

## The Predictive Contribution of Immunization Programs to Medication Quality Realization

Yong Li, Jie Zhao,

College of Engineering and Technology, Chengdu university of technology, Leshan, China

### Abstract

Findings from this study suggest mixed outcomes regarding the necessity of immunization, as well as its influence on the quality of service provision in clinical and community pharmacy. Imperative to note is that the paper has relied on a study technique, implying that any bias that might have been exercised by the selected scholars is likely to have affected the study's findings and inference making. Despite this weakness, it is worth concluding that immunization proves important or necessary for use by clinical and community pharmacists only if the drugs being delivered are tailored to the needs and preferences of patients and their families. Therefore, it is recommended that pharmacists consider the needs of patients before administering drugs via immunization. By tailoring the drug content to the conditions or clinical features with which patients present, it is predicted that immunization might boost the quality of community and clinical pharmacy practices via preventive medication, rather than remain reactive and administer drugs only after certain conditions are diagnosed.

### Introduction

Most of the current literature highlights that immunization strives to stimulate an individual's immune system towards the production of humoral antibodies that play the role of protection against pathogens and toxins with which the pathogens are associated (Kennedy, LaVail, Nowak, Basket & Landry 2011). Other studies suggest that immunization aims at stimulating one's immune system towards the production of T cells responsible for the provision of cell-mediated immunity. From the positive perspective, some of the benefits documented include prevention against infectious diseases, the capacity to save life, the ability to save time and resources that would be used for disease control, and the protection of future generations. However, most of the past scholarly studies point to the increasing adversities associated with immunization. As such, the need to do away with immunization (while seeking to avoid adverse outcomes with which the practice is associated) cannot be overemphasized. This study examines some of the previous scholarly reports regarding the necessity of immunization and its influence on service provision in clinical and community pharmacy.

## Methods

One of the reasons why immunizations are not necessary concerns objections and debates that have been presented from an ethical perspective. In particular, opponents hold that some communities and individuals disagree with the need for immunization programs due to philosophical and religious beliefs that continue to conflict with the perceived practice. According to Omer, Salmon, Orenstein, deHartand Halsey (2009), immunization tends to infringe upon the liberty and autonomy of some communities and individuals. Apart from the aspect of ethical dilemma, other studies affirm that immunization comes with several side effects. For instance, Kennedy, LaVail, Nowak, Basket and Landry (2011) observed that the safety of vaccines remains disputable. For instance, inactivated vaccines have been reported to pose infections. As highlighted by Omer, Salmon, Orenstein, deHartand Halsey (2009), these infections result from the presence of intact pathogens. In a similar study, Kennedy, LaVail, Nowak, Basket and Landry (2011) documented that there is a causal relationship between autism and measles-mumps-rubella. Where some studies reject this relationship, the dilemma, and tensions that result point to the need to abolish immunization. This study adopts a content analysis technique, having gained data from sources of secondary data.

## Results

Newborn babies are susceptible if mothers have experienced intravenous diseases. For example, babies are likely to contract a disease such as hepatitis if their mothers have undergone vaccination. Other observations suggest that artificial immunity (vaccination) tends to compromise the ability of one's body to defend itself for a significant period. According to Kaye, del Mar Melero-Montes and Jick (2001), natural immunity lasts longer than artificial immunity. An example is a case in which a baby contracts chickenpox. In such a case, Kennedy, LaVail, Nowak, Basket and Landry (2011) documented that the affected group is likely to exhibit lifelong immunity against the condition because antibodies aptly develop towards body defense against the real condition. Furthermore, vaccines introduce toxic chemicals to the body. Some of these chemicals include formaldehyde, SV40, aluminum, and mercury (Dales, Hammer and Smith 2001). Indeed, these chemicals are associated with various adverse effects. For instance, SV40 is linked to tumors while aluminum remains associated with negative effects such as the incidence of seizures, Alzheimer's disease, and dementia.

The negative side of immunization has also been documented relative to infant vaccination against chickenpox. Indeed, most of the current literature suggests that the vaccination is predictive of a surge in chickenpox during pregnancy and at the adulthood stage. In situations where combinations of vaccines against conditions such as varicella, rubella, mumps, and measles, Omer, Salmon, Orenstein, deHart and Halsey (2009) observed that the positive effect is that the immunization leads to improved economic productivity by reducing the rate of absenteeism or lost work time. However, it was also noted that such a combination of

vaccines poses a high risk of febrile seizure; with the side effects compromising the primary goal and objectives of the immunization practice.

Other vaccines have also been observed to pose an economic burden to families, with the situation exacerbated by lower efficacy. For instance, Omer, Salmon, Orenstein, deHart and Halsey (2009) observed that vaccination against HPV virus aims at curbing the incidence and prevalence of cervical cancer but the vaccines remain costly; with the efficacy rated at 70 percent. This rating implies that even after vaccination, individuals are expected to undergo screening for cervical cancer. In other situations, the difficulty of transporting live attenuated vaccines has been documented. Additionally, these vaccines have been asserted to pose a risk of undergoing secondary mutation, a process that is linked to virulence (Kennedy, LaVail, Nowak, Basket & Landry 2011). For immune-suppressed individuals, live attenuated vaccines have also been avowed to cause disease. Indeed, live oral poliovirus vaccine forms a notable example of the vaccines that cause adversities in immune-suppressed persons.

Physical and adverse effects have also been observed to include redness and soreness at the site of injection, neurological problems, allergic reactions, discomfort, malaise, and even fever (Omer, Salmon, Orenstein, deHart & Halsey 2009). For BCG vaccination, some of the adverse effects that have been reported to occur in about 10 percent of cases include osteomyelitis, abscess formation, and the enlargement of axillary lymph nodes. For DPT vaccination, adverse effects have been reported in about 40 percent of cases. The adverse effects associated with this immunization program include fever, swelling, and induration (Kennedy, LaVail, Nowak, Basket & Landry 2011). Systemic side effects have also been linked to the administration of these vaccines. As concurred by Omer, Salmon, Orenstein, deHart and Halsey (2009), some of the systemic side effects accruing from the vaccines include lassitude, irritability, and anorexia; especially in the presence of pertussis vaccine. For the swine flu vaccine, major negative outcomes that have been reported include paralysis, vasculitis, anaphylactic shock, and Guillain-Barre syndrome.

It is also worth acknowledging that the rate of child vaccination is high but an increasing number of parents have expressed concern about the predictive role of vaccines in causing autism. According to Kaye, del Mar Melero-Montes and Jick (2001), autism arises from combined measles-mumps-rubella vaccine because the latter damages an individual's intestinal lining. As concurred by Dales, Hammer, and Smith (2001), this damage permits encephalopathic protein entrance. Additionally, vaccines have been associated with autism whereby thimerosal continues to be reported to exhibit toxicity to a person's nervous system. In relation to this trend, Kaye, del Mar Melero-Montes and Jick (2001) indicated that thimerosal contains an ethylmercury preservative in certain vaccines, with this preservative contributing to the perceived incidence of autism. Other studies avow that when multiple vaccines are administered simultaneously, a person's immune system is likely to be weakened or overwhelmed; leading to high chances of experiencing autism (Dales, Hammer and Smith 2001).

## Conclusion

In summary, findings from this study suggest mixed outcomes regarding the necessity of immunization, as well as its influence on the quality of service provision in clinical and community pharmacy. Imperative to note is that the paper has relied on a study technique, implying that any bias that might have been exercised by the selected scholars is likely to have affected the study's findings and inference making. Despite this weakness, it is worth concluding that immunization proves important or necessary for use by clinical and community pharmacists only if the drugs being delivered are tailored to the needs and preferences of patients and their families. Therefore, it is recommended that pharmacists consider the needs of patients before administering drugs via immunization. By tailoring the drug content to the conditions or clinical features with which patients present, it is predicted that immunization might boost the quality of community and clinical pharmacy practices via preventive medication, rather than remain reactive and administer drugs only after certain conditions are diagnosed. Regarding future research, there is a need for scholarly investigations to focus on the impact of community, patient, and family demographic and socio-economic factors on the efficacy of immunization in clinical and community pharmacy sectors.

## References

1. Dales Loring, Hammer Sandra Jo and Smith Natalie J. Time trends in autism and in MMR immunization coverage in California, *JAMA*, 285(2001), 1183-1185
2. Kaye James A., del Mar Melerio-Montes Maria and Jick Hershel. Mumps, measles, and rubella vaccine and the incidence of autism recorded by general practitioners: a time trend analysis, *BMJ*, 322(2001), 460-463
3. Kennedy Allison, LaVail Katherine, Nowak Glen, Basket Michelle & Landry Sarah. Confidence about vaccines in the United States: understanding parents' perceptions. *Health Affairs*, 30.6(2011): 1151-1159
4. Omer, Saad B., Salmon, Daniel A., Orenstein, Walter A., deHart, Patricia M. & Halsey Neal. Vaccine refusal, mandatory immunization, and the risks of vaccine-preventable diseases. *New England Journal of Medicine*, 360.19(2009): 1981-1988