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ORIGINAL ARTICLE

A COMPARATIVE STUDY ON CHILDHOOD VACCINATION POLICY IN THE UNITED STATES, AUSTRALIA, EUROPE AND MALAYSIA

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ABSTRACT – Vaccination from an early in life is one of the most effective medical strategies for reducing infant mortality and morbidity while also ensuring the well-being of society. Following World Health Organization (WHO) recommendations, vaccination is provided free of charge to children worldwide as part of the country's maternal and child health programmes. Nevertheless, many people believe vaccines are harmful and unnecessary, even though they are widely accepted as an effective preventive measure in public health. Many previously eradicated infectious diseases have reappeared because of vaccine hesitancy. Due to vaccine rejection, vaccine avoidance is becoming increasingly common around the world. As a result, the WHO has identified vaccine hesitancy as one of the top ten global health threats for 2019. However, policies that encourage parents to vaccinate their children, on the other hand, may increase their willingness to do so. Government policy instruments such as mandatory regulation, incentives, promotion, and education can be used to influence parental intentions. Policy measures can encourage parents' intentions to vaccinate their children. Consequently, governments can use policy instruments like required regulation, incentives and promotion to control parents' intentions. This paper examines relevant literature on childhood vaccination policies in several countries, including Malaysia, using academic journals and observations from various articles. It is hoped that this study will add to existing knowledge about childhood vaccination policies around the world.

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INTRODUCTION

Children vaccinations are vital for children because it can strengthen their immune systems by shielding them from potentially fatal complications. Trent et al. (2019) stated that childhood immunization is one of the most important methods for preventing infectious disease. In addition, population and public health can be effectively protected by vaccination. When the vaccine protects most of society, it can provide them with a defence against a specific vaccine-preventable disease. For example, when a virus emerges in a community, it will be difficult for the virus to locate a susceptible individual to infect. As a result, the population will be safe from a disease known as herd immunity. In other words, vaccination not only protects children but also protects the entire community. Every year, vaccination prevents an estimated 2 to 3 million deaths. Still, if global vaccine coverage was expanded, an extra 1.5 million deaths could be prevented (Gualano et al., 2018). However, even though vaccines are available, vaccine reluctance affects almost every region, whether a postponement in vaccination or refusal. Internationally, vaccine uptake rates for infants and children are insufficient to monitor vaccine-preventable diseases, with vaccine-preventable outbreaks occurring worldwide. Therefore, some countries have enacted and strengthened childhood immunization policies to increase the vaccination rate (MacDonald et al., 2018). The form of rules, legislation, recommendations, and public health policy can significantly impact the vaccination rate. To some extent, higher vaccine coverage was linked to mandatory vaccination. Moreover, mandatory vaccination was linked to a lower measles incidence in countries with compulsory vaccination. These results may be used to help shape legislation aimed at rising vaccination rates (Vaz et al., 2020). Many states in the United States, as well as several countries in Europe, have universal vaccination programmes, and there is data that vaccination standards for school admission, daycare, and state benefits contribute to higher vaccine coverage (Haverkate et al., 2012; Abrevaya & Mulligan, 2011; Adams et al., 2019). Vaccination policies and regulations vary considerably across the globe. According to recent research, at least 62 countries have mandatory vaccinations (Vrdelja et al., 2020). Therefore, this study attempts to compare the Childhood Vaccination Policy in the United States, Australia, Europe and Malaysia.

THE UNITED STATES

In the United States, a significant immunization rate has eliminated infections, morbidity, mortality and saved tens of millions of dollars over the years. Routine vaccinations against common childhood diseases are estimated to have prevented about 20 million cases and reduced 42,000 fatalities due to these illnesses in the 2009 birth cohort, with 14 million dollars is saved (Siddiqui et al., 2013). Throughout the 1960s and 1970s, school entry laws became stricter to prevent the spread of measles in schools (Wilson et al., 2005). In the United States, each state requires proof of vaccination

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before admission to public schools, and some states have similar requirements for access to daycare centres and private schools. Nevertheless, State laws requiring vaccinations for school entry are varied (Siddiqui et al., 2013). These requirements may appear forced to families who lack other viable options for education or daycare. In addition, at the federal level, The Special Supplemental Nutrition Program for Women, Infants, and Children monitors preschool children's immunization status and encourages them to follow the prescribed schedule (Yang & Studdert, 2017).

Nonetheless, these school immunization laws have had a remarkable impact on vaccine-preventable diseases, especially prevalent among school-aged populations. In recent years, school vaccination laws have been demonstrated repeatedly to increase vaccination rates and decrease the incidence of vaccine-preventable diseases among children (Wilson et al., 2005). Furthermore, the effectiveness of the United States' immunization programmes was aided by mandatory vaccination in eradicating smallpox, polio eradication and reducing the occurrence of the majority of vaccine-preventable diseases by 98 to 99 per cent (Salmon et al., 2005). It can be supported by (Shaw et al., 2018), who stated that school immunization requirements had been credited with raising vaccination rates and decreasing the occurrence of vaccine-preventable diseases. Besides that, in the United States, vaccination status is linked to welfare benefits in several state-based welfare systems. For example, in California's CalWORKs welfare program, families who do not apply current immunization records or an exemption form for children under the age of six risk losing any of their cash assistance (Yang & Studdert, 2017). Besides that, families with children who do not have up-to-date immunizations may have their benefits withheld by Florida's Temporary Cash Assistance programme.

AUSTRALIA

Since 1998, Australia's vaccination policy has linked vaccine enforcement to financial incentives (Attwell et al., 2018). In the mid-1990s, there was a lack of immunization rates in Australia; just half of all children received the vaccines. To overcome the problem, the federal government adopted a comprehensive and integrated strategy that has been widely praised as a success. One part of the plan was the welfare incentive programme (Yang & Studdert, 2017). In 1998, the Australian government adopted a programme requiring parents to provide evidence of immunization or exemption to increase childhood vaccine coverage to be eligible for such welfare benefits as part of a more extensive immunization programme (Trent et al., 2019). After 1998, vaccination status has also defined eligibility for childcare subsidies, which provide an annual rebate not based on a mean test (Attwell et al., 2018). Besides that, parents receive a non-taxable payment of A$129 for each child between 18 and 24 months which meets the immunization criteria. The parents will receive the same amount if the kids are between four and five (Asari et al., 2019). In addition, Australia introduced the "No Jab, No Pay" legislation in 2016, removing moral or ethical objections to vaccination from the eligibility requirements for immunization-related financial benefits. The new law will give parents eligible for $15,000 in child care and family tax benefits (Trent et al., 2019). One of its main goals was to persuade all families to ensure that their children were vaccinated on the prescribed schedule. In addition, Australia is the entire country that links immunization to financial benefits. According to the " No Jab, No Pay " proposal, lower-income households may be more likely to vaccinate because they depend on the economic benefits associated with vaccination. Vaccine refusers are more likely to come from high-income parents, and hence may be able to prevent vaccination entirely by sacrificing the tax benefits (Trent et al., 2019). As the tax benefits could be worth up to AUD 15,000, lower-income households could not survive without the help (Trent et al., 2019). Although a family with a higher income may opt-out, a lower-income family may not.

In addition, people who depend on financial benefits or use childcare facilities are more likely to rethink vaccination after the policy was implemented. Moreover, a study done by (Trent et al., 2019) found that parents who depend on the financial benefits associated with "No Jab, No Pay" to get by were more likely to support the policy. In their study, almost 44 percent of people said they relied on the financial benefits associated with "No Jab, No Pay" to cover their family's expenses. On the whole, in a subsequent release of figures showing that vaccine coverage had risen to 92 to 93 per cent, the government asserted the policy's effectiveness (Attwell et al., 2018). Notably, a study done by Vaz et al. (2020) found that about a third of those who had previously expressed objections to vaccination said they had reconsidered vaccination due to the financial incentives associated with the "No Jab, No Pay" scheme. Interestingly, six months after the policy was implemented, completely immunized coverage of children under the age of one year and children under the age of five had also hit new peaks (Vaz et al., 2020).

EUROPE

In Europe, vaccine-preventable disease outbreaks have been a significant driver of policy changes. Since vaccine-preventable diseases have high infectivity, minor improvements in vaccination coverage may substantially affect disease incidence (Vaz et al., 2020). In a study done by (Vaz et al., 2020), they found that 7 of the 29 European countries such as Slovenia, Slovakia, Czech Republic, Poland, Latvia, Bulgaria, and Hungary required compulsory vaccination. In addition, parents face financial penalties in these countries if they do not comply with their vaccination's laws and standards (Vaz et al., 2020). For example, Hungary had the highest possible financial penalty, with parents facing a monetary penalty of up to 500000 forints (~€1600 or ~$1800) in 2016 if they did not comply with the vaccine regulations. In contrast, Bulgaria had a minor financial penalty, with parents facing a ceiling of 300 lev (~€150 or ~$170) (Vaz et al., 2020). Nevertheless, Latvia was the only country refusing to vaccinate without receiving a nonmedical exemption did not result in a financial penalty (Vaz et al., 2020). In Latvia, individuals who deny vaccines must sign a consent form, and health care providers must warn them of the risks of not vaccinating (Walkinshaw, 2011).

In Slovenia, they created a national vaccination policy for all children and teenagers, sponsored by the National Health Insurance, including mandatory vaccinations (against diphtheria, tetanus, pertussis, poliomyelitis, Haemophilus influenza type b, measles, mumps, rubella and hepatitis B) and vaccinations that are not required by law (against human papillomavirus (HPV) and pneumococcal infections) (Vrdelja et al., 2020). Slovenia has a vaccination programme that requires everybody to get vaccinated. Each child must obtain the vaccines mandated by statute, except for medical reasons, the parent having the option to refuse the vaccination. The health inspectorate will fine parents who do not comply (Vrdelja et al., 2020). A fine of up to €84 may be imposed if the parents do not follow the rules (MacDonald et al., 2018).

In Italy, some vaccines for children have been mandated, including diphtheria (1939), polio (1966), tetanus (1968), and hepatitis B (1991). Mandatory vaccinations were given free of charge, and children who did not obtain them faced fines and school exclusion. On the other hand, stubborn parents could be granted permission for noncompliant children to attend school after consulting with public health officers or the Minors Court. At the same time, the fines were rarely levied (Attwell et al., 2018). The regulations began in 2013 where national vaccination coverage fell significantly. A cross-wide study done in 2016 showed that 15.6 percent of the Italian parents were hesitant about vaccinating their children and 0.7 percent of them strongly opposed it (Attwell et al., 2018). This had significant implications for the ministry because it simultaneously caused the administration to start careful and urgent considerations in 2016. Many cases of a particularly severe measles outbreak occurred in January of 2017 that spread throughout the world, resulting in around 5000 cases and four deaths prompted the enactment of a new law. Hence, the Italian Parliament passed a Ministerial Decree in July 2017, creating new kindergarten attendance mandates for six vaccines (Attwell et al., 2018). To comply with the new law's provisions, children under six must have completed their vaccine cycles to attend educational programmes. For parents to prevent being fined, students over the age of six must follow the same rules by September 2017, the start of the school year (Paolo D'Ancona et al., 2019).

Parents who oppose vaccinations for nonmedical purposes now face fines under the latest mandates of €100-500. Nevertheless, are only medical exemptions are accepted for refusal (Paolo D'Ancona et al., 2019). As a result, vaccine coverage had expanded for all vaccines 6 months and 1 year respectively, at 24 and 30 months, due to new mandates. Measles vaccination coverage rose from 87.3 percent in 2016 to 91.8 percent in 2017 at 24 months of age and 94.1 percent at 30 months of age as of June 2018. Surprisingly, vaccine coverage for measles was more than 95 percent in six of the 21 regions and autonomous provinces (Paolo D'Ancona et al., 2019). When data from 2018 shows an improvement in vaccine coverages at the national level, the new mandates also indicate a success rate. The MMR vaccine, for example, had a coverage rate of 94.1 per cent (Paolo D'Ancona et al., 2019). Undoubtedly, mandatory vaccination programmes in Europe have been linked to higher vaccination rates for measles and pertussis, based on the example of a few countries.

MALAYSIA

The Malaysian National Health Policy was developed to safeguard people's health. Specifically, The National Immunization Programme (NIP) was designed in the 1950s as part of the National Health Policy (Faridah, 2017). Later, in 1989, the Extended Programme on Immunization (EPI) was created to enhance children's quality of life. Children should receive eight basic primary immunizations and be immunized entirely with the following vaccines by the age of 12 months, according to the national immunization programme, which is based on the Ministry of Health's immunization schedule (Krishna et al., 2019). The immunization programme started 50 years ago in Malaysia by introducing the diphtheria vaccine, followed by BCG, OPV, Measles, and Hepatitis B vaccines. Malaysia has achieved more than 90 percent immunisation coverage among children in the last decade (Krishna et al., 2019). Despite its enormous success, childhood immunization is becoming a growing concern. There are still significant problems in a country where outbreaks of vaccine-preventable diseases like diphtheria and measles occur regularly. Nonetheless, Malaysia's Health Ministry is keeping an eye on a growing trend in vaccine fear where a large number of parents with young children refuse to vaccinate their children; the number of cases increased from 470 in 2013 to 1292 in 2014, based on information gathered from government health clinics and hospitals (Krishna et al., 2019).

In Malaysia, an increasing number of parents are refusing to vaccinate their children, putting the country at unnecessary risk. The Malaysian Director-General of Health issued a press conference on the measles and diphtheria outbreak. In 2015, the number of cases of measles tripled compared to the previous year. Up until September 2015, there were 602 confirmed measles cases, compared to 235 cases in 2014 and 195 cases in 2013. According to reports, 65 per cent of the outbreak was caused by the child's parents failing to bring them to the doctor for immunization. (Azreena et al., 2016). Malaysia, on the other hand, does not have a mandatory vaccination programme for children. In Malaysia, there has never been a regulation that makes vaccination mandatory. In comparison to the countries mentioned above, Malaysia has no clear legislation requiring children to be immunized. The nearest Malaysia has on the statute on vaccination in Malaysia is Prevention and Control of Infectious Diseases Act 1988, which is more concerned with preventing infectious disease importation and regulating contagious disease spread in Malaysia (Asari et al., 2019). It has been noted that there is currently no debate on disease prevention and termination within a legal system. This is seen as a loophole that parents can use to prevent their children from receiving vaccinations. Since childhood vaccinations are not mandatory in Malaysia, it allows parents to refuse vaccination for their children by filling out the "Format for Vaccine Refusal" form (Mustafa Khan & Zulkipli, 2018). It is assumed that these parents are concerned about the flaws in Malaysia's immunization programmes for infants. They refused to allow their children to be vaccinated, citing reasons such as the vaccines containing pig DNA, which may cause their children to contract dangerous diseases.

As a result, it is proposed that strict vaccine laws would make it easier for the relevant parties to take appropriate action against parents who refuse vaccinations for unjustified reasons. Currently, the Ministry of Health only issues the vaccine schedule to health practitioners as a guideline. Besides that, in partnership with the Academy of Medicine, the Ministry of Health released clinical immunization guidance titled "Childhood Immunization." This guideline aims to assist general practitioners and paediatricians in making clinical decisions about childhood immunization by providing well-balanced evidence-based knowledge with the expectation that this guideline will help Malaysia reduce the number of complications (Mustafa Khan & Zulkipli, 2018).

Unfortunately, due to vaccine denial, Malaysia had begun to report a case from vaccine refusal. Five children died of diphtheria in June 2016, a disease that can be avoided with vaccination. Twenty-seven cases of diphtheria were discovered in August 2016 (Mustafa Khan & Zulkipli, 2018). Besides that, a study done by (Azreena et al., 2016) found out that, parents immunize their children in 98.2 percent of cases. However, 1.8 percent of parents did not vaccinate their children, with the majority citing "vaccines are dangerous" as their excuse. As a result, the incidence of vaccine-preventable diseases in Malaysia will continue to rise. There were 16 cases of diphtheria confirmed in 2019, with six deaths. Thirty cases of tetanus were registered. There were 915 cases of pertussis recorded, with 20 deaths. Most reports are due to a lack of immunization records (Sivanandam,2020). In contrast, if all parents in this country follow the National Immunization Program, not only will children's mortality and vaccine-preventable diseases be reduced, but it will also be cost-effective. This is since vaccination prices are much lower than the cost of treating vaccine-preventable diseases. As a result, if Malaysia wishes to adopt a legislative structure mandating childhood vaccination, some requirements, such as vaccination exemptions, can be changed to fit local Malaysian circumstances and people, so references to legislated laws in other countries can be made.

More or less, the current progress of vaccination policy in Malaysia can be seen from the initiative taken by the Perak Health Department, which would take legal action against parents if their unvaccinated children develop preventable diseases under the Child Act 2001 (Mustafa Khan & Zulkipli, 2018). Besides that, The Women, Family, and Community Development Ministry issued a statement indicating that denying vaccines by parents may be considered a crime under the Child Act 2001 (Mustafa Khan & Zulkipli, 2018). Nevertheless, despite the statements, the Ministry of Health recently issued a statement that contradicted them. Currently, in the August 2020 Parliament session, Health Minister Adham Baba restated in a written parliamentary report saying that The Malaysian Health Ministry will not use legal means to ensure that children receive mandatory vaccinations. Instead, the solution will be to strengthen and expand the existing delivery service, including an increase in case tracing, educational approaches, and promotions, according to the Minister of Health (Sivanandam, 2020).

CONCLUSION

No child should be held responsible for not receiving vaccinations. Vaccinations have unquestionably saved the lives of millions of people. Immunization protects the person who has been vaccinated and their families, their communities, and the country. Different governments use a range of mandate instruments that vary in size and form. The evidence on the efficacy of mandatory vaccination programmes is mixed; however, vaccination coverage rises when vaccination is related to school admission or financial penalties. (Abrevaya et al, 2011 ; Adams et al, 2019). Therefore, a provision of complete vaccination before enrolment in kindergarten or school is another way to achieve high coverage. However, it is a breach of a child's right to education to exclude them from attending school if they have not been vaccinated. If children are refused access to education, the government ensures that these children obtain an education. The government should think about the long-term effects of not allowing unvaccinated children to attend kindergarten. There are cheaper, more reliable ways to promote and maintain immunization demand. We need to figure out why parents are hesitant to vaccinate their children and then provide them with the necessary information and customized campaigns. There is also a need to involve healthcare providers regularly to enhance client contact.

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