudgmental manner.
Acknowledge their concerns[40]	Conspiracy thinkers may have legitimate concerns or fears related to vaccination. It is important to acknowledge their concerns and show empathy for their perspective.
Provide accurate information[40]	Provide accurate and credible information about vaccination to counter misinformation and conspiracy theories. Use trusted sources of information, such as the World Health Organization or the Centers for Disease Control and Prevention.
Use plain language	Use plain language and avoid medical jargon to ensure that the information is understandable to the patient.
Address mistrust of authorities[40]	Conspiracy thinkers may have a general mistrust of authorities, including healthcare providers. It is important to address their mistrust and build trust through respectful communication and by providing accurate information.
Use storytelling	Stories can be a powerful way to communicate the benefits of vaccination. Share stories of individuals who have been vaccinated and have had positive outcomes.
Provide resources[40]	Provide resources, such as websites, brochures or videos, that patients can access to learn more about vaccination.

Thus, rural family doctors play special roles as mediators of vaccination.[41] Healthcare systems should invest in targeted continuing medical education to promote vaccination literacy among rural healthcare workers and physicians.[42,43] It should be emphasized that family physicians need specific training not only on particular vaccinations but also on how to talk to vaccination skeptics and opponents, which is not easy and often leads to conflicts rather than success.

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