

**FROM ADDRESSING HESITANCY TO ENSURING CONFIDENCE:
INVESTIGATING THE EFFECTS OF INTERNATIONAL PEDIATRIC
ASSOCIATION'S VACCINE TRUST COURSE (VTP)**

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By

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Under the Supervision and Guidance of

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This is to certify that **Ms Sanskriti Bhardwaj** pursuing **MBA (Hospital and Health Management)** from Institute of **Health Management Research (IIHMR)** has completed her dissertation with the International Pediatric Association from **1st April to 30th June, 2024.**

As part of her dissertation, she studied " **From addressing Hesitancy to ensuring Confidence: Investigating the effect of the Vaccine Trust Course of the International Pediatric Association**".

Dr. Naveen Thacker
President, IPA

DECLARATION BY STUDENT

I hereby declare that this dissertation is titled "From Addressing Hesitancy to Ensuring Confidence: Investigating the Effects of the Vaccine Trust Course of the International Pediatric Association.

is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



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This is to certify that the dissertation titled "From Addressing Hesitancy to Ensuring Confidence: Investigating the Effects of International Pediatric Association's Vaccine Trust Course (VTP)".

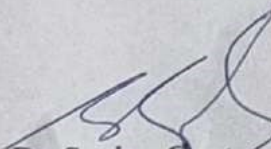
is a record of the research work undertaken by Ms. Sanskriti Bhardwaj in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.


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ABSTRACT

TITLE: From Addressing Hesitancy to Ensuring Confidence: Investigating the Effects of International Pediatric Association's Vaccine Trust Course (VTP).

Author Name: Ms. Sanskriti Bhardwaj

Advisor Name: Dr. Naveen Thacker

Keywords: Vaccine Hesitancy, Vaccine Confidence, Online Course, International Pediatric Association.

Background: As a result of COVID-19, the IPA moved from in-person train-the-trainer workshops to an online course known as the Vaccine Trust Course (VTP). This change was made to close the communication gaps that healthcare workers (HWs) had to fill to improve vaccine acceptance in face-to-face and social media contacts.

Objective: To compare the pre-and post-training knowledge levels regarding vaccination among the participants of the course.
To assess participant feedback on the quality of the delivery of each module, including speaker quality, accessibility, and timeliness.

Methodology: Global promotion and online access to the eight-hour, seven-module Vaccine Trust Course were made possible. The pre-and post-training attitudes, knowledge, and practice ability surveys, together with enrollment, participation, and completion statistics, were used to assess the course outcomes for participants between September 1, 2020, and September 30, 2021.

Findings: Out of the 1527 Participants that enrolled from 84 different countries, the majority were 25-39 years old (52.8%), Female (50.7 %), and Pediatricians (57%) The findings show that there has been consistent agreement on the importance of health professionals in immunization teaching (95.4% post-training, 97.4% pre-training). There were notable advancements in the perception of one's ability to address vaccine concerns (81.3% to 94.6%) and refute false information on social media (74.7% to 92.7%). Additionally, there was greater agreement among participants to refute false information (91.2% to 95.0%) and support media coverage that supports vaccinations (88.1% to 94.6%). The training increased the participants' (94.1% to 96.2%) sense of accountability for advocating the advantages of vaccinations.

Conclusions: This study highlights how a free online training program improved health workers' communication skills on vaccine acceptance, reaching over 1527 participants from 84 countries in just 12 months during the COVID-19 pandemic. The shift to online training optimized resources and emphasized the crucial need for targeted communication strategies to address global immunization challenges and misinformation effectively.

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ABBREVIATIONS

ABBREVIATIONS	MEANING
WHO	World Health Organization
IVAC	International Vaccine Access Center
UNICEF	United Nations Children's Fund
LMS	Learning Management System
DTP	Diphtheria, Tetanus and Pertussis
HWs	Health workers
SAGE	Strategic Advisory Group of Experts
GHS	Global Health Strategies
ToT	Training of Trainers
GVAP	Global Vaccine Action Plan
SDG	Sustainable Development Goals
PAG	Project Advisory Group
IPA	International Pediatric Association
VTP	Vaccine Trust Project
SPSS	Statistical Package for Social Sciences

CHAPTER I

INTRODUCTION

Despite the fact that vaccination rates have gone up globally, childhood vaccine-preventable diseases may be on the rise as a result of the growth of non-medical vaccination exemptions. The World Health Organization ranks vaccine hesitancy as one of the top ten worldwide threats to public health, and it contributes significantly to the declining immunization rates. (Renee Garrett, 2021). Despite significant advancements, a projected 23 million children—3.7 million more than in 2019—did not receive their recommended vaccinations in 2020. The WHO Southeast Asian and Eastern Mediterranean Regions were most severely hit by vaccination service disruptions in 2020. In all locations, the number of children who did not receive even their initial immunizations grew when access to health care and immunization outreach were tightened. 3 million more children missed their first dose of measles and 3.5 million more children missed their first dose of the DTP-1 vaccination, respectively, compared to 2019 (1). To ensure vaccine uptake, communities and people must be aware of and accept vaccinations. Vaccine availability and accessibility to immunization services are also critical. Many communities and nations have different reasons why people choose not to get vaccinated. The lack of access to high-quality healthcare or vaccination services, being in conflict or uprooted, adhering to traditional cultural beliefs, low disease salience, inaccurate information about vaccines, mistrust of vaccination providers, and doubts about the efficacy or safety of vaccines are a few examples of these reasons(2).

Reluctance or reluctance to receive vaccinations may be influenced by communication difficulties among healthcare workers (HWs). Unfounded rumors and false information can spread quickly in communities when trustworthy information on vaccinations is not shared. Such false information and misinformation regarding vaccinations and diseases that can be prevented by vaccinations can harm vaccination acceptance. As such, it must be handled carefully and promptly, adhering to the fundamentals of misinformation management (3). The fact that pediatricians and other health workers are frequently untrained in vaccine communication is a significant underlying issue. They are uncertain about the best ways to approach, recognize, and deal with specific issues in a cooperative manner that would build trust, send the correct signals to increase confidence, and come up with solutions to deal with resistance. They usually did not include vaccination communication training in their pre-service or training curriculum, and These observations confirm one of the recommendations on vaccination issued by the WHO Strategic Advisory Group of Experts (SAGE): HWs ought to be empowered to address parents' and patients' worries regarding vaccination hesitancy both within and outside of the immunization program (4).

Phase I of the International Pediatric Association's (IPA) Vaccine Hesitancy Study 174 professional societies of pediatricians from over 154 countries are represented by the IPA, the only global organization of its kind. Assisting in the promotion of children's physical, mental, and social well-being is the goal of the International Pediatric Association (IPA), which aims to raise global standards of health for infants, kids, and teens. Routine childhood immunization is essential for the health and well-being of newborns, kids, and teenagers, as was previously mentioned.

With funding from the Sanofi Vaccine Division and Serum Institute of India, IPA began the Vaccine Hesitancy Project in December 2018 with assistance from Global Health Strategies (GHS), International Vaccine Access Center (IVAC), and the United Nations Children's Fund (UNICEF). The project aims to improve vaccination demand, reduce vaccine hesitancy in communities, and assist in achieving the targets of the Sustainable Development Goals (SDGs) and the Global Vaccine Action Plan (GVAP). On December 14–16, 2018, IPA hosted the first International Training of Trainers (ToT) workshop in New Delhi, India. The second workshop was held in Panama City on March 16–17, 2019.

Through these workshops, IPA created a pool of Master Trainers, and these trainers were tasked with organizing several vaccine hesitancy seminars in their respective countries. It was advised that these instructors combine their knowledge and experience and routinely address vaccine reluctance in their country and region. (5)

Phase II of the IPA Vaccine Trust Project

The "IPA Vaccine Trust Project" was renamed in 2019 due to the program's success. The project's second phase aims to improve durable public faith in immunization globally. IPA planned to conduct ToTs in Phase II in seven regions: North and South America, Latin America, Africa Sub-Saharan, Middle East and North Africa, Central Asia, Europe, and Asia Pacific.

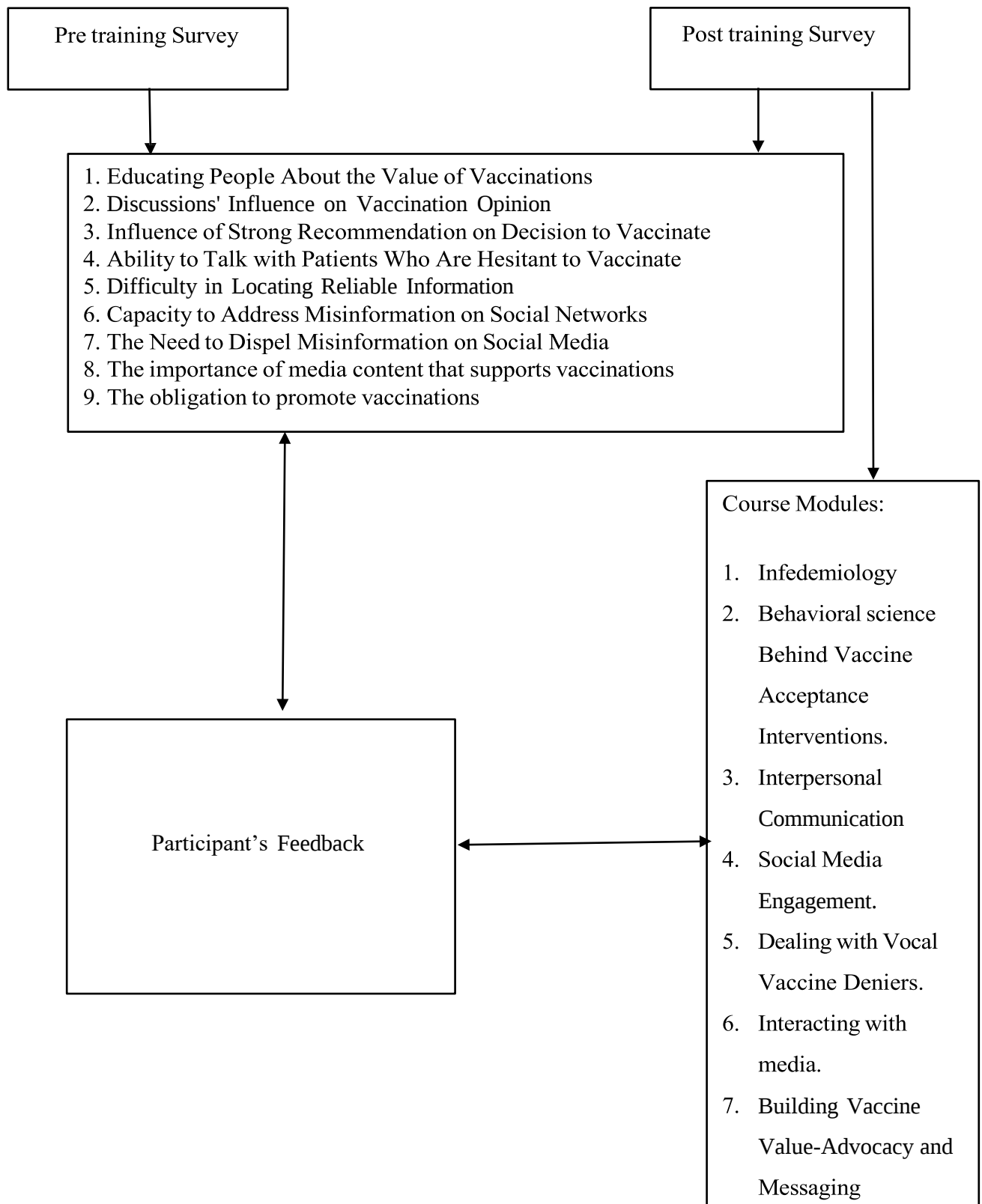
All the same, the COVID-19 pandemic intervened and prompted a major overhaul of the training curriculum. With the assistance of the Project Advisory Group (PAG), the IPA modified the course curriculum and teaching strategies in 2020.

The course is now offered online at your own speed instead of in-person instruction. IPA offers free online training, the Vaccine Trust Course, using the IPA Learning Management System (LMS) in seven languages: English, Spanish, French, Portuguese, Turkish, Arabic, and Russian, to health workers who administer or advocate vaccines and immunizations. The results, applicability, effectiveness, and enrollment of the 12-month virtual Vaccine Trust Course, which ran from October 2022 to October 2021, are described in detail in this paper.

1.1 OBJECTIVES

1. To compare the pre-and post-training knowledge levels regarding vaccination among the participants of the course.
2. To assess participant feedback on the quality of the delivery of each module, including speaker quality, accessibility, and timeliness.
3. To ascertain the participants' professional backgrounds and demographic information, including their employment in the healthcare industry.
4. To determine the participants' country-wise geographic distribution.

1.2 CONCEPTUAL FRAMEWORK



CHAPTER II

2.1 RATIONALE

The IPA Vaccine Trust Project tackles important issues in international vaccination efforts, with a particular focus on the implementation and assessment of the Online VTP Course. Vaccine reluctance is still a widespread problem that contributes to falling vaccination rates and rising vaccine-preventable disease susceptibility worldwide. Disparities in healthcare access, cultural preconceptions, and disinformation persist in impeding vaccine adoption, despite advances in vaccine technology and accessibility.

Combating Vaccine Hesitancy: Improving healthcare workers' (HWs) communication abilities and vaccine knowledge is the main goal of the IPA Vaccine Trust Project, which aims to address vaccine hesitation. HWs are essential in influencing a community's acceptance of vaccines. Building trust in vaccinations and effectively combating misinformation need attending to their training needs.

Meeting Global Health Standards: The project is in line with the Global Vaccine Action Plan (GVAP) and SDG 3 (Good Health and Well-Being). The project seeks to reduce vaccine-preventable diseases globally and work toward universal vaccination coverage by boosting vaccine trust and demand.

Adjusting to Changing Circumstances: The COVID-19 pandemic forced the Vaccine Trust Course to move from its customary in-person training to an online format. This modification shows the project's tenacity and dedication to continuous healthcare development by ensuring capacity-building initiatives continue in the face of logistical difficulties and global health emergencies.

Training Effectiveness Evaluation: The study uses thorough pre- and post-training assessments to determine how effective the online Vaccine Trust Course is. The study offers insights into the effects of the course on improving HWs' capacity to effectively communicate about vaccinations and handle vaccine hesitancy by assessing participants' knowledge gains and feedback on course delivery.

Supporting Health System Resilience: Boosting vaccination acceptance and uptake in communities builds public health's resistance to infectious disease epidemics, hence supporting health system resilience. The study strengthens the health system's ability to address current and predicted public health issues by providing HWs with the information and abilities to deal with vaccination reluctance.

CHAPTER III

3.1 REVIEW OF LITERATURE

TITLE	AUTHOR	SOURCE	PURPOSE	FINDINGS
Public trust and vaccine acceptance-international perspectives	Sachiko Ozawa & Meghan L Stack	https://doi.org/10.4161/hv.24961	To highlight the significance of public trust in vaccines and immunization programs from an international standpoint. The paper discusses the challenges faced in maintaining trust in vaccines, the impact of misinformation on vaccine acceptance, and the importance of engaging various stakeholders to build and sustain trust in vaccination efforts.	1. The findings of the paper emphasize the critical role of trust in ensuring high immunization coverage rates and preventing vaccine-preventable diseases. 2. It underscores the need for transparent communication about the risks and benefits of vaccines, as well as the importance of addressing concerns and misinformation that may erode public trust. 3. The paper also emphasizes the value of measuring and monitoring levels of trust to bridge the vaccine confidence gap and improve vaccination rates globally.
Empowering Health Workers to Build Public Trust in	Noni MacDonald b, Walter A. Orenstein c, Margie Danchin d,	https://doi.org/10.1016/j.vaccine.2022.11.061	to assess how well health professionals' communication abilities, expertise, and self-assurance in advocating vaccination and handling	1. The course improved health workers' communication skills and knowledge in vaccine-related topics.

Vaccination : Experience from the International Paediatric Association's Online Vaccine Trust Course.	e, f, Vince Blaser g, and Shraddha Uttekar a		vaccine reluctance have been improved by the International Paediatric Association's Online Vaccine Trust Course.	2. Participants reported increased vaccine uptake among patients and families after completing the course. 3. Health workers showed improved competence in responding to vaccine misinformation on social media. 4. The online course successfully reached a global audience of health workers and optimized experts' time compared to in-person workshops.
Online misinformation and vaccine hesitancy	Renee Garrett, Sean D. Young	https://doi.org/10.1093/tbm/ibab128	The purpose of this paper is to address the growing issue of vaccine hesitancy and misinformation, particularly in the context of the COVID-19 pandemic. It aims to explore the impact of online misinformation on vaccination intent, the role of social media in spreading vaccine-related myths, and strategies to mitigate the effects of false information on vaccine uptake.	1. The spread of misinformation on social media has contributed to vaccine hesitancy. 2. Exposure to COVID-19 misinformation online has been linked to decreased intent to receive the vaccine. 3. Collaboration between health experts, lay advocates, and social media platforms is crucial in addressing online vaccine-related misinformation.

Misinformation of COVID-19 vaccines and vaccine hesitancy	Sun Kyong Lee ^{1*} , Juhyung Sun ² , Seulki Jang ³ & Shane Connelly ³	https://doi.org/10.1038/s41598-022-17430-6	The researchers aimed to identify the types of misinformation participants were exposed to and examine how this misinformation influenced vaccine hesitancy and behavioral intentions.	1. The findings of the study revealed that participants reported various types of misinformation related to COVID-19 vaccines, such as false claims about vaccine ingredients, side effects, and efficacy. 2. The results also showed that exposure to misinformation was associated with higher levels of vaccine hesitancy and lower intentions to get vaccinated.
Vaccine Hesitancy and Exposure to Misinformation: a Survey Analysis	Stephen R. Neely, PhD, and Joshua M. Scacco, PhD.	DOI: 10.1007/s11606-021-07171-z	The research aimed to provide insights into vaccine hesitancy in the state of Florida amidst the COVID-19 pandemic and political dynamics surrounding public health measures.	1. The analysis highlighted key demographic and political factors influencing vaccination status and hesitancy, providing valuable information for public health interventions and communication strategies.
Vaccine	Angela K. Ulrich, Maria E. Sundaram, Nicole E. Basta	https://doi.org/10.1016/j.vaccine.2022.02.012	to suggest that vaccine counseling be established and acknowledged inside the healthcare system as a legitimate professional responsibility. This position seeks to increase vaccine access and empower, encourage, and	1. The study emphasizes the need for customized approaches to raise vaccination intent, foster vaccine trust, cultivate a rapport of trust with healthcare practitioners, and

			support each person's decision-making around vaccinations.	remove real-world obstacles to vaccination. 2. The establishment of vaccination counselors is seen as a critical step in addressing challenges around vaccine acceptance and improving vaccination programs
The Role of Faith-Based Organizations in Improving Vaccination Confidence & Addressing Vaccination Disparities to Help Improve Vaccine Uptake: A Systematic Review	Uzma Syed, Olivia Kapera, Aparajita Chandrasekhar, Barbara T. Baylor, Adebola Hassan, Marina Magalhães, Farshid Meidany, Inon Schenker, Sarah E. Messiah, and Alexandra Bhatti.	https://doi.org/10.3390/vaccines11020449	The purpose of the study was to investigate the role of faith-based organizations in improving vaccination confidence, addressing vaccination disparities, and enhancing vaccine uptake in communities.	1. Faith-based organizations play a vital role in global vaccination efforts and have significant potential for effective public health and vaccination campaigns. 2. Engaging, enabling, and resourcing FBOs in local vaccination programs can help achieve and maintain high vaccination coverage rates

COVID-19 Vaccination in a Military Population: Evaluation of a Quality Improvement Initiative to Increase Vaccine Confidence and Reduce Hesitancy	<u>Carolyn M Batie 1, Courtney N Hintz 1, Susan H Catchings 2, Julie A Thompson 3, Valerie K Sabol 3</u>	10.1093/milmed/usac333	To determine the efficacy of a program focused on vaccine hesitation, a program evaluation was conducted on a COVID-19 vaccine educational intervention (hereafter COVID-19 Educational Presentation)	Two voluntary COVID-19 Educational Presentations were given in September 2, 2021, months prior to the Air Force's COVID-19 vaccine mandate deadline; 128 trainees participated in the assessment surveys. Overall, the educational intervention increased confidence in receiving the COVID-19 vaccine increased by 12.6% ($t = -7.928$, $P < 0.001$).
The influence of social media on parents' vaccine hesitancy	Jones, M. and James, J., 2021.	DOI: 10.7748/ns.2021.e11759	This article examines the content and distribution of vaccination-related material on social media and the potential impact on vaccine reluctance and adoption. It also describes different approaches that nurses can take in order to deal with social media misinformation and vaccine hesitancy.	The findings of the study revealed that Wakefield's article was indeed fraudulent, and there was no scientific basis to support the claim of a link between the MMR vaccine and autism. This misinformation led to a decrease in vaccination rates and an increase in vaccine hesitancy among parents, ultimately posing a threat to public health.

Vaccination Training for Pharmacy Undergraduates as a Compulsory Part of the Curriculum?—A Multicentric Observation	Sayyed, S.A.; Kinny, F.A.; Sharkas, A.R.; Schwender, H.; Woltersdorf, R.; Ritter, C.; Laeer, S.	DOI: https://doi.org/10.3390/pharmacy12010012	The research aimed to find out how pharmacy students at various universities felt about themselves and their level of satisfaction with the High-Fidelity Simulation (HFS) vaccine training. The purpose of the study was to evaluate the viability and efficacy of making vaccine instruction a required part of the pharmacy curriculum.	was beneficial and enjoyable. Based on self-assessment information gathered both before and after the training, the authors observed a favorable impact on performance. The goal of the training program was to give students a solid foundation in vaccination knowledge and abilities, such as how the influenza virus and SARS-CoV-2 are structured and spread, how to evaluate a patient's eligibility, and how to educate a patient before receiving a vaccination. To improve students' competencies in this crucial area of pharmacy practice, the authors suggested that vaccine training be incorporated into the pharmacy curriculum.
Special focus: Vaccine Acceptance	Kristen A. Feemster	DOI: https://doi.org/10.4161/hv.26217	The "Decade of Vaccines" commitment aimed to increase access to childhood vaccines to save lives and prevent illnesses.	Findings emphasize the importance of addressing vaccine hesitancy, understanding parental concerns, countering misinformation through effective communication, and the challenges faced by healthcare providers in cases of vaccine refusal.

COVID-19, Hesitancy, Vaccine Acceptance and Resistance among University Students in France	Marie Pierre Tivolacci 1,* , Pierre Dechelotte 2 and Joel Ladner 3	DOI: https://doi.org/10.3390/vaccines9060654	To investigate COVID-19 vaccine acceptance, hesitancy, and resistance among university students in France, exploring motivations, barriers, and demographic influences on vaccination decisions.	• 58.0% of students were willing to receive the COVID-19 vaccine, with 17.0% unwilling and 25.0% undecided. • Main motivation: Not transmitting COVID-19; Main barriers: Preferring to wait for more vaccine experience.
Enhancing COVID-19 Vaccines Acceptance : Results from a Survey on Vaccine Hesitancy in Northern Italy	Chiara Reno^1, Elisa Maietti^1*, Maria Pia Fantini^1, Elena Savoia^2, Lamberto Manzoli^3, Marco Montalti^1, and Davide Gori^1	DOI: https://doi.org/10.3390/vaccines9040378	The study aimed to investigate vaccine hesitancy in Northern Italy, focusing on COVID-19 vaccine acceptance.	Key findings revealed that 68.9% of respondents expressed confidence in the COVID-19 vaccine, while 31.1% reported hesitancy. Additionally, 15.6% had previously refused a recommended vaccination. Understanding these factors is crucial for developing strategies to enhance vaccine acceptance in the region.

Public trust and vaccine acceptance-international perspectives	Sachiko Ozawa Meghan L Stack	DOI: 10.4161/hv.24961	The purpose of the article "Public trust and vaccine acceptance-international perspectives" by Sachiko Ozawa & Meghan L Stack (2013) is to explore the importance of public trust in vaccines and provide insights into vaccine acceptance from an international standpoint.	The article highlights the global issue of the vaccine confidence gap, emphasizing the importance of transparent communication, stakeholder engagement, and trust monitoring to address and bridge the gap.
Public trust and vaccine acceptance-international perspectives.	Laura A.V. Marlow, Jo Waller, and Jane Wardle	DOI: https://doi.org/10.4161/hv.3.5.4310	To investigate the association between general vaccine attitudes, trust in doctors and the government, experience with vaccination, and acceptance of the HPV vaccine among mothers of 8–14-year-old girls	The study's conclusions showed that moms were more likely to accept the HPV vaccine if they had a high level of trust in medical professionals or the government. Mothers were also more likely to consent to the vaccination if they thought their doctor would take their worries about the vaccine seriously. Conversely, moms were less likely to accept the HPV vaccine if they had previously postponed, refused, or regretted getting their child vaccinated. Interestingly, there was no significant correlation found between acceptance and the child experiencing negative effects from a previous vaccination.

Immunization Education in US Pharmacy Colleges and Schools	William Allan Prescott, Jr., PharmD Christian Bernhardt, B	American Journal of Pharmaceutical Education 2019; 83 (5) Article 6765.	The study's objectives were to ascertain the degree to which vaccination is taught in US universities and pharmacy schools and to describe the vaccination- and immunization-related material that is taught in these settings.	The survey received responses from 80 recognized US pharmacy schools, or 62.5% of the total. 91.3% of schools provided the APhA Pharmacy-Based Immunization Delivery Program; 6.3% of schools provided an alternative immunization certificate program. Immunization subjects were included in the mandatory core curriculum in 86.3% of schools, accounting for 8.4 contact hours on average. Twenty-three of the 27 identified themes linked to immunizations were covered by more than 80% of schools. Compared to schools in areas where this practice was prohibited, schools in states where pharmacy students and interns were permitted to receive vaccinations more frequently provided opportunities linked to immunizations through Introductory Pharmacy Practice Experiences (IPPEs) and Advanced Pharmacy Practice.
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Training Students to Address Vaccine Hesitancy and/or Refusal	Deepti Vyas, Suzanne M. Galal, Edward L. Rogan, and Eric G. Boyce	DOI : 10.5688/ajpe6338	The purpose of the study was to assess the impact of a vaccine hesitancy learning unit on student knowledge, attitudes, and ability to address vaccine hesitancy and refusal.	The key findings indicated significant improvements in student confidence, knowledge, and skills related to vaccine hesitancy after completing the learning unit, emphasizing the importance of practical training and communication skills in preparing future healthcare professionals to address vaccination concerns effectively.
Impact of a Learning Unit on Vaccine Hesitancy in a Doctor of Pharmacy Immunization Course	Anne R. Dionne, Lauren Sittard, Lisa B. Cohen, Brett Feret, Anne L. Hume	DOI: https://doi.org/10.1016/j.cptl.2022.06.026	The purpose of this study was to assess the impact of incorporating a learning unit on vaccine hesitancy into a first-year Doctor of Pharmacy immunization course. The aim was to improve students' attitudes, comfort in discussing vaccination with patients, and knowledge regarding vaccine hesitancy to better prepare them for professional practice encounters.	The study found that the learning unit resulted in improved attitudes, self-reported comfort in talking with vaccine-hesitant patients, and self-reported knowledge about vaccine hesitancy among pharmacy students. Significant improvements were observed in students' perceptions of vaccine safety and effectiveness following the educational intervention.

Trust and Experience as Predictors of HPV Vaccine Acceptance	Laura A.V. Marlow, Jo Waller, and Jane Wardle	DOI: https://doi.org/10.4161/hv.3.5.4310	Trust and Experience as Predictors of HPV Vaccine Acceptance" by Laura A.V. Marlow, Jo Waller, and Jane Wardle was to examine the association between general vaccine attitudes, trust in doctors and the government, experience with vaccination, and acceptance of the HPV vaccine among mothers of 8–14-year-old girls	Mothers who had high trust in doctors or the government were more likely to accept the HPV vaccine. Furthermore, mothers who believed their doctor would take their vaccine concerns seriously were also more inclined to accept the vaccine. Conversely, mothers who had delayed, refused, or regretted a previous pediatric vaccination were less likely to accept the HPV vaccine. Interestingly, the child having experienced adverse effects from a previous vaccination did not show a significant association with acceptance
Development of a Vaccination Training Course for Medical Students	Hirohisa Fujikawa (Corresponding Author) Daisuke Son Hiroko Mori Satoshi Kondo Shoko Horita Masashi Izumiya Masato Eto	DOI: 10.1186/s12909-023-04299-w	The study aimed to develop a vaccination training course for medical students and examine its educational effectiveness in enhancing vaccine administration skills, especially in the context of global pandemics.	The study highlighted the importance of practical sessions in developing vaccine administration skills for medical students. Through the vaccination training course, participants reported increased interest in medical procedures, emphasized the efficacy of supervision and feedback by supervising physicians, and found the course to be instructive.

CHAPTER IV

METHODOLOGY

3.1 RESEARCH QUESTION

How does the vaccination knowledge level among participants change before and after training, and what are the perceptions of participants regarding the quality of delivery, including speaker quality, accessibility, and timeliness, in each module?

3.2 STUDY DESIGN

The research methodology incorporates quantitative methods, notably Secondary Data Analysis to investigate.

3.3 SETTING

The research will be conducted in a diverse range of healthcare settings internationally, focusing on locations where health workers are active participants in delivering vaccination programs. These settings may include urban and rural healthcare centers, hospitals, and community clinics. Health workers in these settings who have completed the International Pediatric Association's (IPA) Online Vaccine Trust Course(VTP) will be the primary subjects of the study.

3.4 STUDY POPULATION

A total of 1527 healthcare professionals who have finished the Online Vaccine Trust Course offered by the IPA make up the study population for this investigation. These individuals participate actively in providing immunization services in a range of international healthcare settings. To ensure complete representation and to provide insights into the experiences and perspectives of healthcare professionals about vaccine advocacy and communication, the study intends to include a wide spectrum of them.

Study population composition:

Healthcare Workers: This category encompasses workers from a variety of fields, including public health specialists, pediatricians, nurses, midwives, and program managers. With an emphasis on vaccination services, these people work in all facets of the delivery of healthcare.

Completion of the International Pediatric Association's (IPA) Online Vaccine Trust Course(VTP): Participants must have satisfactorily finished the IPA's online course. By requiring all participants to have undergone standardized training in vaccine advocacy and communication, this criterion establishes a uniform baseline of abilities and knowledge.

Geographic Diversity: Participants from all around the world are intended to be included in the study. This diversity aids in collecting local viewpoints on vaccination reluctance and communication while taking into account variations in the healthcare system, culture, and socioeconomic status that may affect vaccination habits.

Active Engagement in Vaccination Programs: Involved parties actively participate in providing immunization services in their healthcare environments. This requirement makes sure that the study is focused on people who are actively involved in implementing and promoting vaccination, which makes their opinions on the efficacy of training and vaccine hesitancy very pertinent.

3.4 INCLUSION CRITERIA

- Healthcare professionals and others from various disciplines who have completed the International Paediatric Association's Online Vaccine Trust Course.
- Participants who consent to be part of the study.
- Health workers are actively engaged in delivering vaccination services.
- Participants from diverse geographical locations to ensure a broad representation.

3.4 EXCLUSION CRITERIA

- Those who have not enrolled in the course.

3.7 DATA SAMPLING METHOD

Convenience sampling is used in this study to find participants for the Online Vaccine Trust Course who signed up between October 2021 and October 2022. Through the course database maintained by the International Pediatric Association, participants will be sought out worldwide. To boost enrolment, the course has been mainly advertised through IPA's networks, national member associations, and course graduates. This sample strategy makes it simple to reach a wide range of healthcare professionals who are interested in improving their advocacy and communication skills for vaccines, such as doctors, nurses, midwives, public health specialists, and program managers. To guarantee a thorough representation of healthcare professionals from all nations and backgrounds, the study also incorporates all participants who sign up for the self-paced online course and finish it within the allotted period.

3.8 DATA COLLECTION TOOL/ PROCEDURE

Utilizing a secondary data analysis methodology, the study explores vaccination advocacy and communication among medical professionals who have finished the International Pediatric Association's Online Vaccination Trust Course. The steps involved in the methodical and systematic data collection process are as follows:

Identification of Datasets: Relevant datasets with details on vaccination attitudes, vaccination knowledge gaps, and training effectiveness are found. These datasets come from IPA Vaccine Trust Course datasets which include feedback reports and surveys.

Data Extraction: This section concentrates on characteristics that are relevant to the study, such as knowledge levels before and following training, opinions regarding the caliber of speakers, accessibility, and the promptness of training modules. The extracted data are meticulously recorded and arranged in groups based on predetermined standards.

Quality Assurance: Strict adherence to predetermined techniques and standards is upheld to ensure data reliability and quality throughout the extraction process. This entails confirming the completeness and accuracy of the data while upholding moral principles about data privacy and confidentiality.

3.10 DATA ANALYSIS TECHNIQUE/TOOL

Data collected was checked for any incompleteness or partial filling, and data cleaning and analysis were done using Microsoft Excel and SPSS.

The analysis methodology encompasses the following key steps:

Data Cleaning: Carefully gathered data is cleaned to find and fix any inconsistencies, missing numbers, or anomalies. This guarantees that the dataset is ready for legitimate and correct analysis.

Descriptive Analysis: Key features of the study population and variables of interest are summed up and presented using descriptive statistics. A comprehensive summary is given by metrics like means, frequencies, and percentages.

Comparative Analysis: Methods such as paired t-tests are used to compare vaccination knowledge levels before and after training to evaluate changes in those levels. These assessments assess how well the Online Vaccine Trust Course improves.

Qualitative insights: Thematic or content analysis is used for any qualitative data that is included (such as feedback from open-ended survey questions or qualitative observations). This qualitative insight provides complex insights on training perceptions and outcomes, which supports the quantitative findings.

Statistical Software Utilization: Advanced statistical testing and modeling are supported by SPSS, whereas Microsoft Excel is useful for managing preliminary data and exploratory analysis. This two-pronged software strategy guarantees a solid study that can produce insightful results.

Interpretation and Reporting: The research questions and objectives of the dissertation are taken into consideration while interpreting the findings. Tables, charts, and narrative summaries are

used to clearly explain the results, allowing for thorough comprehension and supporting the suggestions that are supported by the available data.

3.11 ETHICAL CONSIDERATIONS

Informed written consent was obtained from all the study participants. Before beginning the interview, all the participants were informed about the purpose of the study and obtained their consent. If anyone was not willing to be a part of the study, they were not forced by any means. All the participants were explained about how their data would be collected, stored, and used, and they were assured of the confidentiality of their data. Storage of the data was done on a secured server with password protection and restricted access.

CHAPTER V

RESULTS

Table 5.1: Demographic details

Demographic Details	N=1527	%
GENDER		
Female	774	50.7
Male	753	49.3
AGE		
18-24	104	6.8
25-39	807	52.8
40-60	502	32.9
60 and above	114	7.5
DESIGNATION		
Pediatrician	855	56.0
Nurse	109	7.1
Public Health Professional	108	7.1
Program Manager	70	4.6
The Midwives	7	0.5
The Assistant of physician	5	0.3
The Other Healthcare Professional	89	5.8
Other Health Worker	20	1.3
Student (Medical, Nursing and other)	89	5.8
Other	175	11.5

Table 5.1 presents the demographic characteristics of the study population, comprising 1527 participants. In terms of gender distribution, 50.7% identified as female, while 49.3% identified as male. Regarding age groups, the majority of participants fall within the 25-39 age range (52.8%), followed by those aged 40-60 (32.9%). A smaller proportion of participants were aged 18-24 (6.8%), with an even smaller percentage aged 60 and above (7.5%).

In terms of professional designation, the largest group consisted of pediatricians (56.0%), followed by nurses (7.1%) and public health professionals (7.1%). Other healthcare professionals, including program managers, midwives, assistants of physicians, and various other healthcare workers, collectively represented the remaining portion of the study population.

Figure 5.1 Participation Rate from the Countries.

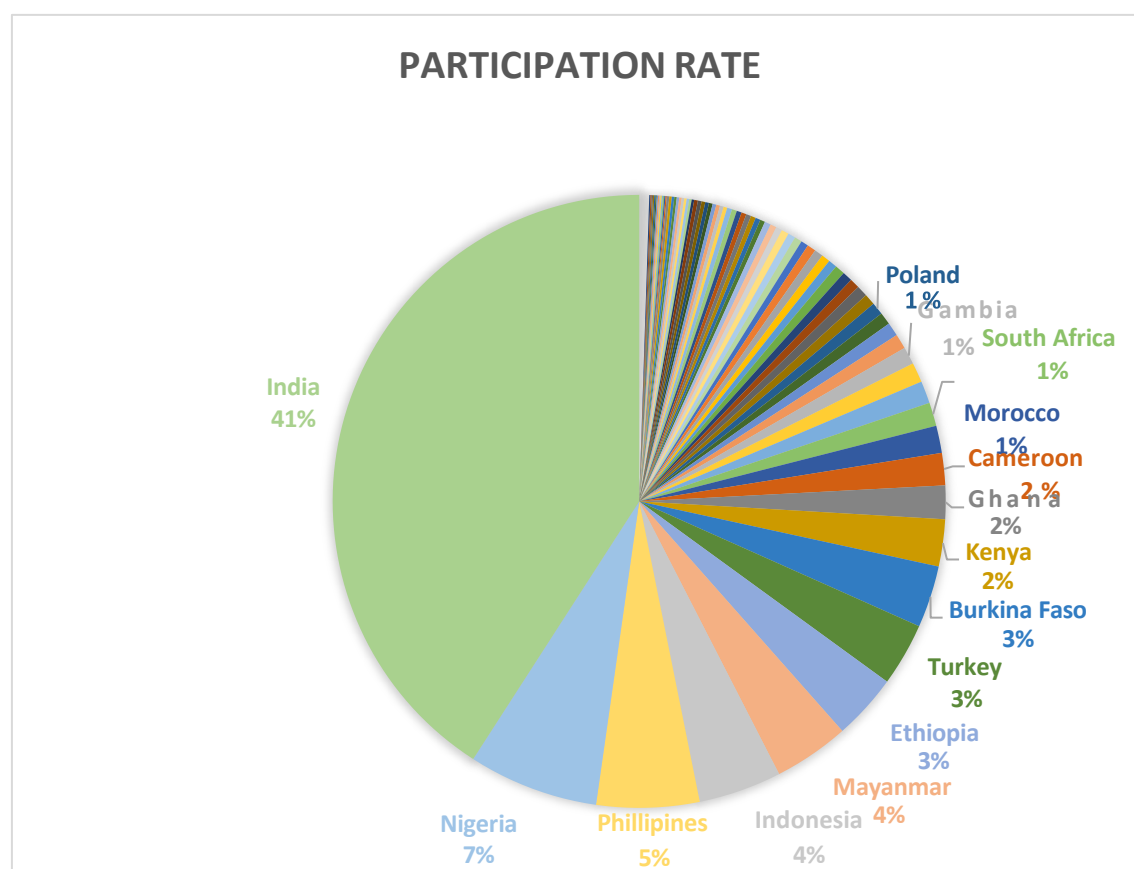


Figure 5.1 shows the participation rate of different countries in the International Pediatric Association (IPA) Vaccine Trust Course (VTP). India has the highest participation rate, at 41%. Nigeria has the second-highest participation rate, at 7%. Several other countries including the Philippines, Indonesia, Myanmar, Turkey, Burkina Faso, Ethiopia, Ghana, Kenya, Cameroon, Morocco, and South Africa all have participation rates between 1% and 4% and note that participation from all remaining countries collectively constitutes less than 1% of the total.

Table 5.2: Pre- and post-training survey Results

Questions	Pre-Training			Post Training	
1	Health workers have an important role in educating parents about the importance of childhood vaccination.				
		N	%	N	%
	Agree	1487	97.4 %	1456	95.4%
	Neutral	4	0.3%	16	1.0%
	Disagree	36	2.4%	55	3.6%
2	As a health worker, I believe my conversations with my patients can make their opinions about vaccination more positive.				
		N	%	N	%
	Agree	1479	96.9 %	1478	96.8%
	Neutral	22	1.4%	18	1.2%
	Disagree	26	1.7%	31	2.0%

3	As a health worker, I believe that my strong recommendation for vaccination will impact a patient's decision on whether or not to vaccinate.				
		N	%	N	%
	Agree	1388	90.9%	1388	90.9%
	Neutral	80	5.2%	80	5.2%
	Disagree	59	3.9%	59	3.9%
4	I feel competent to discuss vaccination with vaccine-hesitant patients.				
		N	%	N	%
	Agree	1241	81.3%	1445	94.6%
	Neutral	185	12.1%	51	3.3%
	Disagree	101	6.6%	31	2.0%
5	The large amount of information available, some accurate and some not, makes it harder for people to find trustworthy sources and reliable guidance when needed.				
		N	%	N	%
	Agree	1407	92.1%	1430	93.6%
	Neutral	66	4.3%	52	3.4%
	Disagree	54	3.5%	45	2.9%
6	I feel competent to respond to misinformation circulated on social media with an evidence-based approach				
		N	%	N	%
	Agree	1141	74.7%	1416	92.7%
	Neutral	250	16.4%	78	5.1%
	Disagree	136	8.9%	33	2.2%

7	I feel it is important for healthcare workers to counter misinformation, by actively engaging on social media and presenting facts, as well as reliable and trustworthy information about vaccines.				
		N	%	N	%
	Agree	1393	91.2 %	1451	95.0%
	Neutral	87	5.7%	48	3.1%
	Disagree	47	3.1%	28	1.8%
8	Increasing the amount of pro-vaccination content in media of all types may be of value over the longer term.				
		N	%	N	%
	Agree	1346	88.1 %	1444	94.6%
	Neutral	127	8.3%	53	3.5%
	Disagree	54	3.5%	30	2.0%
9	As a health worker, I believe that I am responsible for advocating the benefit of vaccines to influence policy change and/or build an enabling environment with a broad group of stakeholders to increase vaccine confidence.				
		N	%	N	%
	Agree	1437	94.1 %	1469	96.2%
	Neutral	71	4.6%	35	2.3%
	Disagree	19	1.2%	23	1.5%

Table 5.2 presents the role of health workers in vaccination education remained highly regarded both pre- and post-training. Before training, 97.4% agreed, while post-training, this agreement remained high at 95.4%. Neutral responses increased slightly from 0.3% to 1.0%, with a corresponding increase in disagreement from 2.4% to 3.6%.

Similarly, conversations positively influencing vaccination opinions demonstrated consistent agreement pre- and post-training, with minimal shifts. Pre-training, 96.9% agreed, and post-training, agreement remained strong at 96.8%.

The impact of strong vaccination recommendations showed stable agreement levels, with 90.9% agreement both pre- and post-training, indicating sustained conviction in the efficacy of such recommendations.

Significant positive shifts were observed in participants' perceived competence in discussing vaccination with hesitant patients. Pre-training, 81.3% expressed agreement, which notably increased to 94.6% post-training. This was accompanied by a decrease in neutral and disagreeing responses.

Participants' difficulty in finding trustworthy vaccination information showed marginal changes, with 92.1% agreeing pre-training and 93.6% post-training. Neutral responses decreased slightly, while disagreement remained relatively stable.

A substantial positive shift was evident in participants' perceived competence in responding to misinformation on social media. Pre-training, 74.7% expressed agreement, which significantly increased to 92.7% post-training. This was accompanied by notable decreases in neutral and disagreeing responses.

The importance of countering misinformation saw a notable increase in agreement post-training, rising from 91.2% pre-training to 95.0% post-training. Neutral and disagreeing responses decreased accordingly.

There was consensus on the value of increasing pro-vaccination content in media, with agreement levels remaining high pre- and post-training, at 88.1% and 94.6% respectively. Neutral and disagreeing responses decreased post-training.

Participants' sense of responsibility for advocating vaccine benefits strengthened post-training, with agreement rising from 94.1% pre-training to 96.2% post-training. Neutral and disagreeing responses decreased correspondingly, indicating a reinforced commitment to advocating for vaccines.

Table 5.3: Delivery, Content, and Satisfaction from the Modular Feedback Survey

The degree to which the learning objectives are met														
	Module 1	%	Module 2	%	Module 3	%	Module 4	%	Module 5	%	Module 6	%	Module 7	%
Completely	2478	80.7	1685	62.7	1949	77.9	2007	82.6	1860	77.5	1747	73.5	1972	83.2
Partially	11	0.4	51	1.9	17	0.7	13	0.5	27	1.1	37	1.6	13	0.5
Not at all	580	18.9	950	35.4	535	0.2	410	16.9	512	0.2	594	25.0	386	0.2
Total	3069		2686		2501		2430		2399		2378		2371	
The Content and Structure of the course														
	Module 1	%	Module 2	%	Module 3	%	Module 4	%	Module 5	%	Module 6	%	Module 7	%
Excellent	1593	51.9	1044	38.9	1383	55.3	1449	59.6	1338	55.8	1248	52.5	1396	58.9
Good	1359	44.3	1314	48.9	945	37.8	879	36.2	900	37.5	953	40.1	878	37.0
Average	111	3.6	292	10.9	153	6.1	99	4.1	154	6.4	159	6.7	93	3.9
Poor	6	0.2	36	1.3	20	0.8	3	0.1	7	0.3	18	0.8	4	0.2
	3069		2686		2501		2430		2399		2378		2371	
Arrangement of Video Lecture														
	Module 1	%	Module 2	%	Module 3	%	Module 4	%	Module 5	%	Module 6	%	Module 7	%
Excellent	1765	57.5	1207	44.9	1270	50.8	1512	62.2	1333	55.6	1238	52.1	1353	57.1
Good	1170	38.1	1159	43.1	1038	41.5	809	33.3	903	37.6	978	41.1	912	38.5
Average	123	4.0	285	10.6	177	7.1	102	4.2	149	6.2	144	6.1	98	4.1
Poor	11	0.4	35	1.3	16	0.6	7	0.3	14	0.6	18	0.8	8	0.3
	3069		2686		2501		2430		2399		2378		2371	

	The Levels of materials employed													
	module 1	%	module 2	%	module 3	%	module 4	%	module 5	%	module 6	%	module 7	%
Too Advanced	778	25.4	833	31.0	584	23.4	603	24.8	729	30.4	692	29.1	665	28.0
Advanced	184	6.0	194	7.2	171	6.8	157	6.5	123	5.1	152	6.4	148	6.2
Just about right	1983	64.6	1544	57.5	1636	0.7	1563	64.3	1474	0.6	1449	60.9	1487	62.7
Too Simple	124	4.0	115	4.3	110	0.0	107	4.4	73	3.0	85	3.6	71	3.0
	3069		2686		2501		2430		2399		2378		2371	
	Fulfilling the requirements for professional education													
	module 1	%	module 2	%	module 3	%	module 4	%	module 5	%	module 6	%	module 7	%
Strongly Agree	892	29.1	589	0.2	758	30.3	784	32.3	734	30.6	651	27.4	742	31.3
Agree	1882	61.3	1677	62.4	1517	60.7	1417	58.3	1413	58.9	1431	60.2	1426	60.1
Neutral	143	4.7	266	9.9	123	4.9	132	5.4	159	6.6	197	8.3	128	5.4
Disagree	45	1.5	71	2.6	37	1.5	31	1.3	36	1.5	50	2.1	30	1.3
Strongly Disagree	107	3.5	83	3.1	66	2.6	66	2.7	57	2.4	49	2.1	45	1.9
	3069		2686		2501		2430		2399		2378		2371	

Table 5.3 Presents the Module feedback of the course in terms of Delivery, Content and satisfaction.

1. The extent of achievement of the learning objectives

Participants' assessments of the degree to which the learning objectives are fulfilled show:

Completely: From 73.5% to 83.2% of respondents, a substantial majority of respondents in all modules express high satisfaction with the accomplishment of learning objectives. With especially high percentages, Modules 1, 4, and 7 stand out as having a great alignment between desired outcomes and actual success.

Partially: Very few respondents (between 0.4% and 1.6% across courses) believe that the learning objectives have been partially completed, pointing out relatively minor areas that still need work.

Not at all: whose percentages vary from 16.3% to 35.4% among modules- believes that the learning objectives are not at all satisfied. Higher percentages are shown in Modules 2, 4, and 6.

2. The Course's Content and Structure

The following ratings show how satisfied participants were with the course's structure and content:

Good and Excellent: Most respondents give the content and structure high marks; percentages for each module range from 81.3% to 96.2%. Significantly high ratings for modules 1, 3, and 7 in the excellent and good categories suggest that the course materials are well-thought-out and structured.

Average: A tiny portion of respondents (between 3.8% and 18.9%) rank the material as average despite the overall high level of satisfaction. Higher percentages (up to 11.1%) in these categories are found in Modules 2 and 6, indicating particular areas where enhancements could improve the overall course experience.

3. Arrangement of Video Lectures

This illustrates how satisfied you are with how the video courses are arranged:

Excellent and Good: with percentages ranging from 82.0% to 95.6%, most respondents are satisfied with how the video lectures are organized throughout all modules. The way that Modules 1, 4, and 7 are organized and delivered is seen in their repeated high ratings in the excellent and good categories.

Average: Only a lesser portion of participants (from 4.4% to 11.7%) assign an average rating

to the layout. The percentages in these categories are slightly higher in Modules 2 and 3 (up to 11.7%), indicating areas where improving the organization and delivery of video lectures could be helpful.

4. The Levels of materials employed

The perceptions of material complexity by participants throughout modules are classified as follows:

Too Advanced, Advanced, Just About Right, Too Simple: The majority of respondents to Module 1 consistently assess the contents as just about right (64.6% to 65.4%). Other modules, however, exhibit variation, with opinions of the materials being either too easy (up to 4.3%), or too advanced (31.0%). This diversity points to the necessity for modifications in some modules to better meet the needs of participants.

5. Fulfilling the requirements of Professional Education

An overview of participant opinions regarding the course's compliance with professional education criteria is provided below:

Most respondents (89.4% to 91.4% across courses) strongly agree and agree that the course satisfies professional education standards. Strong congruence with professional norms is indicated by the exceptionally high ratings given to Modules 1, 3, and 7.

Though general agreement is strong, a small portion of respondents (up to 11.1%) express neutral or unfavorable opinions. Strongly Disagree, Disagree, and Neutral. The percentages in these categories are higher in Modules 2, 6, and 7 (up to 12.4%), indicating areas where participants believe the course may better meet their goals for professional education.

Chapter VI

DISCUSSION

Aiming to enhance the vaccination advocacy and communication skills of health workers (HWs), the free online IPA vaccination Trust Course attracted 1,527 participants from 84 countries who finished all seven modules through the use of the IPA LMS (<https://ipa-world.org/ipalmsv1/index.php>). This study assessed the participants' intake, efficacy, relevance, value, and practice outcomes. The online Vaccine Trust Course was designed with a wide range of health workers in mind, whose duties encompass administering and promoting vaccinations and immunization.

Based on previous studies (7) , this well-thought-out, freely available, multiplatform online learning program seemed to be a quick and efficient way to improve the knowledge, confidence, and skills of the health workforce on a larger scale. The Overall results show that HWs generally have positive sentiments regarding vaccination and vaccine promotion. Strong opinions were voiced by the great majority of respondents on the value of teaching parents about childhood vaccinations, the influence of HW-patient discussions on vaccination decisions, and the duty of HWs to promote the advantages of vaccines. These views showed a strong baseline comprehension and commitment among HWs towards vaccination promotion, as they did both before and after the training. After training, HWs' confidence and skill levels significantly improved, especially in areas like talking about vaccinations with patients who are afraid to get them and responding to false information on social media. The training program improved competency and produced self-reported vaccination practice modifications by providing health workers (HWs) with evidence-based communication techniques and resources to address vaccine reluctance and disinformation (9)

The study also highlights the ongoing difficulties HWs have sifting through the deluge of information around vaccines; many of them admit how hard it is to identify reliable sources in the thick of it all. Nonetheless, the majority of respondents acknowledged the significance of dispelling false information on social media and boosting pro-vaccine content across a range of media channels, highlighting the critical role that Health Workers play in dispelling false information about vaccines and advancing pro-vaccine messaging.

These findings are consistent with previous studies and emphasize the value of continuing education and training initiatives for health workers (HWs) to improve their capacity for advocating for vaccines and communicating their message, particularly in light of the COVID-19 pandemic. The creation and distribution of COVID-19 vaccinations have highlighted the value of health workers (HWs) capacity to advise patients and lessen vaccine reluctance, underscoring the necessity of thorough and easily accessible training programs to assist HWs in carrying out their duties (8)

The study concludes by showing how beneficial the IPA Vaccine Trust Course is at raising HWs' levels of confidence, knowledge, and competence in vaccine advocacy and communication.

Through the training program, health workers are better prepared to combat vaccine hesitancy and disinformation, which in turn lowers vaccine-preventable diseases (10)

6.2 STRENGTHS OF THE STUDY

The study has many advantages. A team of knowledgeable faculty members created the study plan.

Expert Curriculum Development: A faculty of experts created the study curriculum, guaranteeing top-notch material in line with adult pedagogical principles.

Extensive Coverage: The course addressed important areas proven to boost vaccination acceptance, including the behavioral factors of vaccine hesitancy, effective communication techniques, and immunization advocacy utilizing a variety of strategies.

Positive Outcomes: The study showed positive outcomes post-training, with improvements in practical skills. This indicates the effectiveness of the training in translating knowledge into action.

6.3 LIMITATIONS OF THE STUDY

Selection Bias: Because the study drew volunteers who were driven to increase their knowledge and proficiency about vaccines, there may be an inherent selection bias that skews the data in favor of better outcomes.

Content Differences: Discrepancies in content or motivation levels among participants may have influenced the observed outcomes, suggesting the need for further research to explore these factors in more depth.

Scope of Evaluation: The evaluation focused on immediate and short-term outcomes post-training, and there may be a need for long-term follow-up assessments to gauge the sustained impact of the training on participants' practices and attitudes.

CHAPTER VII

CONCLUSION AND RECOMMENDATIONS

7.1 CONCLUSION

This study provides empirical evidence that health workers' (HWs') improved communication skills led to increased confidence and compassion toward caregivers for HWs who completed all seven modules of a free online modular program focused on knowledge, advocacy, and communication skills related to vaccine acceptance.

Online training replaced in-person training due to the COVID-19 pandemic crisis, increasing the quantity, diversity, and reach of HW participants. This online course was able to reach a broader and wider audience internationally in a shorter length of time than in-person training seminars.

This online course was able to reach a broader and wider audience internationally in a shorter length of time than in-person training seminars. In just 12 months, more than 1527 individuals from 91 different countries would not have been able to attend the in-person IPA courses. Additionally, the online course made greater use of the experts' time when delivering the modules by cutting down on travel time and costs. The project's initial findings and anecdotal evidence from trained health workers involved in external engagement show a definite need for course materials designed especially to enhance health workers' communication abilities around vaccinations and immunizations. The rates of routine vaccinations are declining globally. Thus, improving public health requires tackling vaccination acceptability and misinformation.

7.2 RECOMMENDATIONS

Long-Term Follow-Up: Conducting long-term follow-up assessments post-training can provide valuable insights into the sustained impact of the course on participants' practices and attitudes. This will help assess the long-term effectiveness of the training program.

Interactive Learning: Incorporate more interactive sessions and fewer surveys in the course structure to engage participants effectively. Shorter video lectures and reading materials can help maintain participants' attention and improve knowledge retention.

REFERENCES

1. Rémy V, Zöllner Y, Heckmann U. Vaccination: the cornerstone of an efficient healthcare system. Journal of market access & health policy 2015;3(1):27041.
2. World Health Organization. COVID-19 pandemic leads to major backsliding on childhood vaccinations, new WHO, and UNICEF data shows. Available from: <https://www.who.int/news/item/15-07-2021-covid-19-pandemic-leads-to-major-backsliding-on-childhood-vaccinations-new-who-unicef-data-shows>.
3. World Health Organization. Immunization agenda 2030: a global strategy to leave no one behind. Available from: <https://www.who.int/teams/immunization-vaccines-and-biologicals/strategies/ia2030>.
4. Loomba S, de Figueiredo A, Piatek SJ, de Graaf K, Larson HJ. Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. Nat. Hum Behav 2021;5:337–48.
5. Elayaperumal S, Venugopal V, Dongre AR, Kumar S. Process of Developing Palliative Care Curriculum for Training Medical Interns in a Tertiary Care Teaching Hospital in Puducherry. India Indian Journal of Palliative Care 2021;27(2):269.
6. Empowering Health Workers to Build Public Trust in Vaccination: Experience from the International Pediatric Association's Online Vaccine Trust Course, 2020–2021. <https://doi.org/10.1016/j.vaccine.2022.11.061>
7. Marcum ZA, Maffeo CM, Kalsekar I. The impact of an immunization training certificate program on the perceived knowledge, skills and attitudes of pharmacy students toward pharmacy-based immunizations. Pharm Pract Granada 2010;8(2):103–8.
8. World Health Organization. COVID-19 Vaccines. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines> WHO [Cited May 2022].

9. <https://www.unicef.org/eca/media/35331/file/Guide%20for%20health%20workers%20on%20strengthening%20confidence%20in%20vaccines.pdf.pdf>
10. Shalansky RA, Wu M, Shen SC, Furness C, Morris SK, Reynolds D, et al. Evaluation of a pilot immunization curriculum to meet competency training needs of medical residents. *BMC Med Educ* 2020 Nov 17;20(1):442.
11. Bushell M, Frost J, Deeks L, Kosari S, Hussain Z, Naunton M. Evaluation of Vaccination Training in Pharmacy Curriculum: Preparing Students for Workforce Needs. *Pharmacy* 2020;8(3):151.
12. Mills S, Emmerton L, Sim TF. Immunization training for pharmacy students: a student-centered evaluation. *Pharm Pract* 2021;19(3):2427–2427.
13. Feret B, Orr K, Bratberg J, MacDonnell C. Evaluation of immunization training in the curriculum of first- and third-year pharmacy students. *Curr Pharm Teach Learn* 2015;7(4):541–5.
14. Pelly, L. P., & MacDougall, D. M. P. (2010). A Halperin, B.; Strang, AR; Bowles, SK; Baxendale, DM; McNeil, AS The Vaxed Project: An Assessment of Immunization Education in Canadian Health Professional Programs. *BMC Med. Educ*, 10, 86.
15. Dybsand LL, Hall KJ, Carson PJ. Immunization attitudes, opinions, and knowledge of healthcare professional students at two Midwestern universities in the United States. *BMC Med Educ* 2019;19(1):1–9.
16. Kaufman J, Attwell K, Hauck Y, Omer SB, Danchin M. Vaccine discussions in pregnancy: interviews with midwives to inform design of an intervention to promote uptake of maternal and childhood vaccines. *Human vaccines &* 2019;15(11):2534–43.
17. Muehlhans S, von Kleist M, Gretchukha T, Terhardt M, Fegeler U, Maurer W, et al. Awareness and utilization of reporting pathways for adverse events following immunization: online survey among pediatricians in Russia and Germany. *Pediatric Drugs* 2014;16(4):321–30.

18. Hak EB, Foster SL, McColl MP, Bradberry JC. Evaluation of student performance in an immunization continuing education certificate program incorporated in a pharmacy curriculum. Am J Pharm Educ 2000;64(2):184–7.
19. Statista. Coronavirus (COVID-19) deaths worldwide per one million population, by country. Available from: <https://www.statista.com/statistics/1104709/coronavirus-deaths-worldwide-per-million-inhabitants/> [Cited July 2022].
20. Our World in Data. Coronavirus (COVID-19) Vaccinations. Available from: <https://ourworldindata.org/covid-vaccinations> [Cited July 2022].
21. Sarnquist C, Sawyer M, Calvin K, Mason W, Blumberg D, Luther J, et al. Communicating About Vaccines and Vaccine Safety. J Public Health Manag Pract 2013;19(1):40–6.

ANNEXURE

PRE AND POST SURVEY QUESTIONNAIRE

Sl No	Questions
1	Gender
2	Age
3	Designation
4	Health workers have an important role in educating parents about the importance of childhood vaccination.
5	As a health worker, I believe my conversations with my patients can really make their opinion about vaccination more positive.
6	As a health worker, I believe that my strong recommendation for a vaccination will impact a patient's decision on whether or not to vaccinate.
7	I feel competent to discuss vaccination with vaccine-hesitant patients.
8	The large amount of information available, some accurate and some not, makes it harder for people to find trustworthy sources and reliable guidance when needed.
9	I feel competent to respond to misinformation circulated on social media with an evidence-based approach
10	I feel it is important for healthcare workers to counter misinformation, by actively engaging on social media and presenting facts, as well as reliable and trustworthy information about vaccines.
11	Increasing the amount of pro-vaccination content in media of all types may be of value over the longer term.
12	As a health worker, I believe that I am responsible for advocating the benefit of vaccines to influence policy change and/or build an enabling environment with a broad group of stakeholders to increase vaccine confidence.

MODULE-WISE FEEDBACK QUESTIONNAIRE

Sl.	Questions
1	Name
2	Country
3	Gender
4	Age
5	Designation
6	To what extent did the module enable you to meet the learning objectives?
7	How would you rate the module structure and content?
8	To what extent was the speaker organized and effective during the video lecture?
9	The level of the material in the module was?
10	The module met my professional educational needs.

IPA VACCINE TRSUT COURSE DASHBOARD

ipa-world.org/ipalmsv1/app-student-dashboard.php

International Pediatric Association
Every Child - Every Age - Everywhere

Ms Sanskriti Bhardwaj

My Courses

Your recent courses

Course Name	Progress
IPA Vaccine Trust Course - Level 1 (English)	100%

[OVERALL COURSE FEEDBACK](#) [GO TO COURSE](#)

Announcements

Five Latest Announcements from system

Greetings and Welcome to the Learning Management System by the International Pediatric Association! 15 December 2020

IPA Vaccine Trust Course - Level 1 (English)

Module Wise Progress

Module	Progress
Module 1 Infodemiology	100%
Module 2 Behavioral Science behind Vaccine Acceptance Interventions	100%
Module 3 Interpersonal Communication	100%
Module 4 Social Media Engagement	100%
Module 5 Dealing with Vocal Vaccine Deniers	100%
Module 6 Interacting with Media	100%
Module 7 Building Vaccine Value - Advocacy & Messaging to Effect Change	100%

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MODULE CONTENTS



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 Module 2 | Behavioral Science behind Vaccine Acceptance Interventions

By the end of this module, you will be able to:

- Understand human behavioural science basics and principles of persuasion for behavior change
- Develop knowledge and critical understanding of social psychological and cultural influences behind vaccination behaviors with the help of proven theoretical models
- Use various behavioral approaches/strategies for vaccine acceptance and demand

BEGIN SECTION

1. ● Pre-test

2. ● Pre Reads

3. ● Video Lecture

4. ● Post-test

5. ● Module Feedback