



Parents' Readiness for Pharmacist-Led Vaccination Programs

Aguilar, Paula Araceli Mae¹, Apawan, Alikka Chris², Bustamante, Maria Vina³, Jamen, Sophea⁴, Juson, Jillian Mae⁵, Orozco, Oriel Angelo⁶, Pareñas, Trishia Nicole⁷, Rodas, Jamie Margaret⁸, Sala, Cherry Mae⁹, Villaruel, Carmela¹⁰, Faller, Erwin¹¹

Department of Pharmacy, San Pedro College; Davao City, 8000, Philippines

ABSTRACT

Vaccination is one of the most advancing forms in preventing diseases in our world today; increasing the immunization coverage rate and decreasing any potential-immunization errors makes parental decisions on immunization very important. Parents' awareness and beliefs about immunizations are the key factors that lead to their choices on vaccination. Hence, the study investigates the parents' readiness for pharmacist-led vaccination programs regarding awareness, cost, and accessibility. A quantitative descriptive cross-sectional design was used. Purposive sampling with a population of one hundred twelve (112) was also conducted on parents aging 41-60 years old with children aging from eighteen (18) and above residing in Davao City, Philippines. The parents' demographic profile mainly showed females (82.1%), between the age of 41-50 years old (65.2%), college graduates (62.5%), with a monthly income of \$438.36-\$876.68 (30.4%) and married (77.7%). The majority were not sufficiently aware of the pharmacist-led vaccination programs (78.6%). Nevertheless, most of them put their confidence in the pharmacist (75.0%), believing that it is safe to be vaccinated by an immunizing pharmacist (78.6%). However, respondents thought that it would be much more expensive for them to participate in a pharmacist-led vaccination (65.2%), but they are ready to spare a budget for it (57.1%). Most of the respondents showed that the majority have free access to pharmacies (72.3%), and they were available to get vaccinated during weekends and holidays (51.8%). Most of the respondents indicated that majority of them have free access to pharmacies (72.3%), and they were available to get vaccinated during weekends and holidays (51.8%). The researchers have determined that with a significant level below 0.005, there was an association between socio-demographic profiles of the parents and their readiness towards pharmacist-led vaccination programs. Parents appear to be ready to accept pharmacists to lead a vaccination program as immunizers. Additional influencing factors, such as attitudes, perceptions, and other potential factors that affect parents' preparation, may be included in future studies.

Keywords: Vaccination; Readiness; Parents; Pharmacist-Led Vaccination

1. Introduction

Vaccination is one of the most successful forms of preventing diseases in our world today, and it is a significant global health concern. Pharmacist-led vaccination services are introduced and practiced in countries like the United States, Australia, Portugal, Ireland, and the United Kingdom; with the help of pharmacists' role in administering vaccines increased their vaccination rate.[1]

In the United States, vaccine-preventable illnesses such as influenza, hepatitis B, and pneumococcal disease killed an average of 90,000 people per year. People who died from vaccine-preventable diseases went to their doctors but had not been immunized.[2] According to reports, influenza and pneumonia are the fifth-highest cause of death in Americans aged 65 and over. When children attend school in the United States, 95 percent of them have been vaccinated, but about a quarter of them have not completed the primary series of immunizations by the age of two. Many people in the United States are still at risk of contracting potentially fatal illnesses because they have not been vaccinated.[3]

Increasing the immunization coverage rate and decreasing any potential immunization errors makes parental decisions on immunization very significant. Parents' awareness and beliefs about immunizations are the key factors that lead to their choices on vaccination. Many obstacles are present in vaccination, including vaccine misinformation, adverse effects of vaccines, vaccine-preventable diseases, and the emergence of conditions following vaccines'

* Corresponding author: Prof. Dr. Erwin M. Faller
E-mail address: erwin_faller@spcdavao.edu.ph

administration.[4] Much research shows that vaccinations are the most effective way of preventing vaccine-preventable infections. However, not all parents believe that it will benefit their children, and some are still hesitant since they lack knowledge about the efficacy of these vaccines. [5] If the pharmacy is willing to help all healthcare practitioners, patients ought to be satisfied with the outcomes of this direction of vaccination. It has been confirmed that pharmacy-based flu vaccination services provide very successful and satisfactory patient reviews. The patients have identified pharmacists with an effective service assessment rate ranging from 92% to 98% as productive vaccine providers.[6] The basis in determining whether or not the vaccination is a success is knowing if the patients will recommend the pharmacy's service or return.

The Food and Drug Administration and the Department of Health collaborated with the Philippine Pharmacists Association in planning to train and authorize FDA-licensed community pharmacists to perform and administer vaccines on adults and other immuno-products. Registered pharmacists who have completed a course of training can vaccinate healthy individuals as mandated by the FDA. [7,8,9] This will ensure that healthy people are protected from infectious diseases and ensure that vulnerable populations are covered, such as babies and children, pregnant women, the elderly, persons with disabilities, and chronic medical conditions. The Republic Act 10918, also known as the Philippine Pharmacy Act, enables licensed and trained pharmacists to administer adult vaccines. The renewed emphasis on immunization and the potential need for increasing vaccine needs should motivate pharmacists. Re-evaluate what their organizations can do to boost their community immunization rates by prescribing immunizations in other ways and encouraging parents to have their children vaccinated. Pharmacists may contribute to this initiative. [11, 12] This study aimed to investigate the parents' readiness for pharmacist-led vaccination programs in terms of awareness, vaccine cost, and pharmacy accessibility and to determine the significant relationship between socio-demographic profiles of the parents and their readiness towards pharmacist-led vaccination.

2. Methods

2.1 Study Design

This study used a quantitative descriptive cross-sectional research design that met specific objectives on the subject being studied. The purpose of a descriptive design was intended to determine the readiness of parents regarding pharmacist-led vaccination programs in Davao City used the Google Form questionnaires administered on social media platforms, specifically Facebook. Moreover, a cross-sectional study was used as this study was a population-based survey that aims to assess the dominant characteristics at a certain point in time. Lastly, purposive sampling was used in this study based on inclusion and exclusion criteria. The respondents are limited to parents forty-one to sixty (41-60) years old with children from eighteen (18) and above years old that reside in Davao City. Ultimately, this study has identified a significant relationship between socio-demographic and readiness of parents for pharmacist-led vaccination in Davao City. Prior to undertaking this research study, Cronbach alpha was used to run a pilot test with 30 respondents, yielding a score of 0.826.

2.2 Population

The researchers implemented a purposive sampling method for parents invited to participate. The population of the study inclusions was parents from forty-one to sixty (41-60) years old with children from eighteen (18) and above years old that reside in Davao City. Single-parents, married, separated, annulled, and widowed were the parents' qualifications that can be allowed to participate in answering the surveyed questionnaire. Either of the parents can partake in answering the surveyed questionnaire. However, parents forty (40) years old below and sixty-one (61) years old above with no and with children aging below seventeen (17) years old and are not residing in Davao City are restricted from answering the survey form. A form of online consent was given before proceeding to the survey questionnaires and was documented thoroughly. The respondents' participation is not obliged in any form and can decline at any time.

2.3 Instruments

The researchers used a research questionnaire in the form of an online survey. Specifically a Google Form, the researchers used polar questions such as Yes or No to assess the respondent's readiness regarding pharmacist-led vaccination programs in Davao City. The researchers also added a primer to give basic information and current situations to the participant about pharmacist-led vaccination programs. The questionnaires are divided into two parts. Part one of the questionnaire was all about the information of the participant. In the Google Form, a basic profile was obtained to serve as identification and verify if the participant is currently residing in Davao City. Part two measured parents' readiness in terms of pharmacist-led vaccination programs and is subdivided into three topics; topic one was all about the accessibility of the parents, whether they could vaccinate in a pharmacy. Topic two is about the cost associated with getting a vaccine, and topic three concerns the awareness of getting vaccinated in a Pharmacy setting. Each topic contains five questions each; a total of fifteen yes/no question is asked in part two. The survey takes place more or less than 20 minutes to complete but varies from the speed of the participant's way of responding.

2.4 Data Collection Procedure

All data collected by the respective pharmacy researchers were through online mediums, mainly through a social media platform (e.g., Facebook) via an online instrument such as Google forms. Before conducting the survey, the researchers gave a letter to the social media admin groups to ask permission to collect a list of parents' names and information via Google forms that are willing to participate in the study. Informed consent was available in the Google forms which the link was posted in Facebook groups, specifically parents that reside in Davao City, to ensure the participants' mutual agreement and privacy.

All data collected are comprehensively analyzed in the study and kept private by the researchers.

The progress of this study is closely and highly monitored by San Pedro College- Research Ethics Committee. In terms of the collected data's disposal, the researchers have securely removed the participants' sensitive information as the retention period has passed and the data is no longer of value or to meet ethical requirements.

2.5 Data Analysis

Descriptive statistics, specifically frequency and percentage, would present the respondents' demographic profile regarding age, gender, education level, economic status, and marital status. This would also determine the parents' readiness for pharmacist-led vaccination programs in terms of awareness, cost, and accessibility. Pearson chi-square test statistics had been used to determine if there is a significant association between parents' socio-demographic and their readiness for pharmacist-led vaccination programs in Davao city.

2.6 Ethical Considerations

All of the study participants obtained written consent containing the aims and purpose. According to the Republic Act, 10173 or the Data Privacy Act of the Philippines, all of the information extracted shall be accurate and relevant for which it is to be used, remain confidential, and be utilized for this research study only. The progress of this study is closely and highly monitored by the San Pedro College- Research Ethics Committee with a protocol number of 2021-0136.

A detailed discussion is given to the participants as to why the research is being conducted, why they are invited to participate, what potential benefits, dangers, and burdens could arise for them individually as a result of participating in the study, and what advantages they and the group can be expected to obtain as a result of the research. The participant's right to anonymity should always be respected and protected. There are no expenses or compensation for agreeing to participate for the respondents as this can form coercion. The participant also has the right to decline or accept the survey questionnaire, and this must be obtained and recorded. Participants can also withdraw from the study without any prior rationale, and they should agree for their anonymous data to be perused in the future.

3. Results

Table 1- Socio-demographic Profile of the Respondents

Profile	Segmentation	n=112	Percentage Distribution (%)
Sex	Female	92	82.1
	Male	20	17.9
Age	41-50	73	65.2
	51-60	39	34.8
Education	College Graduate	70	62.5
	College Level	18	16.1
	Elementary Level	1	0.9
	Elementary Graduate	3	2.7
	High school Graduate	7	6.3
	High school Level	4	3.6
	Post Graduate	9	8.0
Monthly Income	Less than \$219.17	22	19.6
	\$219.19 – \$438.34	23	20.5
	\$438.36 – \$876.68	34	30.4
	\$876.70 – \$1,534.19	15	13.4
	\$1,534.21 – \$2, 630.04	11	9.8
	\$ 2,630.06 – \$4, 383.39	4	3.6
	Above \$4, 383.41	3	2.7
Marital Status	Married	87	77.7
	Annulled	2	1.8
	Separated	10	8.9
	Single	6	5.4
	Widowed	7	6.3

Table 2- Parents' readiness in terms of Awareness, Cost, and Accessibility

AWARENESS	Frequency (%)	
	No	Yes
Are you aware that there is a pharmacist-led vaccination program in the community pharmacy/drugstore?	88 (78.6%)	24 (21.4%)
Are you aware that pharmacists in the community pharmacy/drugstore providing the pharmacist-led vaccination program are qualified, trained, and licensed to administer vaccines?	65 (58.0%)	47 (42.0%)
Are you willing to be vaccinated by a qualified, trained, and licensed pharmacist in the community pharmacy/drugstore?	28 (25.0%)	84 (75.0%)
Will you trust your family to be vaccinated by a qualified, trained, and licensed pharmacist in the community pharmacy/drugstore?	28 (25.0%)	84 (75.0%)
Do you agree that it is safe to get vaccinated through a pharmacist-led vaccination program in the community pharmacy/drugstore?	24 (21.4%)	88 (78.6%)
COST		
Are you willing to pay up to \$60 per vaccine for a pharmacist-led vaccination?	73 (65.2%)	39 (34.8%)
Do you think your monthly income is enough to get pharmacist-led vaccination for the whole family?	65 (58.0%)	47 (42.0%)
Are you willing to allocate a budget to get vaccinated for a pharmacist-led vaccination?	48 (42.9%)	64 (57.1%)
Do you think that a vaccination done in a community pharmacy/ drugstore will cost you less?	45 (40.2%)	67 (59.8%)
Will the cost of the vaccine be a factor that will affect your decision to get vaccinated despite the good benefits that you and your family can get?	68 (33.9%)	74 (66.1%)
ACCESSIBILITY		
Have you visited a community pharmacy/ drugstore?	36 (32.1%)	76 (67.9%)
Is there a community pharmacy/ drugstore near you?	31 (27.7%)	81 (72.3%)
If vaccines become available in the community pharmacy/ drugstore near you, are you willing to get vaccinated and administered by an immunization pharmacist?	33 (29.5%)	79 (70.5%)
Are you willing to get vaccinated during the weekend and holidays (when clinics are closed and the doctors are not present) by an immunizer pharmacist?	54 (48.2%)	58 (51.8%)
Are you willing to discuss your questions and concerns about vaccination with pharmacists?	12 (10.7%)	100 (89.3%)

Table 3- Testing Significant Relationship between Socio-demographic Profile of the Parents and their Readiness towards pharmacist-led Vaccination Programs

Variables		Chi-square	P value
Awareness	Sex	0.007	0.942
	Age	0.035	0.756
	Education	21.652	0.001*
	Civil Status	5.410	0.114
	Income	11.253	0.005*
Cost	Sex	0.210	0.950
	Age	10.952	0.001*
	Education	5.489	0.104
	Civil Status	15.420	0.001*
	Income	0.043	0.842
Accessibility	Sex	10.142	.000*
	Age	0.542	0.495
	Education	9.452	0.001*
	Civil Status	0.814	0.675
	Income	0.952	0.710

4. Discussion

Parental involvement and their consideration are essential in advocating pharmacist-led vaccination programs. Alongside, pharmacists are healthcare practitioners who can provide vital support in vaccines as essential disease control. Moreover, the pharmacy-based system can promote immunization promotion in the community and is due to the convenient access to vaccines that community pharmacies have and the mobilization resources for healthcare providers. However, there is still much to consider regarding pharmacist-led vaccine programs, such as the various factors, costs, accessibility, and apprehension that influenced parent's readiness. Through evaluating the survey result, the majority of the respondents were female (83.86%), between the age of 20-30 years old (43.12%), college graduate (48.94%), with a monthly income of Less than ₱10,957 (36.50%), and married (56.08%).

The demographic profile of the respondents was determined as it may influence the readiness of the parents to accept a pharmacist-led vaccination program. A study entitled, Gender and Immunization by the World Health Organization (2010) stated that women are responsible for the consequences of their decisions as measured by a child's health, and her behavior (or misbehavior) is blamed for the child's health. [52] Meanwhile, Seckin et al. found that age influenced the relationship between medical satisfaction and reasonable health beliefs. [56] A study by Kamanda reported a significant relationship between marital status and parents' monthly income and completing the immunization schedule. [56] In terms of education, a study by Mastrodomenico [53] reported that those who had a higher level of education had a higher likelihood of getting the vaccine than those who have less educational attainment. Another study by Krishna et al. also reported that educational level is one of the critical factors affecting the patients' decision in getting an immunization, and patients with low academic levels tend to delay or skip their vaccination. [55] Hence, in this study, it can be reported that having college-level attainment can increase the probability of getting vaccinated through pharmacist-led vaccination programs. Contrary to monthly income, in research determining the COVID-19 acceptance in Russia, it was stated in the study that monthly income is a factor where people with lower incomes were willing to accept the vaccine than those with higher incomes. Allowing pharmacists to administer vaccines has been considered by the Department of Health (DOH) in the Philippines as they are one of the frontliners in delivering health care service in times of pandemic, and considering their availability in most pharmacy stores, the vaccination drive of the government could substantially increase coverage rate. [68]

The awareness category indicates that most respondents (78.6%) were not sufficiently aware of the pharmacist-led vaccination programs. According to the International Pharmaceutical Federation (FIP), [77] Retail drugstores in the Philippines are only known to provide dispensing and counseling services. Therefore the population in the country is only aware of pharmacies as a means for purchasing and dispensing drugs. Nevertheless, most of the respondents (75.0%) put their confidence in the pharmacist, believing that it is safe for their families to be vaccinated by an immunizing pharmacist in a pharmacy. According to Desphande et al., around 97% of the responding parents felt confident about the pharmacists providing vaccination to their children, and parents are also willing to accept pharmacists as immunizers for their children. [51] However, with the current funding coming from the national government, the vaccination drive officiated by the national government is free of charge. Thus, some of the factors stipulated herein may not influence their willingness to receive a vaccine administered by a registered pharmacist. The results also show that if the vaccination program is to be administered by a registered pharmacist, most of them are willing to be vaccinated. Bounthavong et al. [78] reflected good communication between patient and pharmacist, resulting in patients receiving reasonable overall satisfaction with the pharmacist-run immunization clinic in terms of professionalism and access to vaccination. Likewise, Grabenstein et al. [79] conducted a similar study involving Patients Vaccination experience in a pharmacy. They concluded that respondents considered the pharmacy advantageous, compared with other vaccine providers, based on access, proximity, trust, convenience, and cost, where the majority of them were satisfied and would likely recommend it to others.

Respondents' view indicated that if a parent shoulders the vaccination costs, they may be unwilling to participate as their monthly income is not enough for the vaccine. However, most of them are willing to allocate a budget for the vaccination even if one of the factors that may influence them to participate or received vaccination will be the vaccine costs. Matta et al. included the cost in their research as one of the factors contributing to the decision-making process in vaccination, and it was reported that the cost of these vaccines seems to be one of the determinants regarding patients/parents receiving the vaccination. [76] However, most of them are willing to allocate a budget for the vaccination even if one of the factors that may influence them to participate or received vaccination will be the vaccine costs. A study stated in Silo [68] in their assessment study of pharmacy-based immunization (PBI) prior to its utilization in Manila. The study showed that 80% of the respondents support saving money and avail themselves of the immunization, given that it is available in their local pharmacies. These results suggest that the government should allocate a budget to boost vaccination rates by providing free vaccination to cater to low-income families.

The survey results indicated the readiness among parents towards a pharmacist-led vaccination program in terms of accessibility. It was shown that the majority of them have ready access to pharmacies and drugstores within their community, which when the vaccine is available, they willing to be vaccinated by a pharmacist even during holidays and weekends. In one study by Burson et al. regarding the national pharmacy chain administering over six million vaccines, it was reported that nearly a third of that immunization happened at night and on weekends and holidays. [74] Calo et al. also revealed parents' willingness that 29% of parents would be willing to get a vaccine for their children at a pharmacy and that parental willingness was also correlated with believing that pharmacists are skilled at administering vaccines. [80] Also, Murphy et al. [43] found out that 70% of the population in the United States administered in pharmacies occurred during weekends and holidays. Likewise, the majority of them are willing to discuss questions and concerns about vaccination with the pharmacists. Hence, the authors suggested that it is essential for pharmacists to deliver and address patient concerns to assure patients that vaccines are safe and effective means of preventing diseases. [75] By building effective strategies in terms of communication, it will allow parents to make informed decisions.

The statistical analysis results revealed a significant relationship ($p > 0.05$) on the readiness among parents to pharmacist-led vaccination programs regardless of demographic profile. In terms of accessibility and awareness, it was shown that there was a significant relationship ($p < 0.05$) on the readiness among parents to receive a pharmacist-led vaccination program when analyzed according to sex, education, and income. This means that the readiness among parents to receive a vaccine administered by a registered pharmacist can be influenced by these factors. As stated in the study of Mercier et al., it is an essential factor in predicting the immunization status, especially to the parental apprehension and beliefs about vaccines. [41] The fact that deciding to

vaccinate is a socially forced choice that concerns a child's health makes vaccine-related decisions significant and involving parents. [42] Children who came from wealthy families are more likely to be vaccinated because they can go to healthcare facilities than children coming from substandard households. [46] Parents with more income can vaccinate their children because they can enforce an emergency, which removes those who may not be able to raise the required costs.

It is also a significant reason that these parents save money every time they immunize their children in which some of the low-income families cannot afford to do so. [43] The parents' educational attainment may influence one's awareness about vaccinations, which may affect one's decision regarding their children's health. This can impact children's healthcare-seeking behavior because it increases knowledge and allows for a better understanding of immunization. [44] Vaccination programs, including men or fathers, are uncommon. Often, the information does not reach them. Vaccination programs that only target women also ignore the crucial influence men have over women's decision-making authority. [45] The vaccination rate is favorably correlated with gender-related characteristics relevant to women's capability to make financial decisions for themselves and their families. [46] According to a study done in Uganda, most of the respondents who answered the survey were female. This impacts the immunization level within the areas because it is the mothers who are very much involved in taking care of the child. Very few men or fathers take part in knowing about the child's immunization. [47] A cross-sectional study done in Mozambique revealed no significance between the parents' age in accordance to vaccination. [48] According to Glenda et al. (2004), both younger and older parents have been associated with incomplete vaccination. In this study, the marital status does not have a significant relationship in vaccination; this could be due to the difference caused by a different study population or the limited sample size. Contrarily, other studies have shown a significant relationship; according to Kamanda, married women are making sure that their children are immunized. Hence the civil status of the parents contributed more to the immunization coverage [46]. For the cost, According to a study by Lin et al. (2020), the results revealed that younger aged participants were willing to pay for an amount of US\$43/57, and the professional, managerial and self-employed group had the highest rating for their willingness to pay for over US\$72 for the COVID-19 vaccine. The increase in the participants' willingness to pay is associated with their monthly income. [81] A study by Berghea et al. shows that participants aging from the mean of the participants' age were 44.12 years old are willing to pay for the vaccine against SARS-CoV-2, the option "income large enough to allow me to have to control anything I need but with a tight control of spending" garnered the highest rating with 147 (72.4%) out of 203. [82] According to Costa-Font et al., [83], married parents are willing to pay \$154.2, and single/unmarried ones are willing to pay \$127. Married parents are more likely to afford and save up money for their vaccination than single mothers who shoulder a higher share of the child's healthcare needs. [84]

5. Conclusion

Pharmacists' hands-on role in administering vaccines has increased the vaccination rollout of the healthcare system. The study found that most respondents responded positively that they are ready for pharmacist-led vaccination programs in terms of awareness, cost, and accessibility. The readiness among parents to be vaccinated by a registered pharmacist might be because pharmacists are one of the frontliners in the delivery of healthcare services and one of the first points of contact between healthcare providers and patients contributes to parents' readiness to get vaccinated by a registered pharmacist. As a result, pharmacists and pharmacy educators should use the available possibilities and approaches to raise awareness among parents, society, and future studies. The findings of this study should be forwarded to the Davao City Local Government Unit and the Philippine Pharmacist Association to develop appropriate initiatives. Additional influencing factors, such as attitudes, perceptions, and other potential factors that affect parents' preparation, may be included in future studies. Hopefully, this research could contribute to an understanding of parent's readiness towards a pharmacist-led vaccination program, and its findings and recommendation can serve as a basis for future studies.

Acknowledgements

The authors gratefully acknowledge all participants of the study and San Pedro College for allowing us to do our study.

REFERENCES

1. Poudel, A., Lau, E., Deldot, M., Campbell, C., Waite, N. M., & Nissen, L. M. Pharmacist role in vaccination: Evidence and challenges [Internet]. 2019 [cited 2020 September 21] vaccine, 37(40), 5939–5945. <https://doi.org/10.1016/j.vaccine.2019.08.060>
2. American Society of Hospital Pharmacists. ASHP Guidelines on the Pharmacist's Role in Immunization [Internet]. 2003 [cited 2020 September 21] Available from: <https://www.ashp.org/-/media/assets/policy-guidelines/docs/guidelines/pharmacists-role-immunization.ashx>
3. Qutaiba B Al-Iela, O., Bahari, M. B., Al-Qazaz, H. K., Salih, M. R., Jamshed, S. Q., & Elkalimi, R. M. Are parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance? a mixed method study [Internet]. 2014 [cited 2020 September 21] BMC pediatrics, 14, 20. Available from: <https://doi.org/10.1186/1471-2431-14-20>
4. Harris P. Parents' Perceptions of Healthcare Influences on Their Decisions to Vaccinate Their Children. Walden Dissertations and Doctoral Studies [Internet]. 2020 [cited 2020 September 21] Available From: <https://core.ac.uk/download/pdf/304687311.pdf>
5. Kirkdale, C.L., Nebout, G., Megerlin, F., Thornley, T. Benefits of pharmacist-led flu vaccination services in community pharmacy [Internet]. 2017 [cited 2020 September 21] Annales Pharmaceutiques Françaises, Volume 75, Issue 1. Pages 3-8, ISSN 0003-4509. Available from: <https://doi.org/10.1016/j.pharma.2016.08.005>
6. Philippines Department of Health. DOH identifies vaccine hesitancy as one of the reasons for measles outbreak in Manila [Internet]. 2019 Available from: <https://www.doh.gov.ph/node/16721>

7. Philippines Department of Health. Protected Together: Vaccines Work! - DOH, WHO, and UNICEF Celebrate World Immunization Week 2019 [Internet]. 2019 [cited 2020 September 21] Available from: <https://www.doh.gov.ph/press-release/Protected-Together-Vaccines-Work-DOH-WHO-and-UNICEF-celebrate-World-Immunization-Week-2019>.
8. Greenwood B. The contribution of vaccination to global health: past, present and future. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences* [Internet]. 2014 [cited 2020 September 27]; 369(1645), 20130433. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4024226/doi.org/10.1098/rstb.2013.0433>
9. Food and Drug Administration (FDA) and Philippine Pharmacists Association (PPHA) Mull Plan to Authorize Community Pharmacists to Administer Vaccines [Internet]. 2014 [cited 2021 January 3] Available from: <https://www2.fda.gov/ph/index.php/advisories-2/pharmaceutical-2/192675-fda-advisory-no-2014-067#:~:text=The%20course%20will%20include%20the,rare%20case%20that%20it%20occurs>.
10. An Act Regulating and Modernizing the Practice of Pharmacy in the Philippines, Repealing for the Purpose Republic Act Numbered Five Thousand Nine Hundred Twenty-One (R.A. No. 5921), Otherwise Known as the Pharmacy Law. [Internet]. (n.d.) [cited 2021 January 3] Available from: https://www.lawphil.net/statutes/repacts/ra2016/ra_10918_2016.html
11. World Health Organization. Global and regional immunization profile: Geneva [Internet]. 2018 [cited 2020 September 21] Available from: https://www.who.int/immunization/monitoring_surveillance/data/g_s_gloprofile.pdf?ua=1,
12. Blake, E. W., Blair, M. M., & Couchenour, R. L. Perceptions of pharmacists as providers of immunizations for adult patients [Internet]. 2003 [cited 2020 September 21] *Pharmacotherapy*, 23(2), 248–254. Available from: <https://doi.org/10.1592/phco.23.2.248.32083>
13. Isenor, J. E., Slayter, K. L., Halperin, D. M., Mcneil, S. A., & Bowles, S. K. Pharmacists' immunization experiences, beliefs, and attitudes in New Brunswick, Canada [Internet]. 2018 [cited 2020 September 21] *Pharmacy practice*, 16(4), 1310. Available from: <https://doi.org/10.18549/PharmPract.2018.04.1310>
14. Doherty M., Buchy P., Standaert B., Giaquinto C., Cohrs D. Vaccine impact: Benefits for human health [Internet]. 2016 [cited 2020 September 27] *Vaccine*. Volume 34, Issue 52. Pages 6707-6714, ISSN 0264-410X, Available from: <https://doi.org/10.1016/j.vaccine.2016.10.025>.
15. Chootipongchaiwat, S., Chantarasapornchit, V., Kulpeng, W., Ceria, J. A., Tolentino, N. L., & Teerawattananon, Y. Vaccination program in a resource-limited setting: A case study in the Philippines [Internet]. 2016 [cited 2020 September 27] *vaccine*, 34(40), 4814–4819. Available from: <https://doi.org/10.1016/j.vaccine.2016.08.014>
16. Justiz Vaillant A., Grella M. Vaccine (Vaccination) [Internet]. 2020 [cited 2020 September 27] Treasure Island (FL): StatPearls Publishing. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK532895/>
17. World Health Organization. How do vaccines work?. Internet [2020] Available from: <https://www.who.int/news-room/feature-stories/detail/how-do-vaccines-work>
18. Orenstein, W. A., & Ahmed, R. Simply put: Vaccination saves lives. *Proceedings of the National Academy of Sciences of the United States of America* [Internet]. 2017 [cited 2020 September 27] 114(16), 4031–4033. Available from: <https://pubmed.ncbi.nlm.nih.gov/28396427/doi.org/10.1073/pnas.1704507114>
19. Gualano M., Oliverio E., Voglino G., Rossello P., Vicenti C., Bert F., & Siliquini R. (2019). Knowledge, attitudes and beliefs towards compulsory vaccination: a systematic review, *Human Vaccines & Immunotherapeutics*, 15:4, 918-931, Available from: <https://doi.org/10.1080/21645515.2018.1564437>
20. Randolph, H. E., & Barreiro, L. B. Herd Immunity: Understanding COVID-19 [Internet]. 2020 [cited 2020 September 27] *Immunity*, 52(5), 737–741. Available from: <https://doi.org/10.1016/j.immuni.2020.04.012>
21. Arora, K. S., Morris, J., & Jacobs, A. J. Refusal of Vaccination: A Test to Balance Societal and Individual Interests [Internet]. 2018 [cited 2020 September 27] *The Journal of clinical ethics*, 29(3), 206–216. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6457107/>
22. Mehlman, M. J., & Lederman, M. M. Compulsory Immunization Protects Against Infection: What Law and Society Can Do [Internet]. 2020 [cited 2020 September 27] *Pathogens & immunity*, 5(1), 1–7. Available from: <https://doi.org/10.20411/pai.v5i1.344>
23. National Research Council (US); Institute of Medicine (US). Children's Health, The Nation's Wealth: Assessing and Improving Child Health [Internet]. 2004 [cited 2020 September 27] (DC): National Academies Press (US); Influences on Children's Health. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK92200/>
24. Institute of Medicine (US) Committee on Nervous System Disorders in Developing Countries [Internet]. 2001 [cited 2020 September 27] *Neurological, Psychiatric, and Developmental Disorders: Meeting the Challenge in the Developing World*. (DC): National Academies Press (US); 5, Developmental Disabilities. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK223473/>
25. Klepac P., Funk S., Hollingsworth D., Metcalf E., Hampson K. Six challenges in the eradication of infectious diseases [Internet]. 2015 [cited 2020 September 27] *Epidemics*, Volume 10, Pages 97-101, ISSN 1755-4365, Available from: <https://doi.org/10.1016/j.epidem.2014.12.001>
26. Graham B. S. Advances in antiviral vaccine development [Internet]. 2013 [cited 2020 September 27] *Immunological reviews*, 255(1), 230–242. Available from: <https://doi.org/10.1111/imr.12098>
27. Whitty C. J. Milroy Lecture: eradication of disease: hype, hope and reality [Internet]. 2014 [cited 2020 September 27] *Clinical medicine (London, England)*, 14(4), 419–421. Available from: <https://doi.org/10.7861/clinmedicine.14-4-419>
28. Quilici, S., Smith, R., & Signorelli, C. Role of vaccination in economic growth [Internet]. 2015 [cited 2020 September 27] *Journal of market access & health policy*, 3, 10.3402/jmahp.v3.27044. Available from: <https://doi.org/10.3402/jmahp.v3.27044>
29. Akil, L., & Ahmad, H. A. The recent outbreaks and reemergence of poliovirus in war and conflict-affected areas. *International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases* [Internet]. 2016 49, 40–46. Available from: <https://pubmed.ncbi.nlm.nih.gov/27237735/doi.org/10.1016/j.ijid.2016.05.02>
30. Hardt K., Bonanni P., King S., Santos J.S., El-Hodhod M., Zimet G., Preiss S. Vaccine strategies: Optimising outcomes [Internet]. 2016 [cited 2020 September 27] *Vaccine*, Volume 34, Issue 52, Pages 6691-6699, ISSN 0264-410X, Available from: <https://doi.org/10.1016/j.vaccine.2016.10.078>.
31. Anderson E. L. Recommended solutions to the barriers to immunization in children and adults [Internet]. 2014 [cited 2020 September 27] *Missouri medicine*, 111(4), 344–348. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6179470/>
32. Ames, H. M., Glenton, C., & Lewin, S. Parents' and informal caregivers' views and experiences of communication about routine childhood vaccination: a synthesis of qualitative evidence [Internet]. 2017 [cited 2020 September 27] *The Cochrane database of systematic reviews*, 2(2), CD011787. Available from: <https://doi.org/10.1002/14651858.CD011787.pub2>
33. Uy, J., 2021. FDA To Allow Vaccination In Drug Stores Soon. [online] INQUIRER.net. Available at: <<https://newsinfo.inquirer.net/636567/fda-to-allow-vaccination-in-drug-stores-soon>> [Accessed 1 January 2021].
34. An Act Regulating and Modernizing the Practice of Pharmacy in the Philippines, Repealing for the Purpose Republic Act Numbered Five Thousand Nine Hundred Twenty-One (R.A. No. 5921), Otherwise Known as the Pharmacy Law. [Internet]. (n.d.) [cited 2021 January 3] Available from: https://www.lawphil.net/statutes/repacts/ra2016/ra_10918_2016.html
35. Facebook.com. 2019. *Mercury Drug Corporation*. [online] Available at: <<https://www.facebook.com/mercurydrugph/posts/1706825339461053>> [Accessed 3 January 2021].
36. FE, Andre, R., M. Watanabe, M., L. Cooper, H., E. Dubé, M., J. Zipprich, K., MacDonald, N., . . . A. Brackett, M. (1970, January 01). A postpartum vaccination promotion intervention using motivational interviewing techniques improves short-term vaccine coverage: PromoVac study. Retrieved January 18, 2021, from <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-5724-y>

37. Robles, Y. Pharmacy-based immunization in the Philippines: the Hygelan. The official letter of the Philippine Pharmacists Associations, INC; 2015 [Cited 2020 Oct 12]. volume 8, issue 1, pp. 3. Available from: <http://www.philpharmacists.org/Vol%208,%20Issue%201.pdf>
38. Al-lela, O. Q., Bahari, M. B., Al-Qazaz, H. K., Salih, M. R., Jamshed, S., Elkalmi, R. (2014). Are parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance?. [Internet] Available from: <https://bmcpediatr.biomedcentral.com/articles/10.1186/1471-2431-14-20>
39. Ongpoy, T. Level of Preparedness of the Filipino Pharmacists as Providers of immunizations for adult patients. ASIO journal of Pharmaceutical & Herbal Medicines Research [Internet]. 2016 [cited 2020 October 10] 2. 4-8. Available from: https://www.researchgate.net/publication/293827177_Level_of_Preparedness_of_the_Filipino_Pharmacists_as_Providers_of_immunizations_for_adult_patients
40. Zagminas, K., Surkiene, G., Urbanovic, N., & Stukas, R. Parental attitudes towards children's vaccination [Internet]. 2007 [cited 2020 October 11] Available from <https://pubmed.ncbi.nlm.nih.gov/17329952/>
41. Mercier, H., & Miton, H. Cognitive Obstacles to Pro-Vaccination Beliefs [Internet]. 2015 [cited 2020 October 11] Available from: <https://pubmed.ncbi.nlm.nih.gov/26522341/>
42. Kirkdale, C. L., Nebout, G., Megerlin, F., & Thornley, T.. Benefits of pharmacist-led flu vaccination services in community pharmacy [Internet]. 2017 [cited 2020 January 16] *Annales pharmaceutiques francaises*, 75(1), 3-8. Available from: <https://doi.org/10.1016/j.pharma.2016.08.005>
43. Murphy, P. A., Frazee, S. G., Cantlin, J. P., Cohen, E., Rosan, J. R., & Harshburger, D. E. Pharmacy provision of influenza vaccinations in medically underserved communities [Internet]. 2015 [cited 2020 January 16] *Journal of the American Pharmacists Association : JAPhA*, 52(1), 67-70. Available from: <https://doi.org/10.1331/JAPhA.2012.10070>
44. Cannon, A., Taitel, M., Fensterheim, L., Huang, Z., Lou, Y., & Goad, J. Vaccinations Administered During Off-Clinic Hours at a National Community Pharmacy: Implications for Increasing Patient Access and Convenience [Internet]. 2012 [cited 2020 January 16] In Presentation at the 2012 National Immunization Conference. Available from: Available from: <https://doi.org/10.1370/afm.1542>
45. Anderson, C., & Thornley, T.. Who uses pharmacy for flu vaccinations? Population profiling through a UK pharmacy chain. *International journal of clinical pharmacy*, 38(2), 218-222 [Internet]. [Internet]. 2012 [cited 2020 January 16] Available from: <https://doi.org/10.1007/s11096-016-0255-z>
46. Bach, A. T., & Goad, J. A. (2015). The role of community pharmacy-based vaccination in the USA: current practice and future directions. *Integrated pharmacy research & practice*, 4, 67-77. <https://doi.org/10.2147/IPRP.S63822>
47. Nissen, Lisa & Poudel, Arjun & Lau, Esther & Deldot, Megan & Campbell, Chris & Waite, Nancy & Nissen, Lisa. (2019). Pharmacist role in vaccination: Evidence and challenges. *Vaccine*. 37. 10.1016/j.vaccine.2019.08.060.
48. Pharmaceutical Society of Ireland. Patient Feedback on the Flu Vaccination Service Provided in Pharmacies. March 2016. Pharmaceutical Society of Ireland, Dublin, Ireland. Available at: http://www.thepsi.ie/Libraries/Pharmacy_Practice/Report_on_Patient_Feedback_on_the_Flu_Vaccination_Service_Provided_in_Pharmacies.sflb.ashx
49. Singhal, P. K., & Zhang, D. (2014). Costs of adult vaccination in medical settings and pharmacies: an observational study. *Journal of managed care & specialty pharmacy*, 20(9), 930-936. <https://doi.org/10.18553/jmcp.2014.20.9.930>
50. O'Reilly, D., Blackhouse, G., Burns, S., Bowen, J., Burke, N., Mehtretter, J., . . . Houle, S. Economic analysis of pharmacist-administered influenza vaccines in Ontario, Canada [Internet]. 2018 [cited 2020 January 17] Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6207261/>
51. Deshpande, Maithili & Schauer, Jennifer & Mott, David & Young, Henry & Cory, Patrick. Parents' perceptions of pharmacists as providers of influenza vaccine to children [Internet]. 2015 [cited 2020 January 15] *Journal of the American Pharmacists Association*. JAPhA. 53. 488-95. Available from: 10.1331/JAPhA.2013.13017.
52. Dobronte A. The importance of socio-demographics in online surveys [Internet]. CheckMarket. 2016 [cited 2021 Jan 18]. Available from: <https://www.checkmarket.com/blog/socio-demographics-online-surveys/>
53. Mastrodomenico, J. (2010). An Examination of the Socio-Demographic Characteristics Associated with Adult Vaccination Prevalence for Preventable Diseases in the United States. Retrieved January 18, 2021, from <https://core.ac.uk/download/pdf/214043709.pdf>
54. Borjesson, M., & Enander, A. (2013). Perceptions and socio-demographic factors influencing vaccination uptake and precautionary behaviours in response to the A/H1N1 influenza in Sweden. Retrieved January 18, 2021, from <https://pubmed.ncbi.nlm.nih.gov/24259541/>
55. Krishna, D., MohdZulkefli, N.A., Md Said, S. et al. Socio-demographic and health care factors in determining immunization defaulters among preschool children in Petaling District, Selangor: a cross-sectional study in Malaysia. *BMC Public Health* 19, 1275 (2019). <https://doi.org/10.1186/s12889-019-7561-z>
56. Prislis, R., Dyer, J. A., Blakely, C. H., & Johnson, C. D. (1998, December). Immunization Status and Socio-demographic Characteristics: The Mediating Role of Beliefs, Attitudes, and Perceived Control. Retrieved January 18, 2021, from <https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.88.12.1821>
57. Damjanović, K., Graeber, J., Ilić, S., Lam, W. Y., Lep, Ž., Morales, S., Pulkkinen, T., & Vingerhoets, L. Parental Decision-Making on Childhood Vaccination [Internet]. 2018 [cited 2020 December 29] *Frontiers in psychology*, 9, 735. Available from: <https://doi.org/10.3389/fpsyg.2018.00735>
58. Harapan, H., Anwar, S., Setiawan, A. M., Sasmono, R. T., & Aceh Dengue Study. Dengue vaccine acceptance and associated factors in Indonesia: A community-based cross-sectional survey in Aceh [Internet]. 2016 [cited 2021 January 3] Available from: *Vaccine*, 34(32), 3670-3675. <https://doi.org/10.1016/j.vaccine.2016.05.026>
59. The Health Belief Model - Rural Health Promotion and Disease Prevention Toolkit [Internet]. [cited 2021 January 2] Available from: <https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories-and-models/health-belief>
60. Behavioral Change Models. The Health Belief Model [Internet]. [cited 2021 January 2] Available from: <https://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories2.html?fbclid=IwAR3oHVXTxiIKIogIzLJKozS1ebdnqISkK5oRvVuxfPSr9LtvgrxPy8gCni4>
61. Behavioral Change Models. The Social Cognitive Theory [Internet]. [cited 2021 January 2] Available from: <https://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories5.html>
62. Social Cognitive Theory Model - Rural Health Promotion and Disease Prevention Toolkit [Internet]. [cited 2021 January 2] Available from: <https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories-and-models/social-cognitive>
63. Social Cognitive Theory. Social Cognitive Theory - an overview | ScienceDirect Topics [Internet]. [cited 2021 January 2]. Available from: <https://www.sciencedirect.com/topics/medicine-and-dentistry/social-cognitive-theory?fbclid=IwAR0HRCAN0-grMH9DQHyVvTUDAfTRQI1oa1xfmhNiktGZXD5-xfps2X6Y1Yg>
64. Kumar P, Kavinprasad M. A study to assess the parent's knowledge and attitudes on childhood immunization. *International Journal of Community Medicine and Public Health* [Internet]. 2018 [cited 2020 Oct 12]; 5(11):4845-8. Available from: <https://www.ijcmph.com/index.php/ijcmph/article/view/3675>
65. Babbie, Earl R. *The Practice of Social Research*. 12th ed. Belmont, CA: Wadsworth Cengage, 2010; Muijs, Daniel. *Doing Quantitative Research in Education with SPSS*. 2nd edition. London: SAGE Publications, 2010.
66. World Health Organization. *School vaccination readiness assessment tool* (No. WHO/IVB/13.02) [Internet]. 2013 [cited 2020 January 17] Available from: https://www.who.int/immunization/hpv/plan/school_readiness_assessment_tool_who_2013.pdf?ua=1
67. (Wang, L., Lam, W., & Fielding R. Hong Kong Chinese parental attitudes towards vaccination and associated socio-demographic inequalities [Internet]. 2016 [cited 2016 March 14] *Volume* 34, *Issue* 12, *Pages* 1426-1429 Available from: <https://www.sciencedirect.com/science/article/pii/S0264410X16001328>)

68. Tran VD, Pak TV, Gribkova EI, Galkina GA, Loskutova EE, Dorofeeva VV, Dewey RS, Nguyen KT, Pham DT. Determinants of COVID-19 vaccine acceptance in a high infection-rate country: a cross-sectional study in Russia. *Pharm (Granada)* [Internet]. 2021Mar.22 [cited 2021Jun.2];19(1):2276. Available from: <https://pharmacypractice.org/journal/index.php/pp/article/view/2276>
69. Silo MKLD. Assessment of pharmacy-based immunization (PBI) prior to its utilization in Manila [Internet]. *Journal of Pharmaceutical Care & Health Systems*. Longdom Publishing SL; -1 [cited 2021Jun2]. Available from: <https://www.longdom.org/proceedings/assessment-of-pharmacybased-immunization-pbi-prior-to-its-utilization-in-manila-39025.html>
70. Ames H., Glenton C., Lewin S., Purposive sampling in a qualitative evidence synthesis: a worked example from a synthesis on parental perceptions of vaccination communication [Internet]. *BMC medical research methodology*. U.S. National Library of Medicine; [cited 2021Jun2]. Available from: <https://pubmed.ncbi.nlm.nih.gov/30704402/>
71. El-Elimat T, AbuAlSamen M, Almomani B, Al-Sawalha N, Alali F. Acceptance and attitudes toward COVID-19 vaccines: A cross-sectional study from Jordan. [Internet]. 2021 [cited 2 June 2021];. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0250555#references>
72. Anokye R, Acheampong E, Budu-Ainooson A, Edusei AK, Okyere P, Dogbe J, et al. Socio-demographic determinants of childhood immunization incompleteness in Koforidua, Ghana [Internet]. *BMC research notes*. BioMed Central; 2018 [cited 2021Jun10]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6131842/>
73. Hilber AM, Bosch-Capblanch X, Schindler C, Beck L, Sécula F, McKenzie O, et al. WHO Strategic Advisory Group of Experts (SAGE) on immunization: Request for nominations. *GENDER AND IMMUNISATION*. 2010Nov;28(24).
74. Bursion RC, Buttenheim AM, Armstrong A, Feemster KA. Community pharmacies as sites of adult vaccination: A systematic review [Internet]. *Human vaccines & immunotherapeutics*. Taylor & Francis; 2016 [cited 2021Jun10]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5215426/>
75. Geoghegan S, O'Callaghan KP, Offit PA. Vaccine Safety: Myths and Misinformation [Internet]. *Frontiers in microbiology*. Frontiers Media S.A.; 2020 [cited 2021Jun10]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7090020/>
76. GebreEyesus FA, Tarekegn TT, Amlak BT, Shiferaw BZ, Emeria MS, Geleta OT, et al. Knowledge, Attitude, and Practices of Parents About Immunization of Infants and Its Associated Factors in Wadla Woreda, North East Ethiopia, 2019 [Internet]. *Pediatric health, medicine and therapeutics*. Dove; 2021 [cited 2021Jun10]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8121275/>
77. Bates I, Rosado H, et al. An overview of current pharmacy impact on immunisation [Internet] FIP Global report ;2016 [cited 2021 June 10] Available from https://www.fip.org/files/fip/publications/FIP_report_on_Immunisation
78. Grabenstein JD et al. People Vaccinated by Pharmacists: Descriptive Epidemiology [Internet]. *Journal of the American Pharmaceutical Association* (1996). Elsevier; 2016 [cited 2021Jun10]. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S1086580216312049>
79. Lee L-H, et al. Parents' attitude, awareness and behaviour towards influenza vaccination in Pakistan [Internet]. *Human vaccines & immunotherapeutics*. Taylor & Francis; 2018 [cited 2021Jun10]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5893193/>
80. Calo WA, Gilkey MB, Shah P, Marciniak MW, Brewer NT. Parents' willingness to get human papillomavirus vaccination for their adolescent children at a pharmacy. *Prev Med*. 2017 Jun;99:251-256. doi: 10.1016/j.ypmed.2017.02.003. Epub 2017 Feb 7. PMID: 28188796; PMCID: PMC5545978.
81. Lin Y, Hu Z, Zhao Q, Alias H, Danaee M, Wong LP. Understanding COVID-19 vaccine demand and hesitancy: A nationwide online survey in China [Internet]. *PLOS Neglected Tropical Diseases*. Public Library of Science; 2020 [cited 2021Jul7]. Available from: <https://journals.plos.org/plosntds/article/citation?id=10.1371%2Fjournal.pntd.0008961>
82. Berghea F, Berghea CE, Abobului M, Vlad VM. Willingness to Pay for a Potential Vaccine Against SARS-CoV-2 / COVID-19 Among Adult Persons [Internet]. *Research Square*. 2020 [cited 2021Jul7]. Available from: <https://www.researchsquare.com/article/rs-32595/v1>
83. Costa-Font J, Rudisill C, Harrison S, Salmasi L. The Social Value of a SARS-CoV-2 Vaccine: Willingness to Pay Estimates from Four Western Countries [Internet]. 2021 [cited 2021]. Available from: <http://ftp.iza.org/dp14475.pdf>
84. Frederiksen B, Ranji U, Salganicoff A, Hamel L, Lopes L. Role of Mothers in Assuring Children Receive COVID-19 Vaccinations [Internet]. *KFF*. 2021 [cited 2021Jul7]. Available from: <https://www.kff.org/womens-health-policy/issue-brief/role-of-mothers-in-assuring-children-receive-covid-19-vaccinations/>