Volume 3, Issue 5, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

KNOWLEDGE ATTITUDE AND PRACTICE FACTORS ON PARENTS REGARDING IMMUNIZATION: A STUDY FROM LINCOLN UNIVERSITY COLLEGE MALAYSIA

Samia Iqbal[*1], Suriyakla Perumal Chandran[2], Muhammad Asif[3]

*[*1]Phd Scholar (Phd in Health Sciences Specialized in Public Health) Faculty of Medicine, Lincoln University College Malaysia*
[2]Associate Professor Biochemistry and Genetics Unit Deputy Dean Md-Pre-Clinical, Faculty of Medicine, Lincoln University College Malaysia(supervisor PhD thesis)
[3]Associate Professor Department of Public Health,Times Institute Multan(Co- Supervisor PhD thesis)

[*1]samiaiqbal988@gmail.com, [2]suriyakaka@lincoln.edu.my, [3]asif.msph094@gmail.com

DOI: https://doi.org/10.5281/zenodo.15912704

Keywords

Article History
Received: 09 April, 2025
Accepted: 30 June, 2025
Published: 15 July, 2025

Copyright @Author
Corresponding Author: *
Samia Iqbal

Abstract

Background:
Child immunization is a very important public health mechanism to bring down morbidity and mortality rate due to preventable infectious diseases which can be vaccinated against (VPDs).

OBJECTIVE: *To determine the knowledge attitude and practice factors on parents regarding Immunization.*

STUDY DESIGN: *Cross sectional Study*

MATERIAL AND METHODS: The present research with a cross sectional design was carried out to determine the knowledge attitude and practice factors on parents regarding Immunization. A total of 278 parents included in the study, with whom a survey represented by the questionnaire instrument and a semi-structured interview were conducted. The study setting was the Lincoln University College Malaysia. Data was collected from the EPI department of 21 UC'S of Bahawalpur. The study completed approximately 18 months. The study targeted population of study was the parents along with children visiting to the different EPI Centers of 21UC'S of District Bahawalpur Pakistan. The study sample was calculated by using Epi Info WHO Calculator. A questionnaire was used to assess knowledge, Attitude and Practice of parents towards vaccination. Data was entered in Spss and descriptive statistics applied on it.

RESULTS: *Results in this study illustrated that the 18-28 years had 178(64.0%) participants, 40(14.3%) having age 29-39 years old, 33(11.8%) having age 40-50 years old and 27(9.7%) having age > than 50 years old. The 60(21.5%) were Male in the study who visited EPI Center and 218(78.4%) were female in the study. Of the 278 respondents, 202 (73.7%) stated they are know of the vaccination program in their area. Based on this result, it appears the vaccination program was communicated well through media, health institutions, and public channels. Public awareness is critical, as it serves as a precursor to vaccine acceptance and uptake. Based on the responses of 278 individuals, a total of 216 (77.9%) of individuals claimed that healthcare staff are communicating clear and sufficient information regarding vaccines, while 62 (22.1%) continued to indicate that the guidelines they were receiving was not*

Volume 3, Issue 5, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

sufficient. This suggests that a majority of individuals are getting enough information on the benefits, risks, and process of vaccines, and is a positive reflection of the communication on behalf of healthcare workers.

CONCLUSION:*Parental knowledge, attitude, and practice (KAP) significantly influence childhood immunization rates. Gaps in awareness and misconceptions hinder full vaccine coverage. Positive attitudes and informed practices correlate with higher compliance. Policymakers should prioritize targeted education campaigns and accessible services. Integrating community outreach into national immunization policy can enhance uptake and protect public health.*

INTRODUCTION

Child immunization is a cornerstone of public health, designed to protect children from vaccine-preventable diseases and reduce child mortality rates[1].WHO established the Expanded Program on Immunization (EPI) 1974, to confirm that all children get accessibility to vaccination[2].

In Pakistan, despite extensive efforts, immunization coverage remains suboptimal, particularly in specific regions. According to WHO reports, 60% of the 23 million infants who are unvaccinated or partially immunized globally live in just 10 countries, which also includes Nigeria. Despite Nigeria's various initiatives to boost vaccination coverage, only 23% of its children are fully vaccinated, falling significantly short of the 87% target.[3] This indicates inconsistent progress within Nigeria's National Program on Immunization (NPI), primarily affecting countries in sub-Saharan Africa. Immunization is one of the most cost-effective public health initiatives, with a considerable reduction in morbidity and mortality from vaccine-preventable diseases.[4] Parents play an important role in determining immunization coverage, and their knowledge, attitudes, and practices (KAP) regarding vaccines have a significant impact on vaccination rates and overall public health outcomes.[5] Understanding the KAP variables can assist governments and healthcare practitioners in developing successful ways to increase immunization coverage. This essay analyses these issues in detail, supported by relevant studies and initiatives[6]. Parents' awareness about immunization greatly influences their decision to vaccinate their children. Knowledge includes understanding vaccines, the diseases they prevent, immunization regimens, and the safety and efficacy of vaccines[7].

Parents who are more knowledgeable about vaccine-preventable diseases such as measles, polio, and diphtheria are more likely to priorities immunization. Many parents, however, have limited knowledge of the severity and complications of these diseases.[8] Parents' understanding about vaccination safety and efficacy influences their inclination to vaccinate. Misconceptions concerning vaccine-related side effects, such as autism or infertility, persist due to disinformation[9]. These ideas add to vaccine hesitancy. Addressing these concerns through factual and evidence-based teaching is critical for increasing parental trust in vaccines.

The development of social media has fuelled misconceptions regarding vaccines, eroding parental awareness. Anti-vaccine campaigns spread doubts and conspiracy ideas, frequently obscuring accurate information[10]. Access to reputable sources, such as healthcare professionals and government websites, can, on the other hand, increase parental knowledge and encourage vaccination[11].

The Knowledge, Attitude, and Practices (KAP) framework is essential for comprehending parental choices regarding immunization. The extent of parents' understanding of the advantages, risks, and timelines associated with vaccines significantly affects their readiness to vaccinate their children.[12] Favorable attitudes, which are cultivated through trust in healthcare professionals and an understanding of disease prevention, further promote the acceptance of immunization. Additionally, practices such as consistent healthcare visits and compliance with vaccination schedules are shaped by cultural beliefs, accessibility, and educational background.[13] It is vital to address knowledge gaps, rectify misconceptions, and

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

promote positive attitudes through effective education and communication strategies to enhance immunization practices, increase vaccine uptake, and safeguard children against preventable illnesses.

MATERIAL AND METHOD

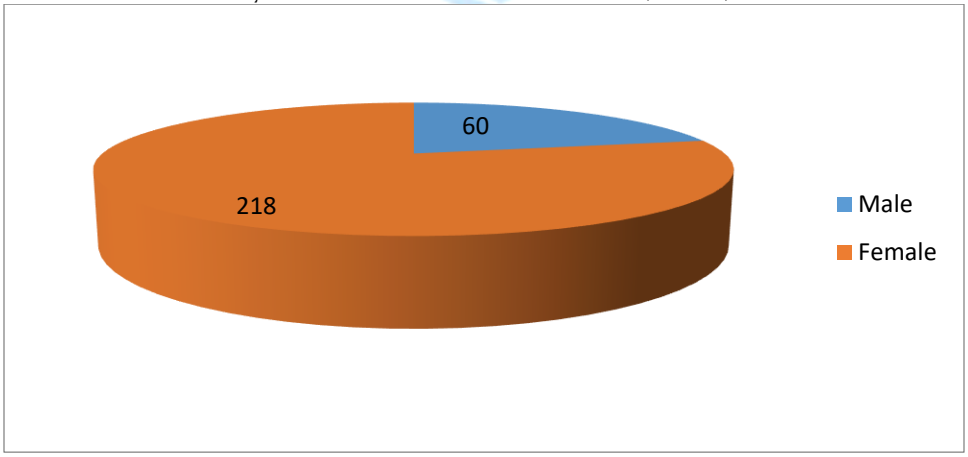
The descriptive cross sectional research study design was observed in this study. The study setting was the Lincoln University College Malaysia. Data was collected from the EPI department of 21 UC'S of Bahawalpur. The study completed approximately 18 months. The study targeted population of study was the parents along with children visiting to the different EPI Centers of 21UC'S of District Bahawalpur Pakistan. The study sample was calculated by using Epi Info WHO Calculator. A questionnaire was used to assess knowledge, Attitude and Practice of parents towards vaccination.

RESULTS

DEMORAPHIC VARIABLES OF PARTICIPIENTS

AGE	FREQUENCY(PERCENTAGE)
18-28 Years	178(64.0%)
29-39 years	40(14.3%)
40-50 years	33(11.8%)
>than 50 years	27(9.7%)
GENDER	
Male	60(21.5%)
Female	218(78.4%)

The above table showed that the 18-28 years have 178(64.0%) participants, 40(14.3%) having age 29-39 years old, 33(11.8%) having age 40-50 years old and 27(9.7%) having age > than 50 years old.
The 60(21.5%) were Male in the study who visited EPI Center and 218(78.4%) were female in the study.



Awareness of the Program

Are you Know of the current vaccination program in your region?

variables		Frequency	Percent	Valid Percent
Valid	Yes	202	202	73.7
	No	76	27.3	27.3
	Total	278	100.0	100.0

Of the 278 respondents, 202 (73.7%) stated they are know of the vaccination program in their area. Based on this result, it appears the vaccination program was communicated well through media, health institutions, and public channels. Public awareness is critical, as it serves as a precursor to vaccine acceptance and uptake.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

The 76 respondent (27.3%) who responded indicated they are not known of the program. Although this is a small group, it is still important. This group may contain marginalized members of the population, digital or public information-limited individuals, or people that live in remote areas.

SERVICE QUALITY

variables		Frequency	Percent	Valid Percent
Valid	yes	216	77.9	77.9
	No	62	22.1	22.1
	Total	172	100.0	100.0

Do you feel that the health care Provider at the vaccination centers provide clear and proper guidelines about vaccination?

Based on the responses of 278 individuals, a total of 216 (77.9%) of individuals claimed that healthcare staff are communicating clear and sufficient information regarding vaccines, while 62 (22.1%) continued to indicate that the guidelines they were receiving was not sufficient. This suggests that a majority of individuals are getting enough information on the benefits, risks, and process of vaccines, and is a positive reflection of the communication on behalf of healthcare workers.

On the other hand, the fact that one-third of individuals still felt it was inadequate speaks directly to a communication gap. These individuals are most likely in a state of discomfort or worse, a state of confusion, regarding their vaccine experience, which may lead to vaccine hesitancy or fear. Miscommunication can be amplified for individuals from lower health literacy, those with language barriers, or those dependent on public health or specific one-on-one sources for trusted information.

Cultural/Religious Influences:

Do cultural Norms and religious beliefs in your community affect your decision to vaccinate your children?

variables		Frequency	Percent	Valid Percent
Valid	NO	225	80.9	80.9
	YES	53	19.1	19.1
	Total	172	100.0	100.0

The table outlines that 225 participants (80.9%) indicated that cultural norms or religious beliefs within the community not shape their decision about vaccinating their children, inferring that there is a considerable majority being guided by socio-religious beliefs while making health decisions. Concerns that beliefs shaped by religious instructions, cultural beliefs, myth, or misconception about vaccines could account for this influence. Whereas, 53 respondents (19.1%) concluded that their vaccination decision are shaped by these beliefs, indicating a large proportion of educated people their decision upon medical or scientific reasoning. Since the larger percentage of respondents are under cultural influences, there is clearly an ongoing need for culturally sensitive health education, along with engaging with community leaders, religious leaders/health professionals and others around educating, and creating acceptance towards vaccinations.

Communication Barriers:

Have communication issues at the vaccination centers ever affected your experience?

variables	Frequency	Percent	Valid Percent	Cumulative Percent

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Valid	yes	43	15.4%	15.4%	15.4%
	No	235	84.5%	84.5%	100.0
	Total	278	100.0	100.0	

When it comes to communication issues at vaccination centers, 43 participants (15.4%) reported having issues and 235(84.5%) participants (84.5%) did not. This is an example of a communication gap that can negatively impact the experience of vaccination in areas that are linguistically diverse or have low-literacy populations, and can lead to confusion, frustration, or vaccine hesitancy.

DISCUSSION:

Many parents struggle to vaccinate their kids because of socioeconomic reasons. Many families in Bahawalpur, facing poverty and living in the countryside, are more concerned about getting enough food than with medical check-ups. Working families often rely on what they earn daily which may make bringing a child to the health facility unattainable[14].

Similarly, other expenses not connected to immunization, for instance travel, time lost at work or fears over lengthy waiting, play a role in limiting access to immunizations services for families in Bahawalpur. Even though it is possible to get vaccines for free from the government, the required out-of-pocket spending still keeps some people from getting them[15].

A major factor in deciding whether parents give their child a vaccine is how informed they are. In both places, mothers' lack of formal education is related to not vaccinating their children. In the rural areas of Bahawalpur, lots of mothers are either completely illiterate or only have a little formal education. So, parents are less aware of the role[16].

of immunization, the vaccination timeline and the risks of not sticking to these guidelines.

A number of educated parents doubt whether vaccines are really needed or safe because of bad information from social media or word of mouth. Because of this, many avoid getting vaccinated or put off their vaccination. Information alone is not enough; the way information is delivered, where it comes from and how trustworthy it is matter a great deal[17].

Not being able to avoid preventable diseases affects a child's body, attendance at school and mental development. Because of missing days from work to care for their children's health, parents of sick children put their families at increased risk of poverty[18].

People's perceptions about cultural and religious norms impact how they look for medical help. Many people in conservative areas of Bahawalpur believe incorrect beliefs about vaccines. Some groups think that vaccines can make a person infertile or are developed as part of a Western plot.Because of such myths which are many times encouraged by respected community leaders or healers, some parents are discouraged from getting their children vaccinated[19].

People might not trust government health services or be unfamiliar with the city's healthcare which can result in reluctance. So, being aware of cultures and being involved in the community are important for boosting immunization acceptance.A particular group thinks that vaccines go against Islamic beliefs or are a scheme planned in the West. These views have mainly caused problems in eradicating polio, though they also affect everyday immunization efforts[20].

Effective immunization programs depend a lot on the performance and strength of the health system. The health facilities in Bahawalpur have insufficient staffing, fail to provide enough resources and are not well run. Electricity problems and lack of good refrigerators mean that the cold chain is mostly broken, hurting the potency of vaccines. In addition, the shortage of educated health workers in remote communities makes it difficult to give vaccines quickly and fully[21].

If children are unvaccinated, their illnesses often need higher levels of medical care, including time spent in hospital for treatment. This puts more stress on the public health system which is already working very hard. Handling emergencies for outbreaks means less money, time and effort can be spent on regular and preventive care. Gender-related issues can affect whether people are able to get vaccines. Many mothers want to give their children the vaccine, yet they feel they do not have enough control. Women are also restricted in their

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

movement which makes it hard for them to get to healthcare centers, particularly when traditional beliefs keep women from traveling alone.

REFRENCES

Shahzadi A, Saddique H, Kousar ST, Jabeen R, Ullah K. Knowledge Attitude and Practice Factors on Parents Regarding Immunization: KAP Analysis of Parents Regarding Immunization. NURSEARCHER (Journal of Nursing & Midwifery Sciences). 2022 Dec 31:07-11.

Aldahmashi FM, Alotaibi AF, Matbouli HM, Almari MM, BuSaad FM, Alqahtani RS, Saeedi YM, Alosaimi MS. Systematic Review of Parents' Knowledge, Attitude and Practice of Children Vaccinations in Arab Countries. Saudi J Med Pharm Sci. 2025;11(4):322-30.

Herrera-Restrepo O, Clements DE, Olaiya T, Marshall GS. Knowledge, Attitudes, and Practices Regarding Meningococcal B Vaccination Since the 2015 Recommendation: A Review. Journal of Adolescent Health. 2025 Feb 19.

Horiuchi H, Kusama Y, Matsuo H, Kutsuna S. Knowledge, Attitudes, and Practices Regarding the COVID-19 Vaccine for Children: A Questionnaire Survey at the 18-Month Health Check-Up.

Hao Q, Yan P, Guo W, Ren J, Li Q, Zhang P, Huang C, Gu J. Parental knowledge, attitude, and practice on pediatric pneumonia in Beijing, China: a cross-sectional study. Journal of Public Health. 2025 Feb;33(2):393-9.

Anbessa O, Ebrahim R, Negassa G, Fufa T, Fekadu M, Birhanu A. Knowledge, Attitudes, Practice and its Associated Factors of the Adverse Events Following Immunization Surveillance Among Healthcare Providers in Harari Regional National State, Eastern Ethiopia. Eastern Ethiopia.

Atif N, Hashmi FK, Malik UR, Ghauri MA, Gillani AH, Kadirhaz M, Jiang M, Chang J, Fang Y. From awareness to acceptance: understanding HPV and vaccine knowledge, attitudes and beliefs among university students in Punjab, Pakistan. Journal of Pharmaceutical Policy and Practice. 2025 Dec 31;18(1):2473023.

Yakasaem T, Jupimai T, Jitrungruengnit N, Chantasrisawad N, Kowitdamrong E, Siriyasatien P, Sunthornchart S, Isarankura Na Ayudaya N, Angkhananukit P, Ruansil P, Nakhapakorn K. Seroprevalence and preventive practices of dengue and chikungunya among school children in Bangkok: Gaps in prevention and vaccination strategies. medRxiv. 2025 Apr 4:2025-04.

Saleh SM, Aljamala A, Hafez D, Shqeer MA, Abukandil I, Aldiban W, Baraka A, DARS Consortium Samy Ahmed Daweri Aleaa Ali Khudhair Amjad Salameh Aseel Attallah Ayah Rageh Bushra Muneer Ali Dua Abu Sabbaheen Haneen Elfrly Mostafa Salama Salem. Knowledge, attitude, practice, and barriers among physicians in the Middle East and North Africa region toward influenza vaccination for the high-risk group of patients: a cross-sectional study. Tropical Diseases, Travel Medicine and Vaccines. 2025 Apr 1;11(1):6.

Afriany E, Siswanto S, Kusmadeni D. THE RELATIONSHIP BETWEEN MATERNAL BEHAVIOR AND THE COMPLETENESS OF BASIC INFANT IMMUNIZATION AT THE SINAR BARU BANGKA HEALTH CENTER 2024. HEARTY. 2025 Apr 5;13(2):488-97.

Mohammad Basir MF, Ibrahim MI, Wan Mohamad WM, Mohd Fuzi NM, Rosli AS, Abdul Rahman MS, Rosedi A, Mohd Hairon S. The determinants of rabies knowledge, attitudes and practices among dog owners in the North-Eastern Region of Peninsular Malaysia: a multivariable analysis. One Health Outlook. 2025 Mar 18;7(1):16.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Altayyar S, Chengan D, Noormamode Y, Moonsamy V, Reetoo N, Preux PM, Boumediene F. Evaluating the effect of an educational comic book on the knowledge, attitudes and practices regarding epilepsy among public schoolchildren in Mauritius. Seizure: European Journal of Epilepsy. 2025 Mar 1;126:106-13.

Endale S, Delelegn K, Negash Z. Knowledge, attitude, practices, and associated factors toward cervical cancer among female health sciences students of Addis Ababa University, Addis Ababa, Ethiopia. Therapeutic Advances in Vaccines and Immunotherapy. 2025 Jan;13:25151355251314733.

Szalast K, Nowicki GJ, Pietrzak M, Mastalerz-Migas A, Biesiada A, Grochans E, Ślusarska B. Parental Attitudes, Motivators and Barriers Toward Children's Vaccination in Poland: A Scoping Review. Vaccines. 2025 Jan 6;13(1):41.

Song SY, Guo Y, Li YH, Wang Z, Gao W. Analysis of factors influencing HPV vaccination intention among Chinese college students: structural equation modeling based on health belief theory. Frontiers in Public Health. 2025 Jan 30;12:1510193.

Abdullah SK. Knowledge of Mothers Regarding Immunization of One-Year-Old Child at Primary Health Care Centers in Al-Diwaniyah City. Academia Open. 2025 Jan 29;10(1):10-21070.

Bravo SL. The influence of knowledge, attitude, and motivational factors on the willingness of mothers for their female children to undergo human papillomavirus vaccination. Philippine Journal of Obstetrics and Gynecology. 2025 Jan 1;49(1):18-42.

Ablimitova F, Nabirova D, Horth R, Kirpicheva U, Gazezova S, Smagul M. P-610. HPV vaccine knowledge, attitudes and practices among healthcare providers before introduction to the national schedule, Almaty, Kazakhstan-2023. InOpen Forum Infectious Diseases 2025 Feb (Vol. 12, No. Supplement_1, pp. ofae631-808). US: Oxford University Press.

Sobe LE. Knowledge, Attitudes and Practices Towards Human Papillomavirus (HPV) and HPV Vaccination among Students at Higher Institutions of Learning in Buea, South West Region of Cameroon: A Cross-Sectional Study.

Kassa E, Birhan M, Ayalew M, Gelaw A, Gidey AM, Tilahun Worku D, Mekonen A, Teklehaimanot E, Asnakew A, Amare A, Berhane Tessemma N. Knowledge, attitudes, and practices of healthcare providers toward ADR reporting regarding thiopurine drugs for the treatment of acute lymphoblastic leukemia at the University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia. Frontiers in Pharmacology. 2025 May 19;16:1486415.

Simonetti V, Cicolini G, Tomietto M, Forastefano B, Pastore F, Ballerini P, Di Lorenzo A, Tafuri S, Comparcini D. The association between adolescents' knowledge and perception of HPV vaccination and parents' characteristics: A cross-sectional study. Applied Nursing Research. 2025 Feb 1;81:151899